



Support to the Evaluation of the EU Biodiversity Strategy to 2020, and Follow-Up

Final evaluation report

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Support to the Evaluation of the EU Biodiversity Strategy to 2020, and Follow-Up

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CONTENTS

Executive Summary	i
Overall	iii
By target	vi
1 Introduction	1
1.1 Purpose of the report	1
1.2 Scope of the report	1
1.3 Structure of the report	1
2 Methodology of the evaluation study	1
2.1 Methodological approach to evaluating the Strategy	1
2.2 Intervention logic	2
2.3 Evaluation questions	3
2.4 Consultation Strategy	3
2.5 Evidence gathered	6
2.6 Baseline (“counterfactual”) for the evaluation	7
2.6.1 Contribution of pre-existing policies and connections to the Strategy	7
2.6.2 Summary of BAU	14
3 Introduction to the EU Biodiversity Strategy to 2020	15
3.1 The problem	15
3.2 The policy response	16
3.2.1 Global biodiversity policy under the UN Convention on Biological Diversity	16
3.2.2 European biodiversity policy and the EU Biodiversity Strategy to 2020	16
4 Analysis of effectiveness	21
4.1 Introduction	21
4.2 Analysis of the evaluation questions	21
4.2.1 EQ 1 (EQ 1.1-1.3) To what extent has the Strategy worked as expected?	21
4.2.2 EQ 2 (2.1-2.2) What have been the major achievements of the Strategy, and the causes of these achievements?	74
4.2.3 EQ 3 (EQ 3.1-3.3) Where the Strategy has failed to achieve one of its objectives, what have been the contributing causes?	79
4.2.4 EQ 4 To what extent have stakeholders been actively engaged in the strategy’s implementation?	91
5 Analysis of efficiency	93
5.1 Introduction	93
5.2 Analysis of the evaluation questions	93

5.2.1	EQ 5 - To what extent has the Strategy been cost-effective?	93
5.2.2	EQ 6 - Was the Strategy the most appropriate instrument to achieve the EU biodiversity targets to 2020?	100
5.2.3	EQ 7 - What have been the socio-economic impacts of the Strategy?.....	104
6	Analysis of relevance	111
6.1	Introduction	111
6.2	Analysis of the evaluation questions	111
6.2.1	EQ 8 - To what extent did the targets of the Strategy correspond to the needs of the EU with regard to biodiversity over the period 2011 to 2020?	111
6.2.2	EQ 9 - Was the Strategy flexible enough to respond to new or emerging issues?	115
6.2.3	EQ 10 - How relevant was the Strategy for addressing the needs and interests of different stakeholders and for EU citizens?	118
7	Analysis of coherence	125
7.1	Introduction	125
7.2	Analysis of the evaluation questions	125
7.2.1	EQ 11- To what extent is the EU Biodiversity Strategy coherent with the Europe 2020 Strategy for smart, sustainable and inclusive growth?	125
7.2.2	EQ 12 - To what extent does the Strategy support other EU environmental policy objectives, for example, in relation to clean air and water, the marine environment, the transition to a circular economy, sustainable production and consumption, soil protection, sustainable land use and management, waste management, and the sustainable use of resources? What are the synergies or overlaps?	128
7.2.3	EQ 13 - To what extent are the biodiversity targets coherent with and mainstreamed into other EU policies, in particular on agriculture, forestry, fisheries, regional and urban development, infrastructure (in particular transport, energy and environmental infrastructure, ports, and mining), tourism, climate mitigation and adaptation, research and innovation as well as trade and development cooperation?	130
7.2.4	EQ 14 - To what extent is the Strategy aligned with the EU's international commitments under the Convention on Biological Diversity (Aichi targets), the Sustainable Development Goals, and the United Nations Framework on Climate Change?	135
8	Analysis of EU Added Value	137
8.1	Introduction	137
8.2	Analysis of the evaluation questions	137
8.2.1	EQ 15- What is the added value resulting from the EU Biodiversity Strategy compared to what is likely to have been achieved by the Member States in its absence?	137
8.2.2	EQ 16- How do Member States' targets add up or compare to the targets at EU-level?	143
9	Horizontal measures.....	147
9.1	Further strengthen the EU biodiversity knowledge base	147
9.2	Build partnerships for biodiversity.....	148
9.3	Mobilise financial resources to support biodiversity and ecosystem services	149

10	Conclusions	151
10.1	Conclusions per evaluation criteria.....	151
	Appendix A- Glossary	165
	Appendix B- Evaluation methodology and framework.....	169
	Appendix C- Member States Reports.....	209
	Appendix D - Consultation Report.....	211
	Appendix E - Coherence supplementary evidence.....	213

Executive Summary

Purpose of the report

This study provides the views of the contractors on the EU Biodiversity Strategy to 2020 (hereafter ‘the Strategy’) and is a significant input to the European Commission’s evaluation of the Strategy. The study has been delivered by Trinomics B.V. together with Institute for European Environmental Policy (IEEP) and UNEP’s World Conservation Monitoring Centre (UNEP-WCMC), International Union of Conservation of Nature (IUCN), denkstatt and ENT.

The study considers the effectiveness, efficiency, relevance, coherence and EU added value of the Strategy. The Strategy was agreed by Member States in 2010, and had the headline target of *halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU’s contribution to averting global biodiversity loss*.

The Strategy had the following six sub-targets (with 20 related actions):

- Target 1: fully implement the Birds and Habitats Directives;
- Target 2: maintain and restore ecosystems and their services;
- Target 3: increase the contribution of agriculture and forestry to maintaining and enhancing biodiversity;
- Target 4: ensure the sustainable use of fisheries resources;
- Target 5: combat invasive alien species;
- Target 6: help avert global biodiversity loss.

Methodology

EU policy evaluation takes place against standard criteria and following a well-defined methodology, in accordance with the Better Regulation Guidelines¹. These guidelines provide a common EU framework, as interpreted below in this study in relation to the Strategy:

Effectiveness - Has the Strategy achieved the aims it was designed for?

Efficiency - Have the objectives been achieved in a cost-effective manner and has administrative burden been proportionate?

Coherence - Is the Strategy in line with the EU’s broader environmental, social and economic policy goals?

Relevance - Are the targets still in line with the needs regarding biodiversity in the EU?

EU added value - What is the Strategy’s added value compared to what Member States could have achieved with their own efforts?

To assess the strengths and weaknesses against these criteria in a systematic way, a number of more detailed evaluation questions were set and answered. The evidence was gathered from a wide range of qualitative and quantitative sources including:

Review of literature: Numerous literature sources were studied, the majority of which were academic studies, Commission reports on the impact assessment, evaluation, review and implementation of relevant policies, position papers by stakeholders, as well as publications from the European Environment Agency (EEA), the Commission Joint Research

¹ European Commission, SWD(2017) 350, Better Regulation Guidelines https://ec.europa.eu/info/better-regulation-guidelines-and-toolbox_en

Centre (JRC), independent studies, policy documents, and projects funded by the EU; as well as national policies, publications and reports, including National Reports to the Convention on Biological Diversity.

Online public consultation through an online questionnaire using the Commission's consultation website. The questionnaire was made available in 23 EU languages through the EU Survey tool² on the EU Survey portal January to April 2021. The consultation received a total of 111,842 responses.

Targeted consultations including:

Interviews with EU-level organisations: a total of 30 interviews were conducted with representatives of EU-level umbrella organisations, to gather perspectives and additional evidence about the implementation of the Strategy;

Interviews of Member State representatives: as part of 10 Member State case studies, interviews were undertaken of five Member State representatives per case study, focusing on successes and failures of implementation;

Online survey in 10 Member States: a survey was made of expert stakeholders from the 10 Member State case study nations, to gather additional views and evidence of implementation successes and failures. A total of 64 stakeholders provided a response.

The analysis sets out to be transparent and clear on the evidence upon which it is based and its limitations. Biodiversity knowledge has increased significantly over the past years in the EU, among other reasons as a result from reporting under environmental legislation, strengthened monitoring, research under Horizon 2020 as well as the mapping and assessment of ecosystems and their services that has advanced in all EU Member States. At the global level, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) has provided the first global, peer reviewed assessment of biodiversity and ecosystem services, including the main direct and indirect drivers of loss, impacts on human wellbeing as well as pathways for transformative change. Advances in the economics of biodiversity and ecosystem services have also been made since the Strategy's publication.

Experience in the Member States offers evidence on implementation successes and challenges, and the factors behind them. These and further sources, complemented with evidence and views provided by stakeholders, form a good evidence basis for the assessment of progress to the headline target to halt and reverse biodiversity loss, as well as to the individual biodiversity targets, and of the evaluation questions.

At the same time, some evidence gaps were identified in this study, for example relating to: the condition of marine ecosystems; cost-benefit data for several targets; concrete evidence on the extent to which effects on biodiversity or other impacts have arisen from the implementation of the EU Strategy (related to difficulties in establishing a counterfactual scenario). This meant that, even when evidence on biodiversity outcomes and impacts was strong, it was often difficult to attribute them with a degree of certainty to the Strategy (as opposed to other actions and the impact of other legislation or EU policies). While the Strategy itself had a non-binding nature, a number of actions in its broad scope concerned the implementation of existing legislation, rendering clear attribution to the Strategy challenging.

Main findings

² <https://ec.europa.eu/eusurvey/home/welcome>

Main findings are provided for the Strategy overall, and per evaluation criteria.

Overall

Effectiveness - what has worked well:

The Strategy has been associated with a range of positive achievements encompassing, inter alia, stakeholder involvement, increased integration of biodiversity with other EU policies, invasive alien species legislation, and (small) increase in EU funding towards biodiversity activities, yet attributing these impacts directly to the Strategy itself is challenging. This is largely due to the non-binding nature of the Strategy, meaning that it also lacks directly related reporting mechanisms. In addition, many of the Targets and Actions of the Strategy support rely upon the implementation of other policies and Directives.

The establishment of the Strategy has supported monitoring of progress based on the 2010 baseline. This is an essential step to the continuation of tracking and monitoring biodiversity status throughout the EU, and to inform decision making processes.

A range of monitoring frameworks have been established in relation to the Targets and Actions defined under the Strategy, which continue to build on the knowledge of the status of EU habitats and species.

Effectiveness - what has not worked well:

With the exception of Target 5 on invasive alien species, progress towards the Strategy Targets has been limited. A range of barriers hindering progress towards Targets have been identified, with the lack of legally-binding provisions commonly cited as a key reason for limited action and progress on the biodiversity agenda throughout Europe (particularly on Target 2).

Many direct and indirect pressures and drivers of biodiversity loss remain, with a significant proportion of these accelerating in recent times, such as climate change-related pressures (increased average air temperature, decreased effective rainfall, increased extreme droughts), ocean acidification and land use changes (intensification of agriculture, forestry, fisheries and urbanisation). Despite the identification of successful biodiversity actions noted throughout the report, these have been insufficient to prevent continued biodiversity loss.

The lack of a comprehensive overview of harmful subsidies has inhibited targeting and advocating for the removal of such funding which continues to drive biodiversity loss in the EU and globally.

Despite increases in funding, it is clear that it remains insufficient to achieve the EU's biodiversity targets. Information gaps on funding also limit the tracking of its effectiveness and efficiency for some of the targets, particularly Target 6.

Similarly, biodiversity actions within the EU such as protected area management suffer from limited implementation, due to varying degree of political support and priority given to biodiversity objectives, insufficient conservation measures, limited management planning, inadequate funding and a lack of effectiveness indicators and monitoring.

Consultations identified that improved awareness and engagement of various stakeholders have resulted from the activities stemming from the Strategy, yet 'silo thinking' is still prevalent in many instances. This prohibits the development of holistic approaches to tackling complex biodiversity issues.

Efficiency - what has worked well:

Overall, the analysis of the Efficiency question shows that the Strategy had the potential to give rise to economic benefits that could far exceed the costs incurred from the full implementation of its targets and actions.

The literature indicates that investments which deliver against the individual targets of the Strategy give rise to cost effective measures and activities, with some exceptions (discussed further below).

In terms of the socio-economic impacts of the Strategy, the current implementation of the components of the Strategy's targets already support directly and indirectly hundreds of thousands of jobs and generate income for (rural) communities all across the EU.

Efficiency - what has not worked well:

Although it is estimated that the full implementation of the Strategy would generate net benefits, the current level of progress towards achieving most of the targets does not fully capture these benefits and the EU's natural capital is progressively deteriorating.

The analysis showed that the non-binding nature of the Strategy hindered progress towards its targets and in turn the cost-effectiveness of the Strategy. Another Strategy that combines legally binding instruments, especially for ecosystems restoration, with innovative financing mechanisms could be expected to deliver better results in terms of overall implementation and increased funding opportunities.

Some negative socio-economic impacts can be generated by some of the Strategy's actions, such as diminished economic development due to restrictions in Natura 2000 sites; however, these are considered minimal and lower than the positive impacts.

Relevance - what has worked well:

The Strategy was underpinned by a strong evidence base and clear links were made between societal needs and the Strategy's targets. The Strategy targets are widely recognised by experts and stakeholders as being relevant to the EU's needs with respect to biodiversity.

While some issues have grown in prominence, overall needs have not changed since the Strategy was published, so it is generally regarded as remaining relevant to needs.

The Strategy and its targets have provided a broad and flexible framework, enabling action on emerging issues such as pollinators and marine plastics alongside existing commitments.

The Strategy is relevant to EU citizens and the economy overall, as well as to the needs of a wide range of stakeholder groups.

Relevance - what has not worked well:

The Strategy and its targets are not comprehensive, and halting biodiversity loss relies also on implementation of wider EU policy.

The Strategy and its targets have been criticised as inadequate and insufficiently ambitious due to their non-binding nature and inability to address wider challenges identified at the time of the Strategy (insufficient integration across other sectoral policies, incomplete implementation of existing legislation, funding shortages, inadequate governance, limited awareness about biodiversity).

Far from being inflexible, critics argue that the Strategy is too broad and would have benefited from greater specificity and more binding targets and actions

Not all stakeholders see the Strategy as relevant to their needs, with some critical that it puts too little emphasis on business needs.

Coherence - what has worked well:

The Strategy declares that it is an integral part of the Europe 2020 Strategy, particularly the resource efficient Europe flagship initiative. The Strategy contributed to the Europe 2020 strategy objectives through training, job creation, building knowledge base using digital tools, promoting innovation e.g. for green infrastructure in cities, and citizen engagement and awareness raising activities. In practice, the policy instruments and funding streams of the Europe 2020 strategy were used in some ways to advance synergistic projects (e.g. Horizon 2020, ERASMUS, LIFE), though it is not possible to attribute these directly to the effect of the Strategy.

Overall, the Strategy and the other environmental objectives are closely linked and mutually supportive. The Biodiversity Strategy targets depended on the implementation of environmental legislation. Local level examples give evidence of nature restoration projects bringing environmental benefits and synergies with environmental objectives.

There has been progress on biodiversity mainstreaming at the level of policy objectives and instruments at the EU level, including better biodiversity proofing of EU funds, but gaps remained at the implementation level and many of the key decisions were made at the Member State level or at regional levels of governance. The Strategy included targets and actions directly aimed at biodiversity mainstreaming in the EU policies on agriculture, forestry, and fisheries, and the coherence of these policies with the biodiversity objective has improved since 2011. Some aspects of implementation have also improved in coherence, leading to greater synergies, and they have a key role to play in moving towards sustainable use that is compatible with biodiversity conservation. The Strategy did not include targets and actions directly aimed at a range of economic development sectors (transport, energy, mining, tourism and EU funding for regional and urban development) but did programme actions to improve Natura 2000 protection and governance in relation to these sectors, such as guidance documents, training for judges and public prosecutors, green infrastructure planning, improved methods for assessing impact of EU funded projects, plans and programmes on biodiversity, and the no net loss initiative. Improved biodiversity proofing of EU funding to regional and urban development has improved coherence.

The Strategy was adopted in the aftermath of the 2020 Aichi Targets and is therefore generally considered to be in line with the global commitments. However, there are some exceptions. For example, the Aichi Target 11 specifies quantified targets for protected area (Aichi Target 11), whereas no such quantifiable objectives exist within the Strategy. The Strategy was, in general, in line with the relevant targets of the Sustainable Development Goals (SDGs) 14 and 15 on life under water and on land. The most relevant SDGs are 12, 13, 14 and 15 within which framework some targets and actions from the Biodiversity Strategy are directly interrelated. There were numerous synergies between the Strategy and the EU's commitments for climate action under the United Nations Framework Convention on Climate Change (UNFCCC). Overall, the Strategy was coherent with international climate commitments, but it is less clear whether potential synergies have been maximised.

Coherence - what has not worked well:

The biodiversity and Europe 2020 strategies did not make explicit how the joint priorities can be realised, and therefore did not provide incentives for synergies. Although the Strategy identified several needs that were clearly related to the flagship initiatives, including

skills and jobs, digital infrastructure and tools and innovation, these were not reflected in the priorities set by the flagship initiatives nor in the indicators. Furthermore, biodiversity-related issues were not adequately disseminated throughout the Juncker Commission 2014-2019 period, which could have impacted the coherence between and amongst various policy domains.

There are still elements of incoherence and even conflicts between sectoral policies and the biodiversity strategy (failures of proofing and safeguarding), as well as a failure to use measures to their fullest potential to create synergies (including inadequate funding and reach of measures). Agriculture, forestry and fisheries have significant pressures on biodiversity and the biodiversity indicators associated with all three sectors are still declining (see effectiveness). However, investments in transport and energy infrastructure continue to pressure biodiversity rather than incentivising synergies, due to the failure to mainstream biodiversity objectives, and this was highlighted in the case studies as a major reason for failures to achieve the EU targets.

EU Added Value - what has worked well:

The design of the Strategy leveraged a number of significant potential sources of EU value added and thus the potential for EU value added from the Strategy was large, in particular through enhanced cooperation and stakeholder engagement, facilitating transboundary cooperation, setting a common best practice framework across the EU, driving greater ambition and leveraging financing for biodiversity.

A number of innovations and opportunities for EU-level collaboration and information-sharing have been provided through the Strategy, including the MAES outputs and various forums for collaboration.

EU value added is also created through delivering an overarching framework for the consideration of biodiversity that Member States can apply in their own national strategies.

Evidence from case studies points at significant influence of the Strategy in the development of ambitious strategies at national level in many cases

EU Added Value - what has not worked well:

The lack of binding instruments has limited more ambitious action by Member States

The absence of dedicated financing measures associated with the Strategy has further inhibited the allocation of sufficient funds to deliver on the ambitions of the Strategy

Lack of clear and transparent data on expenditures further limits an understanding of the resources applied to implementation of the Strategy

These combine to explain the failure to sufficiently deliver against the six targets of the Strategy

By target

Target 1:

Effectiveness: The establishment of the Natura 2000 network is regularly cited as a major success story. Non-bird species and Annex I habitats are more likely to have a good conservation status if their respective populations or habitat area are well represented by the Natura 2000 network, whilst certain species beyond the Natura 2000 sites also benefit from the network.

Effectiveness: Natura 2000 sites continue to suffer from insufficient management, with inadequately defined conservation objectives and subsequent measures hindering the effectiveness of such sites.

Efficiency: Cost effectiveness of action in relation to Target 1 is high based on existing evidence, although limited progress has been identified and direct attribution of impacts to the Strategy is difficult to establish

Efficiency: Shortcomings in funding mobilisation reduced the net benefits produced within Target 1.

Relevance: The fitness check of the EU Nature Directives confirmed their continuing relevance in addressing all types of pressures facing protected species and habitats, providing key support to attaining the objectives of the Strategy.

Relevance: Target 1 was widely seen as relevant, though some critics noted it focused entirely on EU rather than national protected areas

Coherence: Nature Directives work in conjunction with other EU environmental legislation and policies (aided by guidance on sectors and Natura 2000 and on links between nature directives and other key legislation). Actions under the Strategy and the Action Plan for Nature, people and the economy have further supported policy integration.

Coherence: Integration with sectoral policies in practice (energy, infrastructure, fisheries, agriculture) still insufficient and these sectors continue to exert pressure on biodiversity.

EU Added Value: The significant growth in the Natura 2000 network is a clear representation of added value at the EU level.

EU Added Value: The EU value-add of a connected Natura 2000 network is reduced by weaknesses in implementation, including funding at EU and MS level, cross-border cooperation, and management challenges

Target 2:

Effectiveness: MAES activities have led to one of the most advanced regional ecosystem assessment schemes, building a significant knowledge base on EU ecosystems and the services they provide.

Effectiveness: The lack of a consistent, EU-wide coherent approach to restoration actions (and monitoring of such actions) has hindered restoration activity. The minimum uptake of Restoration Prioritisation Frameworks (RPFs) and the lack of political will by Member States to implement restoration activities are seen as key barriers to the achievement of the Target, whilst ambiguity of the Target itself has limited its effectiveness.

Efficiency: High cost-effectiveness of restoration investments are identified in the literature, and actions undertaken in Target 2 can be expected to contribute to greater efficiency in such investments, although attribution remains unclear and limited restoration outcomes reduce the scale of benefits produced against this target.

Efficiency: Lack of a dedicated funding instrument associated with Target 2 likely resulted in uneven implementation across Member States, reducing the efficiency of investment

Relevance: Target 2 was aligned with international commitments under the CBD Aichi targets and addressed evidenced and ongoing needs with respect to ecosystem restoration, green infrastructure and no net loss.

Relevance: Target 2 was criticised as insufficiently specific regarding the definition of degraded ecosystems and their restoration, and the lack of supporting actions or commitment to allocate financial resources for implementation

Coherence: Target 2 is coherent with the Europe 2020 Strategy, the global Aichi Target to restore 15% of ecosystems; and can provide significant contribution to other EU environmental legislation on nature, water, marine as well as climate objectives.

Coherence: There is high potential for synergies through ecosystem services / nature-based solutions in decision-making (GI Strategy, guidance on integrating ecosystem services). However, low uptake of win-win nature-based solutions in restoration.

EU Added Value: Significant progress in the knowledge base and the development of the Green Infrastructure Strategy has led to incorporation of GI into national strategies and plans, and urban policy

EU Added Value: Structural weaknesses relating to funding of restoration and legally-binding targets appear to have limited the scale of implementation and therefore the value delivered through this target. Significant knowledge gaps relating to restoration remain, and general awareness of restoration needs is lacking

Target 3a:

Effectiveness: Agri-environmental- and climate measures, and Natura 2000 measures funded through the CAP have shown to have positive impacts at local scale. Actions through the EIP-AGRI initiative have facilitated collaboration amongst farmers in order to implement a range of projects which have the potential to benefit biodiversity.

Effectiveness: The impacts of greening measures at EU-level were limited due to their insufficient coverage and favourability to select low-impact biodiversity measures by farmers.

Efficiency: The large scale of expenditure sourced from the CAP for biodiversity-related purposes reflects the scale of potential benefit that could be produced in this area.

Efficiency: Despite the highest expenditure on biodiversity in the EU from the CAP (estimated at around 70% of total expenditure) and some identified benefits produced, most evidence points the need to improve cost-effectiveness of this expenditure on current allocation.

Relevance: Target 3a focused on integration of biodiversity into the management of agriculture, which is widely recognised as being important to halt biodiversity decline.

Relevance: Target 3a did not address pressures such as the impact of pesticides and was criticised as lacking specificity and impetus for action

Coherence: Revised CAP 2014 is coherent with the Strategy at the level of policy objectives and available instruments.

Coherence: Varying degrees of uptake of CAP measures focused to biodiversity. Prioritising support for more intensive land use options by many Member States is likely to have resulted in continued or increased pressures on biodiversity and ecosystem services.

EU Added Value: Several CAP instruments and measures contributed to biodiversity goals (Agri-environment-climate measures and Natura 2000 payments and organic farming payments but also non-productive investments)

- EU Added Value: The design and funding of AECM support for intensive cropping farms has been insufficiently attractive to bring about the changes in management necessary to improve their biodiversity performance.

Target 3b:

Effectiveness: Sustainable Forest Management Plans are used as a tool by forest owners throughout Europe, yet information on their effectiveness and inclusion of biodiversity-

relevant measures (particularly given the heterogenous nature of forest management plans between MS, regions and forest types) needs to be further analysed.

Effectiveness: Forest management plans commonly lack a holistic approach to forest sustainable forest management, which includes in various degrees, biodiversity conservation and restoration aspects. However, significant portions of EU privately owned forests are not covered by management plans and vary in the degree to which they integrate biodiversity objectives.

Efficiency: Innovative finance mechanisms such as Payments for Ecosystem Services (PES) have led to private initiatives which can benefit biodiversity in forest ecosystems (despite uptake achieved at local rather than EU scale).

Efficiency: PES use in forestry was only marginal and associated efficiency gains were therefore not realised.

Relevance: Target 3b focused on integration of biodiversity into the management of forestry, which is widely recognised as being important to halt biodiversity decline.

Coherence: CAP includes forest biodiversity support measures but the use of these measures has remained limited.

Coherence: CAP forest measures can be limited in scope and carry a risk of incoherence.

Member State implementation of CAP Pillar 1 rules exclude areas of traditional agroforestry from CAP payments, and investments are commonly made with insufficient biodiversity proofing.

EU Added Value: Increased uptake across the EU of measures in forestry related to biodiversity conservation, associated with genetic resource conservation and stabilisation of common forest bird populations

EU Added Value: Weaknesses and inconsistencies in forest management planning and/or sufficient integration of biodiversity measures into plans across Member States has reduced the efficiency of investment produced by Target 3b

Target 4:

Effectiveness: Important legislative frameworks have been developed to assist in delivering Target 4, yet the majority of these developments are not directly attributable to the Strategy. For example, under the CFP important developments have been made in regards to TACs, multi-annual plans, landing obligations, technical measures and discard plans. The introduced MSY objective has begun to lead to a shift from precautionary approaches to fishery management to approaches more aligned to scientific advice.

Effectiveness: Many fish stocks remain overfished and/or outside safe biological limit (acknowledging that this tackling this alone would not lead to biodiversity benefits), whilst data gaps (on status and trends of marine ecosystems) hinder the implementation and potential effectiveness of measures which could benefit marine biodiversity.

Efficiency: The establishment of the MSY concept and achieving healthy stocks in some regions (notably the NE Atlantic) creates not only potential biodiversity gains, but economic benefits to a range of stakeholders

Efficiency: Continued overfishing produces socio-economic impacts as well as reduced ecosystem service delivery.

Relevance: Target 4 focused on the sustainability of fisheries and addressed an important need with respect to biodiversity conservation.

Relevance: Target 4 focused primarily on fisheries and did not directly address wider pressures on marine biodiversity.

Coherence: Revised CFP legal framework is considered coherent with the Nature Directives, addressing the inconsistencies in the previous CFP that acted as a barrier for Member States to adopt conservation measures and restrict certain fishing practices, and incorporating some measures to mitigate the impact of fisheries and eliminate bycatch.

Coherence: Limited progress on regulating fisheries in marine Natura 2000 sites.

EU Added Value: Cooperation and information-sharing measures promoted through EU-wide networks, such as Fisheries Areas Network (FARNET), have contributed to improved marine governance and an increased knowledge base across the EU.

EU Added Value: The landing obligation, one of the few explicit additional marine components of the Strategy, has faced challenges in implementation including in coordination and comprehensiveness, which has limited the value produced. A number of data deficiencies remain.

Target 5:

Effectiveness: The legislative framework established by the IAS Regulation is an integral step forward to tackling invasive alien species. The establishment of the EASIN Network has assisted in facilitating access to data on reported and has encouraged shared approaches to tackling alien species.

Effectiveness: Data gaps on interregional flows and global trade in relation to IAS are present, which can to assigning a 'lower consequence' of risk in species assessments. The prevalence and impacts of this are currently unknown however, given the nascent nature of the Regulation and Union List.

Efficiency: The IAS Regulation has prompted additional expenditure by Member States, added to the information base and can be expected to increase preparedness and response to current and emerging IAS threats. Given the high cost-effectiveness of prevention and early intervention, this is likely to be highly cost-effective expenditure, although it is too early for hard evidence of impacts at this stage

Efficiency: Timing is too early to identify the cost-effectiveness of implementation through impacts

Relevance: Target 5 recognised IAS as a significant threat to biodiversity in the EU, and provided a broad framework for addressing the problem at EU level.

Relevance: Target 5 was widely seen as relevant by stakeholders.

Coherence: Strategy coherent with IAS Regulation and plant and animal health regimes. This increased focus on biodiversity threats and need for controls and management measures.

Coherence: No clear cases found but some stakeholders consider that regulatory action and funding are still too limited to meet the threat posed by invasive alien species and animal and plant diseases.

EU Added Value: The development of an EU-level framework for the management of IAS, and a platform and improved knowledge base for IAS priority and other species through the EASIN and other measures are considered and EU-added value.

EU Added Value: Continuing data gaps (such as on interregional flows and global trade on IAS) and a lack of a dedicated financial mechanism may limit action.

Target 6:

Effectiveness: International financial flows from the EU and its Member States to biodiversity related investments have been significant since the Strategy was published. EU initiatives such as BEST have increased the efficiency and access of funding for actions related to biodiversity and sustainable ecosystem management.

Effectiveness: Information gaps on (international) biodiversity funding limits the tracking of its effectiveness and efficiency.

Efficiency: A significant increase in expenditure has been mobilised within the EU for global biodiversity conservation

Efficiency: Little data exists to identify the cost-effectiveness of resources mobilised for international action

Relevance: Target 6 recognised the importance of EU action in addressing global biodiversity loss and included wide-ranging actions to achieve this. The Strategy was relevant in focusing on the main areas of action in which the EU can influence biodiversity internationally.

Relevance: Target 6 was criticised for its lack of specificity and impetus for action.

Coherence: The Strategy is coherent with international commitments (Aichi, SDGs, UNFCCC).

Coherence: There has been limited progress on eliminating harmful subsidies linked to policy incoherence, whilst the non-ratification of trade agreements due to environmental concerns highlights conflicts within various policy domains.

EU Added Value: The increased scale of financing for conservation and sustainable use of biodiversity from EU, Member State and private sources has grown

EU Added Value: Despite assessing biodiversity impacts through EU Free Trade Agreements, the dearth of detailed assessment of biodiversity impacts of trade remains an ongoing weakness of this clear area of EU added value potential

Horizontal measures:

Three 'horizontal measures' were provided across the Strategy targets.

Further strengthen the biodiversity knowledge base:

Strengthening the EU biodiversity knowledge base is a clear achievement of the Strategy, with significant progress across targets to fill key information gaps and further progress the knowledge base of biodiversity

Acknowledging these successes, key gaps in information remain across targets to be addressed in the subsequent Strategy to 2030

Build partnerships for biodiversity:

There is evidence of many examples of partnership-building activity across targets, with many actions focused on information-sharing and collaboration

Nevertheless, OPC results show no clear majority of respondents consider that the Strategy helped to ensure cooperation and learning among Member States (50% 'fully' or 'partially' and 50% 'poorly' or 'not at all') or between the EU and third countries (39% 'fully' or 'partially').

Mobilise financial resources to support biodiversity and ecosystem services:

Significant action has been made to integrate biodiversity elements into EU funding instruments, and notable successes can be identified such as the increase in funding for Target 6.

However, lack of funding is identified in literature and as a major impediment to implementation success across targets, and further supported by OPC results

The lack of binding targets and the absence of a dedicated financing instrument are identified as drivers for the lack of funding mobilisation.

1 Introduction

1.1 Purpose of the report

This report is the final report for the project “Support to the Evaluation of the EU Biodiversity Strategy to 2020” Specific Contract Number ENV.D.2/SER/2018/0039 of the European Commission DG Environment.

The study has been delivered by Trinomics B.V. together with Institute for European Environmental Policy (IEEP) and UNEP’s World Conservation Monitoring Centre (UNEP-WCMC), International Union of Conservation of Nature (IUCN), denkstatt and ENT.

Our findings are based on an extensive collection of evidence, which is detailed in the report. Our approach to the analysis of the evidence gathered is in accordance with the requirements of the European Commission’s Better Regulation guidelines. This report is a significant input into the European Commission’s evaluation of the Strategy, which may also take account of other information, and represents the European Commission’s view.

1.2 Scope of the report

This study has examined the results of the EU Biodiversity Strategy (hereafter ‘the Strategy’) to 2020, analysed its impact and progress made towards implementing specific actions and achieving its headline and operational targets, and examined the level of implementation in the EU and Member States.

Therefore, the scope of the study has focussed on:

- The significant achievements of the strategy and the success factors;
- Main causes of failure to achieve the targets;
- The responsibility of both Member States and the European Union to deliver on the targets;
- and
- The causes, drivers and trends of biodiversity loss in Europe under a business-as-usual scenario.

The study covered the geographic area of the EU, complemented by a selection of 10 representative Member States. In addition, the study evaluated EU action to avert global loss of biodiversity and ecosystem services as part of the evaluation of Target 6 of the Strategy. The timeframe covered by the evaluation corresponds to the lifetime of the BDS, from its launch in 2011 until its target date at the end of December 2020.

1.3 Structure of the report

This report is structured as follows:

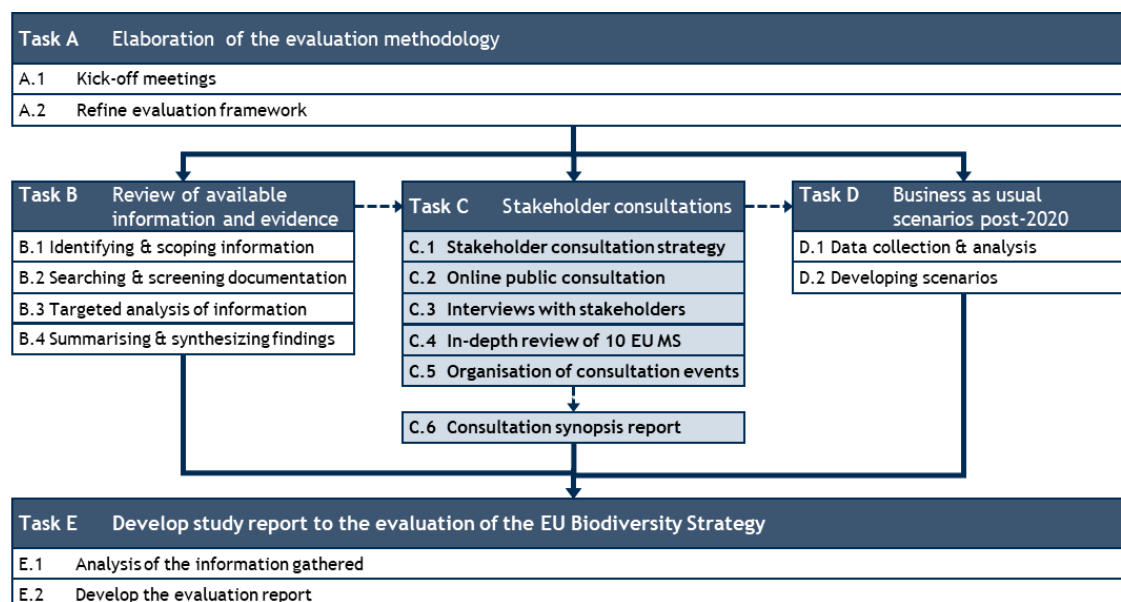
- Section 2 describes the methodological aspects of the study, including the baseline (“counterfactual”) scenario;
- Section 3 provides an introduction to the Strategy and the state of play of biodiversity in the EU;
- Section 4 presents our findings from the effectiveness analysis;

Section 5 presents our findings from the efficiency analysis;
Section 6 presents our findings from the relevance analysis;
Section 7 presents our findings from the coherence analysis;
Section 8 presents our findings from the EU added value analysis;
Section 9 presents our conclusions;
Appendix A presents a glossary of common abbreviations used in the report;
Appendix B presents the detailed evaluation methodology;
Appendix C presents the Member State reports;
Appendix D presents the summary report on the stakeholder consultations;
Appendix E presents supplementary evidence for the coherence analysis.

2 Methodology of the evaluation study

This section presents the methodology for this evaluation support study. An overview of the study's approach is given in Figure 2-1.

Figure 2-1 Overview of study's approach³



The evaluation framework above presents the methodology for the evaluation of the Strategy which is applied in Task B and C. The framework contains the intervention logic as well as the evaluation matrix, which lists the evaluation questions and the appropriate indicators.⁴

2.1 Methodological approach to evaluating the Strategy

The Biodiversity Strategy to 2020 contained a diverse mix of instruments and activities, ranging from specific actions to deliver by a proscribed date (such as Action 4a to deliver a new EU bird reporting system by 2012), to broader ambitions for outcomes governed by existing legislation and without direct funding measures (such as Action 1 to complete the establishment of the Natura 2000 Network and ensure good management). Despite this diversity, the feature that united all components of the Strategy was their contribution to halting the loss of biodiversity and ecosystem services in the EU by 2020, and to restore them as far as possible, while also helping to curb global biodiversity loss.

The Strategy itself does not have a specific budget allocation or instrument, although it contains measures aimed at increasing funding for biodiversity (such as Action 18 to mobilise additional resources for global biodiversity conservation).

To evaluate the Strategy then, we considered each Action type, ranging from specific (a clear action either implemented as described or not), information provision (such as delivering research and/or

³ Please note that Task D was subsequently moved to Phase II of this study - the Impact Assessment of the BDS to 2030. Furthermore, due to the COVID-19 pandemic, consultation events as part of Task C.5 were cancelled.

⁴ Better Regulation Guidelines

raising awareness), and policy direction (statements and intentions of strategic direction and focus, some with associated actions). Some exhibited combinations of these features. Actions were also considered for the following features:

- Pre-existing: did the subject of the action pre-date the Strategy? If so, the impact of the Strategy should be an improvement to implementation and operation
- End date: is there a clear deadline for delivery that can be verified or not?
- Ownership: which entity or legislation governs the subject of the action? Many actions relate to aspects of biodiversity management governed by existing legislation about which the Strategy action has no direct influence.

Specific actions could be easily evaluated for their delivery or otherwise, and their impact assessed based on evidence from literature and expert opinion. However, it was not the objective of this study to evaluate each individual component of the Strategy in separate detail - to undertake separate evaluations of each piece of legislation addressed by the Strategy. While components are individually considered, the aim was to evaluate the impact of the Strategy as a whole, while exploring its component parts.

The most challenging aspect of the evaluation is assessing the *impact* of the Strategy on aspects of biodiversity governed by other pre-existing legislation, such as the example provided above of completing the Natura 2000 Network and ensuring good management. While much evidence exists of progress in the Natura 2000 Network, evidence of attribution to the Strategy is sorely lacking. It is important to acknowledge that the aim of this evaluation is not to re-prosecute a separate evaluation of the legislation governing the topic: in this example, a separate evaluation of the Birds and Habitats legislation. However, when such examples occur, evidence is provided of progress toward the stated outcome, and where separate evidence can be identified from literature, data or first principles as to the attribution of the Strategy, this too is provided. Where this cannot be identified, expert opinion from consultation activities is reported to provide some information from those affected by or expert in the topic. This is far from conclusive, however, information from stakeholder consultation forms an important element of any evaluation and should not be ignored.

Our intervention logic is elaborated on below.

2.2 Intervention logic

The **intervention logic** presents the rationale behind a policy intervention in a structured way (see Figure 2-2). The starting point of the intervention logic is the “problem” that is being addressed by the intervention. Describing the problem(s) that the Strategy is designed to address, allows the assessment of **relevance**, to test the link between the problem and the objectives of the Strategy: Are the objectives of the Strategy still in line with the current status of the problem? The “objectives” of the Strategy are mostly clearly mentioned in the Strategy itself. Objectives are translated into “actions” which are taken by the Commission, member state authorities and others to implement the Strategy. The “actions” have consequences and lead to “outputs”, “outcomes” and “impacts”, which jointly form the expected results. These expected results are defined beforehand as *expectations* as to what the Strategy is supposed to lead to.

It is important to define all of these precisely as the **effectiveness** evaluation criterion addresses the relationship between the formulated objectives (Targets and Actions of the Strategy) and the results actually achieved. The evaluation of **efficiency** relates to the resources used to achieve the outputs required by the Strategy in comparison to the effects: are these sufficient and in balance? **Coherence** relates to the relationship between other EU (and Member States and international) policy and the Strategy: Are the objectives of the Strategy in line with the objectives of other EU policies? or do they contradict each other? Finally, the evaluation of **EU added value** ascertains the added value of the Strategy vis-à-vis Member State action: how do outcomes compare to likely changes resulting from the absence of the Strategy?

2.3 Evaluation questions

The evaluation questions are formulated based on the intervention logic, the Terms of Reference for this evaluation, the Better Regulation Guidelines and project team's recent experience in assessments of this kind. The final set of evaluation questions and the matrix can be found in Appendix B. Overall, there are 16 evaluation questions, but these are broken down into sub-questions. Taken together, they allow for a systematic and comprehensive evaluation.

2.4 Consultation Strategy

A consultation strategy was developed during the Inception Phase of the project, outlining the introduction and context of consultations, the objectives, stakeholder mapping, and consultation tools utilised (see section 2.1.4 below). This is summarised below.

Objectives

The objectives of the consultation were:

- To complement conclusions based on existing and already known data and literature review to the Evaluation, among other things, and to understand how stakeholders perceive the Strategy's implementation, to what extent its objectives have been met, what the challenges were and whether there have been trade-offs in the implementation;
- To gather further evidence to substantiate the analysis of relevance, effectiveness, efficiency, coherence and EU added value. Of particular relevance, the coherence and links with other European legislation were emphasized;
- To gather additional information, going beyond pure implementation information and helping to assess the functioning of the Strategy, and the benefits and costs that different stakeholders attach to them;
- Summaries of statements made by respondents to the OPC are included in bullet points throughout this document. The bullet lists bring together statements made in the consultations, but it should be noted that these lists don't necessarily reflect a majority opinion amongst the respondents. Their purpose is to illustrate the variety of responses received.

Stakeholders

Relevant stakeholders involved in the Evaluation process were:

- Member States and their public authorities at national and subnational levels responsible for the implementation of the Strategy and aligned national strategies/policies;

Socioeconomic actors, including umbrella organisations, networks, and sectors within the scope of the Strategy;

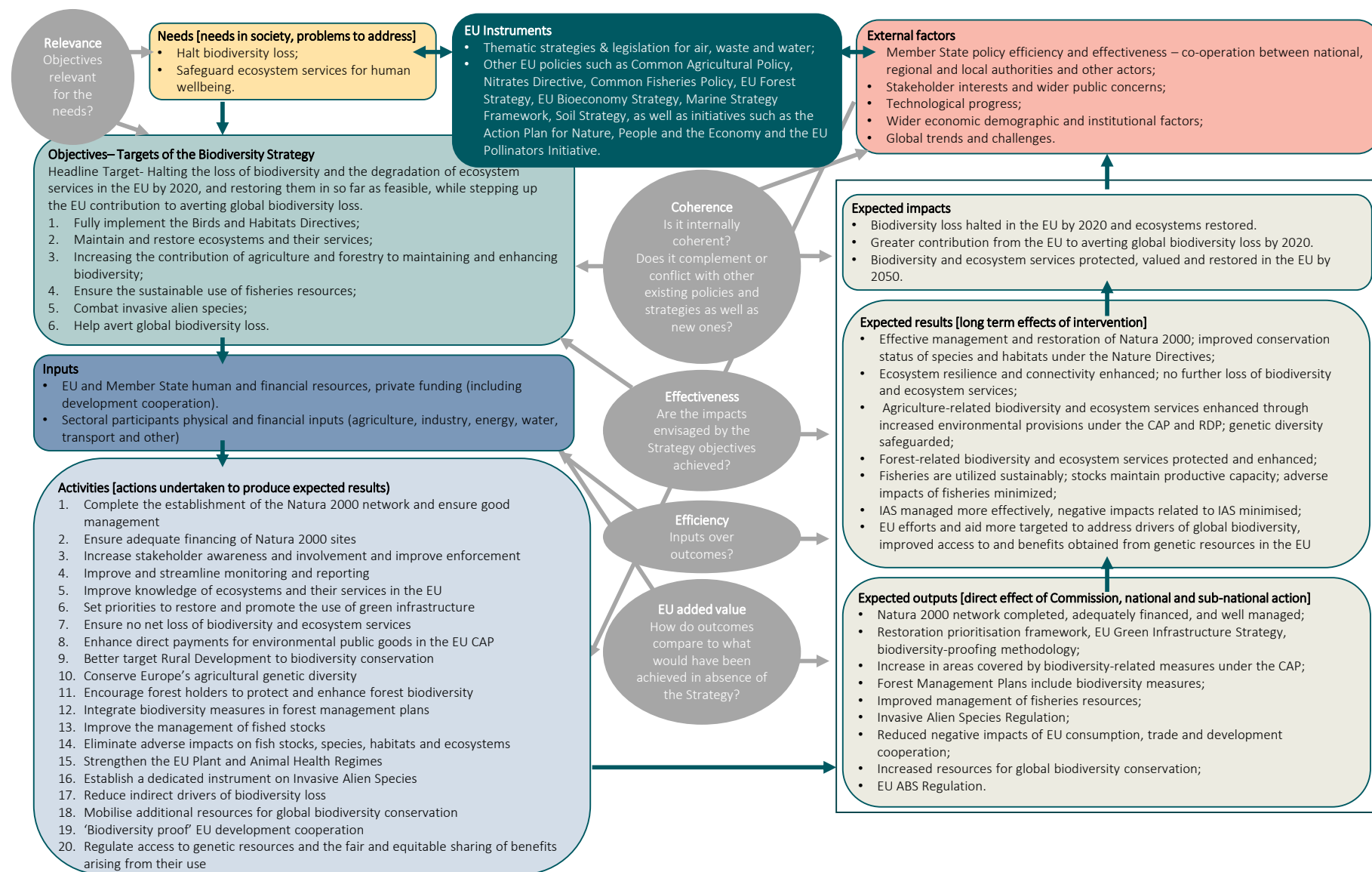
Non-Governmental Organisations (NGOs) and citizens' initiatives;

International organisations relevant to the Strategy, e.g. those providing funding, advice on health, technical or governance issues, local implementation aid;

Academia, research and innovation organisations/institutes; and,

Citizens.

Figure 2-2 Intervention logic



2.5 Evidence gathered

The findings from this report rely on facts and evidence gathered through four main avenues of data collection. The methods to gather this evidence were:

1. Literature review;
2. Online public consultation through an online questionnaire, using the Commission consultation's website;
3. Targeted interviews with EU level stakeholders;
4. Case studies of 10 Member States, which required conducting a literature review, survey and targeted interviews with relevant stakeholders.

Literature review

An extensive literature review was conducted. The first step was to identify and screen a range of sources of information, which were then categorised for a targeted analysis. Approximately 550 documents were reviewed, with the majority classified as MS biodiversity-related reporting (implementation reports, monitoring reviews, CBD reporting), European Commission policy documents, European Commission-funded project outputs, independent studies, statistical datasets, European Environment Agency reports, NGO documents and position papers. The large number of Member State government reports includes country reports to the CBD and through EU reporting processes (Prioritised Action Frameworks (PAFs), green infrastructure reports, Environmental Implementation Review, Water Framework Directive (WFD) and Marine Strategy Framework Directive (MSFD) reporting).

The literature review provided the background for the analysis, with findings build upon through consultations.

Online public consultation

The online Public Consultation (OPC) aimed to gather the opinions of interested citizens and organisations, in particular stakeholders that would be unlikely to be involved in the other, more specialist, targeted strands of the consultation activities.

The questionnaire was drafted as part of a wider survey covering three biodiversity initiatives: this Evaluation, the implementation review of the EU Regulation on Invasive Alien Species (also of relevance to the Target 5 analysis of this study); and, an Impact Assessment of future binding EU restoration targets.

The questionnaire was made available in all EU languages through the EU Survey tool⁵. The OPC was live on the EU Survey portal between 11th January 2021 and April 4th 2021. A total of 111,842 respondents were received, the majority of which identified as campaigns (104,332). The results are analysed in Appendix D.

Targeted consultations

Targeted stakeholder consultations took place at both EU-level and as part of Member State Case Studies (Task C.4). The key objectives of these targeted consultations were to 1) clarify any outstanding issues arising from the in-depth literature review; 2) obtain stakeholder views as well as additional

⁵ <https://ec.europa.eu/eusurvey/home/welcome>

information and possible sources of evidence on issues for which data gaps were found; and 3) identify any additional issues that may not have been reported on.

At EU-level, a total of 24 interviews were conducted across a range of stakeholder types. For the case studies, a total of 37 interviews were conducted across the 10 Member States. In addition, a total of 65 responses were received to a survey in the national language. An overview of these consultations is provided in the Consultation Report provided in Appendix D.

2.6 Baseline (“counterfactual”) for the evaluation

The counterfactual⁶ scenario provides a benchmark to evaluate the role of the Strategy in addressing the underlying needs. In other words, it is used to analyse the extent to which positive and negative changes have been observed that are likely to stem from the implementation of the Strategy. However, establishing a link between a policy instrument and an observed effect (e.g. on the extent and quality of biodiversity) is not always straightforward.

The expectations of how the state of biodiversity, and pressures on it, would develop in the absence of an Strategy, were articulated in the Impact Assessment of the EU Biodiversity Strategy (SEC(2011) 540 final, hereafter referred to as the Impact Assessment). The Impact Assessment concluded that under a ‘business as usual’ scenario, overexploitation, pollution, habitat loss, climate change and invasion by alien species would likely continue or worsen. The Impact Assessment predicted that mean species abundance would continue to decline in Europe, from approximately 40% in 2010 to approximately 37% in 2050. With the existing measures and policies in place, it was considered that anthropogenic pressures would continue or worsen and would result in further degradation of EU ecosystems.

The business as usual (BAU) scenario included in the Impact Assessment made a qualitative projection of the consequences of existing policy and legislation. This projection was revisited for the purposes of the evaluation study, in light of new information available, in order to establish the counterfactual for this evaluation. The projections made in the Impact Assessment are amended (e.g. either reduced or augmented) where necessary. The Impact Assessment reviewed pre-existing EU policy areas against the 4 aspects of the headline target of the Strategy: (1) halting biodiversity loss, (2) halting degradation of ecosystem services, (3) restoring biodiversity and ecosystem services, (3) counteracting increased loss of biodiversity at the global level. It also reviewed these policies against their contribution to reducing the following pressures on biodiversity: over-exploitation, fragmentation, climate change, invasive species and pollution. This review structure is continued here but findings are reported in connection to the six Biodiversity Strategy targets.

2.6.1 Contribution of pre-existing policies and connections to the Strategy

Biodiversity policies

The Habitats and Birds Directives were core piece of EU biodiversity policy. They were the basis for the establishment of the Natura 2000 network and other measures including the protection of species outside the network. In a BAU scenario, without adequate financial investment, further integration of species and habitat protection into land and water use policies, development of management plans,

⁶ We use the term ‘counterfactual’ in this report to avoid confusion with the EU Biodiversity Baseline: <https://www.eea.europa.eu/publications/eu-2010-biodiversity-baseline-revision>

sharing of good practices, increased awareness and improved enforcement, the implementation of the Directives would have been slow and ineffective.

The Nature Directives were supported in attempting to halt the loss of biodiversity by the EU Biodiversity Action Plan. The Action Plan aimed to integrated biodiversity concerns into other policy sectors and directly addressed key pressures on biodiversity. The LIFE and LIFE+ Programmes financed projects protecting and restoring species and habitats covered by the Nature Directives as well as those delivering biodiversity benefits and protecting biodiversity beyond Natura 2000 areas. This second element was important because the designation of protected areas alone under the Habitats Directive was considered likely to be insufficient to curb biodiversity loss. With efforts tending to focus on emblematic species and habitats, diversity in a wider sense was expected to suffer, as were less charismatic species and habitats. In addition, although the Nature Directives had the capacity to protect species and habitats, they may have been less effective at generating new proactive measures. Given their focus on contributing to reducing some of the main pressures on biodiversity some improvement status of species and habitats may then have occurred as a result of the Nature Directives, Biodiversity Action Plan and LIFE programmes. However, without more adequate financing, explicit consideration of ecosystem services and targets for restoration, continued habitat degradation was expected. And with poor management of habitat, further declines in biodiversity were anticipated, making it unlikely that the EU would achieve the 2020 headline target or the global Aichi biodiversity targets. The conservation status of species and habitats protected under EU nature legislation was expected to remain similar to that of the 2009 health check with only 17% of the assessments completed showing a good conservation status.

Connections to the Strategy

Targets 1 and 2 of the Biodiversity Strategy set out to address some of the previous shortcomings in biodiversity policies. Specifically, Target 1 aimed to complete the establishment of the Natura 2000 Network and ensure its good management, a key aspect being to ensure adequate financing for the sites. It also aimed to increase communication of good practice and improving enforcement of the directives. Target 2 included actions to improve knowledge of ecosystems and their services, set priorities for ecosystem restoration and ensure no net loss of biodiversity.

Agriculture and forestry policies

The Common Agricultural Policy (CAP), EU Forestry Strategy, EU Forest Action Plan for 2007 and 2011 and Forest Focus Regulation Framework Directive on the Sustainable Use of Pesticides were major EU policies in this sector that pre-existed the Biodiversity Strategy and that have implications for biodiversity outcomes. Some agricultural and forestry measures in the CAP had the potential to contribute significantly to biodiversity (e.g. Natura 2000 payments, High Nature Value farming,). European Forestry policies incorporated measures to protect biodiversity in forests, for example sustainable forest management plans.

Unsustainable agricultural practices such as intensive, high-input farming can be harmful to biodiversity. Monoculture plantations and use of invasive species have negative impacts on forest biodiversity.

Land abandonment and intensive agriculture have important impacts on biodiversity. Both on land through habitat conversion, pollution of freshwater and the effects of chemicals such as pesticides

removing invertebrates and simplifying the floral diversity with 'weed' removal. In the marine environment impacts are felt through pollution (nutrient, chemical and soil run off). The CAP had been reformed on several occasions prior to the Strategy. Decoupled direct payment were introduced, aiming to remove incentives to intensify agriculture and cross-compliance was introduced to ensure that farmers in receipt of CAP payments met minimum environmental conditions. However, As reported in the Impact Assessment, the impacts of decoupling on biodiversity and nature conservation had been small to negative (Brady, 2010⁷). Agri-environment measures, such as those introduced under CAP reforms, were shown to have positive impacts on biodiversity overall but specific schemes were not always cost-effective and studies of the impacts of such measures reached mixed conclusions (e.g. Kleijn et al., 2006⁸). As a result, the Impact Assessment BAU scenarios concluded that without considerable reform of the Common Agricultural Policy, it was expected that agriculture in the EU would continue to be one of the most significant drivers of habitat loss and degradation. Although both forestry and agricultural practices have the potential to restore ecosystems, trade-offs exist when trying to support production of food or timber whilst also trying to enhance biodiversity. Insufficient policy change in the absence of the Strategy was predicted to lead to further biodiversity loss on farmland with serious implications for the EU meeting the 2020 biodiversity goals.

Soil communities are an important component of biodiversity, which often receive less attention than that of aboveground ecosystems. Under a business as usual scenario, soil biodiversity would continue to degrade, with repercussions for halting and reversing biodiversity loss in the EU.

Connections to the Strategy

These policies link most closely to Target 3 of the Biodiversity Strategy, which aimed to increase the contribution of agricultural and forestry to maintaining and enhancing biodiversity. It aimed to maximise agricultural areas covered by biodiversity-related measures under the CAP, and to have in place sustainable forest management plans for all forests that are publicly owned or above a certain size that receive EU Rural Development Policy funding. Target 6 of the Biodiversity strategy aimed to address the biodiversity impact of European demands on global biodiversity loss.

Air policies

The Air Quality Framework Directive, The Clean Air For Europe programme (CAFÉ), National Emissions Ceilings Directive, Integrated Pollution Prevention and Control (IPPC), Large Combustion Plants Directive, Waste Incineration Directive and Thematic Strategy on Air Pollution would have collectively acted to reduce the pressure of pollution from a wide range of sources on biodiversity. Overall, the improvement in air quality would have been generally beneficial to the natural environment. Reduction of localised nitrogen deposition on land and sea would support low nutrient habitats, such as inland wetlands.

Connections to the Strategy:

Target 2 of the Strategy, which aims to maintain and restore ecosystems and their services by, amongst other things, restoring at least 15% of degraded habitats, would have been aided by the reduction in pressures resulting from Air Quality related policies and strategies.

⁷ Brady, M. (2010) Impact of CAP reform on the environment: some regional results. Paper presented to OECD Workshop on the Disaggregated Impacts of CAP Reform 1011 March 2010, Paris, France. Accessed via: http://www.agrifood.se/Files/AgriFood_WP20103.pdf

⁸ Kleijn et al., (2006) Mixed biodiversity benefits of agri-environment schemes in five European countries. Ecology Letters Vol. 9 Issue 3. 243-254

Consumption and Production policies

A broad set of policies and plans pre-existed the Biodiversity Strategy, including: the Integrated Product Policy (IPP), EU Eco-Management and Audit Scheme (EMAS), Ecolabel, Eco-innovation Action Plan, Green Public Procurement Policy, Economic Reform Programme (ERP), Sustainable Consumption and Production and Sustainable Industrial Policy (SCP/SIP) Action Plan, Environmental Liability Directive, and EU Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan. These were important in aiming to reduce the impacts of consumption and production on biodiversity. Eco-labelling and certification would have reduced ecological footprints in terrestrial, freshwater and marine environments. The Environmental Liability Directive established a framework for preventing and remedying environmental damage, defined as damage to protected species and natural habitats, damage to water and damage to soil. Overall, under the BAU scenario, these policies would have played an important, though often indirect, role in attempting to alter consumption and production to benefit biodiversity. However, there remained scope for greater coordination to support these policies in making a tangible difference.

Connections to the Strategy

Several elements of the Biodiversity Strategy aimed to address consumption and production impacts on biodiversity. Target 2 included actions to improve knowledge of ecosystems and their services, and to ensure no net loss of ecosystems and their services. Target 3 targeted more sustainable agricultural and forestry production, whilst Target 4 aimed to ensure that fisheries resources are used sustainably. Lastly, Target 6 included actions to reduce indirect drivers of biodiversity loss.

Climate and Energy policies

The Impact Assessment stated that achieving the '2 degrees' climate target is essential to avert global biodiversity loss. The EU had already developed and was implementing a suite of climate change policies, including: the EU 20/20/20 climate change target White paper on adaptation to climate change (COM (2009) 0147), Reducing Emissions from Deforestation and Forest Degradation (REDD) initiative, European Climate Change Programme (ECCP), and European Emission Trading Scheme (ETS). It was unclear in 2010 whether these policies would be sufficient to enable the EU to meet its climate targets for 2020 and beyond. To the extent that they contributed to mitigating climate change, these policies could have been expected to slow climate impacts on biodiversity and ecosystem services. The White paper on adaptation to climate change required the impact of climate change to be factored into management of Natura 2000 sites, which would have further protected species and habitats in these sites from climate impacts.

However, whilst energy system measures, such as the EU Biomass Action Plan and the Directive on the use of energy from renewable sources, would have helped EU progress towards climate targets, they also had the potential to negatively impact biodiversity. Sustainability criteria for biofuels production under the Renewable Energy Directive aimed to reduce this risk by linking financial support to restrictions on where raw materials for biofuel production could be grown. Nonetheless, biofuel production risked the conversion of natural/semi-natural land to plantations, where biofuel plantations have lower biodiversity. The additional demand for land could have driven a shift towards intensification of agriculture on remaining land, with negative impacts for biodiversity on land and in aquatic environments.

Overall, under the BAU it seems likely that climate impacts would have continued to impact biodiversity to 2020 because of rising global emissions and the lag between any mitigation and climate responses. Additional conservation pressures from mitigation activities, including biofuels, renewable energy development, such as wind energy installations, would have caused additional pressure on biodiversity.

Connections to the Strategy

Target 2 aimed to encourage a better use of nature based approaches to tackle climate change, whilst Target 3 contained actions to avoid escalating impacts of agriculture on biodiversity and to promote sustainable forestry by integrating biodiversity management in forest management plans. Climate change is an important driver of invasive species dynamics as it changes the environment and species track these changes across space. Therefore, Target 5 to Combat Invasive Alien Species was an important response to climate change impacts.

Fisheries and Marine policies

Prior to the Biodiversity Strategy, overfishing remained a significant issue despite the 2002 reform of the Common Fisheries Policy (CFP). EU stocks were still fished beyond maximum sustainable yield in 88% of cases, and the average size of fish continued to decline. Without reform to the CFP, the Impact Assessment concluded that further depletion of fish stocks would be expected, leading to setbacks for the attainment of good ecological status for EU marine waters by 2020.

The Marine Strategy Framework Directive (MSFD) aimed to conserve the marine environment and attain 'Good Environmental Status'. It supported protected areas as part of a strategy to achieve conservation goals, mentioning both the Birds and Habitats directives as means to contribute to the achievement of good environmental status under this directive. It allowed for designation of protected areas under the MSFD. The MSFD also supported restoration of marine ecosystems with the aim of achieving good environmental status, as set out in the directive. However, restoration had been challenging to understand and the target of good environmental status was difficult to quantify. Under a BAU scenario then restoration would not have been as effectively as it might have been. Nonetheless, the MSFD has helped drive increases in scientific understanding of the marine environment which is necessary to support restoration.

The Communication on the sustainable development of European aquaculture promoted the sustainable growth of aquaculture in the EU through the use of environmentally-friendly production methods. The Impact Assessment assessment cited a study suggesting that the EU regulatory response to managing the environmental impacts of aquaculture was adequate.

Connections to the Strategy

Action 14 in the Biodiversity strategy (14b) guided member states to support implementation of the MSFD, listing a variety of ways of doing so. However, as described above there were challenges to effective implementation of the MSFD. Target 4 of the Biodiversity Strategy aimed for sustainable use of fish resources and suggested all fisheries achieve maximum sustainable yield (MSY), that the CFP management plans were developed and implemented, and member states stepped up work to collect data to support MSY. Target 2 of the Biodiversity Strategy also aimed to restore at least 15% of degraded ecosystems, providing additional incentive beyond the MSFD.

The CFP had a role in supporting good governance of fisheries outside the EU by EU boats. The Biodiversity Strategy identified in Target 4, Action 13a, that EU fishing fleets should maintain and restore fish stocks to MSY in all areas that the fleet operate including areas regulated by Regional Fisheries Monitoring Organisations and waters of third countries.

Policies regarding external relations

A broad set of policies existed prior to the Biodiversity Strategy that addressed the EU's international relations and trade, including aspects relating to biodiversity change. The Thematic Programme for Environment and Natural Resources (ENRTP), European Neighbourhood and Partnership Instrument (ENPI), Development Cooperation and Economic Cooperation Instrument (DCECI) and European Development Fund (EDF) made contributions to biodiversity initiatives, partnerships and global multilateral processes. It is likely that under a BAU scenario this funding, including to the Convention on Biological Diversity, would have continued. Global Multilateral Environmental Agreements, funds and trade agreements have been important to support action to support biodiversity globally. The EU have been key in supporting global biodiversity by supporting best practice, providing funding and demonstrate leadership. It is likely that under BAU this role would also have continued.

Connections to the Strategy

Target 6 of the biodiversity strategy aimed to reduce impact of trade agreements on biodiversity in other countries via Trade Sustainability Impact Assessments. A chapter on sustainable development is suggested in all trade agreements. It also includes an action to mobilise additional resources for global biodiversity conservation and an action to screen EU development cooperation to minimise negative biodiversity impacts.

Plant and Animal Health policies

The Plant Health Directive and Animal Health Strategy were both under review raising the possibility of their scope could be expanded to include pest and diseases of wild species. For the plant health regime, the possibility of including all invasive alien plants causing damage to the wider environment was also being considered. However control measures were also considered to have the potential to cause damage to habitats for example through tree felling to prevent spread of pinewood nematode, or the spreading of pesticides. Under a BAU scenario these policies could have contributed to combatting invasive alien species.

Connections to the Strategy

The Biodiversity Strategy included an action under Target 5 to integrate biodiversity concerns into the Plant and Animal Health Regimes by 2012.

Regional development

EU Regional Policy, such as the European Regional Development Fund and European Social Fund, contributed to investments directly benefiting biodiversity, environmental quality improvements, investments in Green Infrastructure and rehabilitation of contaminated land. However, stimulating competition for land, natural land clearing for infrastructure and fragmentation of habitats through development could have serious negative biodiversity consequences. Investment in economic diversification, small businesses and innovation could have benefited biodiversity conservation if it was specifically considered within the process. However, controls on where land use change was to occur

and how to minimise and mitigate harm on biodiversity needed to be built into the decision-making process. Under a BAU scenario development risked negative biodiversity impacts.

Connections to the Strategy

The Biodiversity Strategy included in target 2 an action to develop a methodology for assessing the impact of EU funded plans, projects and programmes on biodiversity by 2014.

Environmental Impact Assessments/ Strategic Impact Assessments

Negative biodiversity impacts result from plans, projects and ultimately the direct drivers associated with the resulting developments. The Environmental Impact Assessment (EIA) Directive had the potential to support protection of species and protected areas and to require mitigation measures if impacts were unavoidable. Overall, the legislation had the aim to avoid net loss of biodiversity, for example, the EIA directive specifically aimed to maintain the capacity of the ecosystem as a "basic resource for life". Whilst the original EIA directive included coastal zones, the marine environment was only added to this in 2014. The period from 2010 to 2014 would have likely been covered by the Directive since it applied to soil, water, air, climate and the landscape, as well as human beings, fauna and flora. It is likely that under the BAU, EIAs and SIAs would have continued.

Connections to the Strategy

The Biodiversity Strategy Target 6 aimed to systematically screen development cooperating action to minimise negative impacts on biodiversity, undertake SEA and/or EIAs for actions likely to have significant negative effects on biodiversity.

Water policies

The collection of policies related to European freshwater included the Water Framework, Flood Risk Management, Groundwater, Urban Wastewater Treatment, Nitrates, and Environmental Quality Standards Directives. These policies had the potential to improve the ecological status of water and soils. The Water Framework Directive (WFD) had a focus on water quality and aimed to protect aquatic ecosystems. It also included the consideration of "ecological status" which included consideration of biological aspects of the aquatic ecosystems, including those in the marine environment, and aimed to ensure sufficient groundwater for terrestrial ecosystem function. There was potential for nature-based solutions to some river basin management, or flood risk management, which would also have had biodiversity benefits. This joined up approach was however unlikely in the absence of a coordinating strategy that identified links between water quality, flood management and biodiversity.

The Impact Assessment stated that the WFD had a key role to play in biodiversity protection and ecosystem restoration. It suggested that if adequately implemented, a significant amount of restoration of water related ecosystems would likely have taken place. However, the Impact Assessment made no assessment of whether the WFD would be implemented adequately. The deadline for achieving good status for water bodies throughout the EU was 2015. Given the slow progress made against this target by 2015, even including the effects of the Biodiversity Strategy, a reasonable BAU assumption is that the WFD would have been inadequately implemented.

Connections to the Strategy

The Target 1 of the Biodiversity Strategy included integration of water use policies to support protected areas and therefore added an additional layer of cross policy integration to the WFD. The Biodiversity

Strategy highlighted the role of ecosystem services, which can be particularly valuable when managing issues around water, such as flooding. Target 2 of the Biodiversity Strategy highlighted the role of green infrastructure in protecting against floods, a link which was not specifically highlighted in the Flood Risk Management Directive. In addition, Target 3 specifically linked the EU CAP with the WFD highlighting the potential for cross-compliance.

2.6.2 Summary of BAU

Overall, the Impact Assessment suggested that without significant policy reforms, changes to legislation and effective implementation of the strategy the EU would not have attained its 2020 biodiversity targets. In the absence of the strategy, continued ecosystem degradation, through land-use change and invasive alien species, amongst others, were expected to negatively impact species and habitats across the majority of EU Member States. The review carried out here supported this overall conclusion.

3 Introduction to the EU Biodiversity Strategy to 2020

3.1 The problem

Biodiversity is used to describe the variety and abundance of animal and plant life on earth⁹. It is intrinsically related to the functioning of ecosystems and the delivery of ecosystem services, such as the provision of food, clean water and air, materials, and enhancement of physical and mental health, underpinning our economy and well-being. The opportunity cost of not reaching the 2020 EU biodiversity headline target of halting the loss of biodiversity and ecosystem services by 2020 has been estimated at EUR 50 billion per year¹⁰. In addition to undermining these economic benefits, loss of biodiversity means that ecosystems and societies that rely upon them are more fragile and less resilient in the face of climate change.

In 2010, up to a quarter of assessed animal species were threatened in Europe and respectively 62% and 52% of assessments of habitats and species protected by the EU Habitats Directive showed an unfavourable conservation status in the 2001 to 2006 period, according to the European Environment Agency (EEA)¹¹. The 2015 EEA State of Nature report showed that over the 2007-2012 reporting period 77% of habitats and 60% of protected species assessments showed an unfavourable status. Although this indicated a slight improvement in the share of EU-wide protected habitats and species with a favourable assessment, it was also partly due to changes in assessment methods or better knowledge, and a significant share of previously unfavourable assessments had deteriorated further (30% for habitats and 22% for species). The abundance of common species has also declined significantly; bird abundance monitoring indicates a loss of 33% of common farmland bird numbers between 1990 and 2017 and the index of grassland butterflies declined by 39% below its 1990 value by 2017¹². Threats and pressures on biodiversity in the EU are numerous and often cumulative. The most frequently reported pressures on EU-wide protected habitats and species stem from agricultural activities (both intensification and abandonment), urbanisation, the modification of natural conditions (mostly to hydrology), and exploitation (affecting birds)¹³. In the marine and coastal realm, the main pressures include fisheries, extractive industries, transport, waste, invasive alien species, and sports, tourism and leisure activities.

The EU has a responsibility for halting the loss of biodiversity in the EU overseas entities, which represent a unique and critical part of Europe's natural heritage, and globally. Moreover, the EU's responsibility and interest in halting the loss of global biodiversity stems from the fact that Europe has

⁹ The definition of "Biological diversity" according to the Convention on Biological Diversity exactly reads: "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems". <https://www.cbd.int/convention/articles/default.shtml?a=cbd-02>
<https://www.cbd.int/convention/articles/default.shtml?a=cbd-02>

¹⁰ COWI, Ecorys and Cambridge Econometrics (2011) The costs of not implementing the environmental acquis. Final report ENV.G.1/FRA/2006/0073, European Commission Directorate for Environment DG ENV, Luxembourg.

¹¹ EEA (2015). EU 2010 biodiversity baseline – adapted to the MAES typology. EEA Technical Report, No 9/2015

¹² EEA (2020) SEBI 001: Abundance and distribution of selected European species. EEA Indicator Assessment 22/4/2020, European Environment Agency, <https://www.eea.europa.eu/data-and-maps/indicators/abundance-and-distribution-of-selected-species-8/assessment-1>.

¹³ EEA (2020) State of Nature in the EU: Results from reporting under the nature directives 2013-2018. EEA Report No 10/2020, European Environment Agency, Copenhagen.

a high ecological footprint and relies heavily on the import of resources and goods from all over the world¹⁴.

3.2 The policy response

3.2.1 Global biodiversity policy under the UN Convention on Biological Diversity

The Convention on Biological Diversity (CBD) came into force in 1993 with the overarching objectives of the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of its benefits. Following the failure to achieve the global goal of halting the loss of biodiversity by 2010, the tenth Conference of the Parties to the CBD (CBD COP 10) adopted the Strategic Plan for Biodiversity 2011-2020 in October 2010, with a shared vision, mission, five Strategic Goals and, organised under these goals, twenty Aichi Targets for Biodiversity. By adopting the Strategy, the European Union complied with its obligation under Article 6 of the Convention.

3.2.2 European biodiversity policy and the EU Biodiversity Strategy to 2020

The Strategy is the EU's response to the CBD Strategic Plan and Aichi Targets to 2020, setting the headline target to *halt the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU's contribution to averting global biodiversity loss*. The headline target was endorsed by the EU Member States in March 2010¹⁵.

Under the headline target the Strategy includes six operational targets:

Target 1: fully implement the Birds and Habitats Directives.

To halt the deterioration in the status of all species and habitats covered by EU nature legislation and achieve a significant and measurable improvement in their status so that, by 2020, compared to current assessments: (i) 100% more habitat assessments and 50% more species assessments under the Habitats Directive show an improved conservation status; and (ii) 50% more species assessments under the Birds Directive show a secure or improved status.

Target 2: maintain and restore ecosystems and their services.

By 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15 % of degraded ecosystems.

Target 3: increase the contribution of agriculture and forestry to maintaining and enhancing biodiversity.

- a. Agriculture: By 2020, maximise areas under agriculture across grasslands, arable land and permanent crops that are covered by biodiversity-related measures under the CAP so as to ensure the conservation of biodiversity and to bring about a measurable improvement(*) in the conservation status of species and habitats that depend on or are affected by agriculture and in the provision of ecosystem services as compared to the EU2010 Baseline, thus contributing to enhance sustainable management;

¹⁴ See https://eur-lex.europa.eu/resource.html?uri=cellar:5254559f-68eb-11e5-9317-01aa75ed71a1.0001.02/DOC_3&format=PDF.

¹⁵ Council of the European Union (2010) Biodiversity Post-2010 EU and global vision and targets and international ABS regime. Information note from General Secretariat to delegations, Council Conclusion 7536/10, Council of the European Union, Brussels.

- b. Forests: By 2020, Forest Management Plans or equivalent instruments, in line with Sustainable Forest Management (SFM), are in place for all forests that are publicly owned and for forest holdings above a certain size** (to be defined by the Member States or regions and communicated in their Rural Development Programmes) that receive funding under the EU Rural Development Policy so as to bring about a measurable improvement(*) in the conservation status of species and habitats that depend on or are affected by forestry and in the provision of related ecosystem services as compared to the EU 2010 Baseline.
- (*) For both targets, improvement is to be measured against the quantified enhancement targets for the conservation status of species and habitats of EU interest in Target 1 and the restoration of degraded ecosystems under Target 2.
- (**) For smaller forest holdings, Member States may provide additional incentives to encourage the adoption of Management Plans or equivalent instruments that are in line with SFM.

Target 4: ensure the sustainable use of fisheries resources.

Achieve Maximum Sustainable Yield (MSY) by 2015. Achieve a population age and size distribution indicative of a healthy stock, through fisheries management with no significant adverse impacts on other stocks, species and ecosystems, in support of achieving Good Environmental Status by 2020, as required under the Marine Strategy Framework Directive.

Target 5: combat invasive alien species.

By 2020, Invasive Alien Species (IAS) and their pathways are identified and prioritised, priority species are controlled or eradicated, and pathways are managed to prevent the introduction and establishment of new IAS.

Target 6: help avert global biodiversity loss.

By 2020, the EU has stepped up its contribution to averting global biodiversity loss.

The six operational targets are supported by **20 actions**. Next to the 20 actions under the thematic headline targets, the Strategy includes **three horizontal measures** to 1) further strengthen the EU biodiversity knowledge base; 2) build partnerships for biodiversity (including with the EU Business and Biodiversity Platform and civil society) and 3) mobilise financial resources to support biodiversity and ecosystem services.

The Strategy is an integral part of the EU's 7th Environmental Action Programme (7th EAP) which aimed, as a first of its nine key objectives, 'to protect, conserve and enhance the Union's natural capital'¹⁶. Unlike the Strategy, the EU EAPs have a strong legal basis in the Treaty on the European Union (TEU) and the Treaty on the Functioning of the European Union (TFEU). Under TFEU Article 192 (3) the European Parliament and the Council are committed to develop general action programmes setting out (environmental) priority objectives to be attained¹⁷. Integration of the 7th EAP and EU Biodiversity Strategy for this reason is critical from a legal perspective. Similarly, the Strategy is part of the EU's approach to sustainable development, another fundamental objective in the EU Treaties. This

16 Decision No 1386/2013/EU of the European Parliament and of the Council of 20 November 2013 on a General Union Environment Action Programme to 2020 'Living well, within the limits of our planet', <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013D1386>

17 Consolidated version of the Treaty on the Functioning of the European Union, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012E%2FTXT>

includes the EU's approach to the implementation of the SDGs and is articulated in the new European consensus on development which emphasizes that 'The EU and its Member States will support the conservation and sustainable management and use of natural resources, and the conservation and sustainable use of biodiversity and ecosystems, including forests, oceans, coastal areas, river basins and other ecosystems, for the provision of ecosystem services.'¹⁸

Mid-term review of the EU Strategy and remaining challenges

Following the submission of the EU's fifth national report to CBD in 2014, the EU conducted a mid-term review of its biodiversity strategy in 2015. To minimize the reporting burden of EU Member States, the European Commission extracted relevant information from the fifth national reports to the CBD of EU Member States published in 2014, to report on progress to the EU 2020 biodiversity strategy. The results of the mid-term review showed that greater effort was still required by Member States to deliver on their commitments. Despite progress in some areas, the review revealed that at the level of implementation at the time, biodiversity loss and ecosystem degradation were expected to continue. The results of the mid-term review were confirmed by the 2015 European environment – state and outlook report and the 2018 regional assessment for Europe and Central Asia of the Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES). Box 3-1 provides a summary of the main conclusions on progress towards the six headline targets.

Box 3-1 Summary of key conclusions on progress from the 2015 mid-term review of the EU Biodiversity Strategy

Target 1 - There was only a slight increase in the number of species and habitats in favourable conservation status; many remaining in unfavourable status and some continuing to decline; challenges are to complete the Natura 2000 marine network, ensure effective management of Natura 2000 sites and secure necessary finance for management.

Target 2 - There was some progress in policy and knowledge, and some restoration actions, but this was insufficient to halt the degradation of ecosystems and their services; plans for restoration and green infrastructure need to be developed and more needs to be done to halt the loss of biodiversity outside the Natura 2000 network. Natural capital continues to be invisible in national accounting and reporting.

Target 3 - Farmland species and habitats continue to decline and more needs to be done to use the EU's Common Agricultural Policy (CAP) to support biodiversity; the conservation status of forest habitats and species covered by EU nature legislation was not improving and knowledge of the status of forest habitats outside Natura 2000 is limited. Forest management plans were greatly under-used.

Target 4 - Much progress was made in setting the EU framework for sustainable fisheries, and for achieving good environmental status under the EU's Marine Strategy Framework Directive (MSFD), but implementation was insufficient; marine species and ecosystems face multiple pressures and continue to decline across Europe's seas.

Target 5 - IAS remain a fast-growing threat to biodiversity; progress was made in putting the policy framework in place. Implementation needs to speed up.

Target 6 - The EU increased resources for global biodiversity and took initial steps to address indirect drivers of global biodiversity loss. However, progress was insufficient in reducing the impacts of EU consumption patterns on global biodiversity.

With regard to the horizontal measures, the mid-term review concluded that biodiversity aspects had been integrated to various degrees into. European structural and investment funds, notably the common agricultural policy, cohesion policy funds and the European Maritime and Fisheries Fund, but a

¹⁸ European Union (2017) The new European Consensus on Development 'Our world, our dignity, our future', https://ec.europa.eu/europeaid/sites/devco/files/european-consensus-on-development-final-20170626_en.pdf

robust analysis would only be possible once all rural development and operational programmes would be adopted. Progress had been made in methods to track and biodiversity-proof the EU budget, and in enhancing and better coordinating resource mobilisation from EU external funding instruments through the 'Biodiversity for Life' flagship initiative. In terms of partnerships, the mid-term review emphasized the re-launch of the EU Business and Biodiversity Platform, the Biodiversity and Ecosystem Services in Territories of European Overseas (BEST) and its support to the initiative on The Economics of Ecosystems and Biodiversity (TEEB). However, at the time of the mid-term review it was still too early to assess the value of many reported initiatives.

4 Analysis of effectiveness

4.1 Introduction

The aim of the effectiveness analysis is to verify whether the intended objectives have been met and whether any unintended effects have occurred. In a simplified way, the objectives of the Biodiversity Strategy to 2020 are to halt the loss of biodiversity and ecosystem services in the EU and help stop global biodiversity loss by 2020, by:

- protecting species and habitats;
- maintaining and restoring ecosystems;
- achieving more sustainable agriculture and forestry;
- making fishing more sustainable and seas healthier;
- combating invasive alien species; and
- helping stop the loss of global biodiversity.

4.2 Analysis of the evaluation questions

4.2.1 EQ 1 (EQ 1.1-1.3) *To what extent has the Strategy worked as expected?*

This question explored whether the EU and the Member States have implemented the actions envisaged in the Strategy, and whether this resulted in the achievement of the headline biodiversity target and the six targets of the Strategy by 2020. This required an analysis of:

- Evidence of the EU's and MS progress towards the six operational targets and the headline target;
- Evidence of the EU's and MS progress in implementing the actions defined under the Strategy;
- Analysis of the changes to decision-making processes due to the implementation of these measures;
- Analysis of the overall impacts of the implementation of these measures;
- Finally, an analysis of the extent to which the Strategy has addressed the main drivers of biodiversity loss at the EU, and at the global levels.

This section begins with an overview of the progress made towards the high-level headline target and horizontal measures, before assessing each individual Target and Action under the Strategy. Each of the Targets and Actions are rated on their progress according to the following qualitative scale:

- Completed-** the Target/Action has been fully implemented, achieving their respective objectives.
- Significant progress-** The objectives of the Target/Action were not achieved, yet measures and/or tools implemented resulted in substantial strides to achieving aims.
- Limited progress-** The implementation of the Target/Action has only partially been achieved.
- No progress-** Failure to achieve the Target/Action, with no evidence identified to show progress.

Table 4-1 below summarises what was carried out in relation to each of the actions identified in the EU Biodiversity Strategy to 2020, focussing on activities under the responsibility of the European

Commission¹⁹. The table largely relates to the effectiveness evaluation criteria of this report, yet this evaluation section may not explicitly cover every element - and rather focusses on key aspects of progress. The measures taken by Member States are not systematically reported as there has been no reporting obligation on the Biodiversity Strategy. This means that, while Member State measures are included in the evaluation wherever relevant evidence was found, it is likely that further implementation activities have been undertaken at the national and sub-national level, which have not been available to summarize and take into account in this report. In order to address this challenge and obtain better information on national implementation, the study included 10 case studies that explored the implementation of the Strategy as a whole, as well as challenges and success factors for the delivery of selected biodiversity targets, in ten Member States (see Appendix C). The Member States were selected so as to be representative of their land area, biogeographic region, date of accession and occurrence of national expertise within the project team.

¹⁹ It summarises information that is more fully reported in the European Commission 6th National Report to Convention on Biological Diversity (March 2019), Mid-term review of EU Biodiversity Strategy, European Commission DG ENV biannual progress reports to the CGBN (Coordination Group on Biodiversity and Nature) meetings (2016-2020), and the EU Conference on Biodiversity and Ecosystem Services held May 2019 in Brussels.

Table 4-1 Progress on actions under the EU Strategy to 2020

Target 1	Fully implement the Birds and Habitats Directives	Measures taken
Action 1: Complete the establishment of the Natura 2000 Network and ensure good management	<p>1a) Member States and the Commission will ensure that the phase to establish Natura 2000, including in the marine environment, is largely complete by 2012.</p> <p>1b) Member States and the Commission will further integrate species and habitat protection and management requirements into key land and water use policies, both within and beyond Natura 2000 areas.</p> <p>1c) Member States will ensure that management plans or equivalent instruments which set out conservation and restoration measures are developed and implemented in a timely manner for all Natura 2000 sites.</p> <p>1d) The Commission, together with Member States, will establish by 2012 a process to promote the sharing of experience, good practice, and cross-border collaboration on the management of Natura 2000, within the biogeographical frameworks set out in the Habitats Directive.</p>	<ul style="list-style-type: none"> • Commission launched the Natura 2000 Biogeographical Process²⁰ with seminars, workshops, and cooperation activities workshops and cooperation activities bringing together national conservation agencies, government officials, experts, and stakeholders. • Information sharing through the Natura 2000 Communication Platform. • EU pilot actions with MS to solve their remaining gaps in their network of SCIs and/or marine SPAs, and to review implementation of conservation measures for SACs and SPAs. • Guidance on permitting procedures, Article 6 (update of previous guidance), sector-specific guidance with input from ad hoc working groups of MS and topic experts (energy, transport, extractive industries, fisheries, farming, forestry, aquaculture, etc), links between nature directives and other key environmental legislation (IAS, MSFD, WFD, Nitrates). • EU and international species and habitat action plans for threatened habitats and species were developed. • Action Plan for People, Nature, and the Economy launched in 2017 with 15 actions to strengthen implementation by 2020, including training, support with applying the permitting requirements, enforcement actions, and better fisheries and IAS management. • Bilateral meetings held between Commission & MS to discuss implementation issues.
Action 2: Ensure adequate financing of Natura 2000 sites	<p>2) The Commission and Member States will provide the necessary funds and incentives for Natura 2000, including through EU funding instruments, under the next Multi-annual Financial Framework. The Commission will set out its views in 2011 on how Natura 2000 will be financed under the next Multi-annual Financial Framework.</p>	<ul style="list-style-type: none"> • Commission Staff Working Paper in 2011 'Investing in Natura 2000: Delivering benefits for nature and people' (SEC(2011) 1573 final). • EU fund programme regulations (2013) required PAFs to be considered in programming and included indicators of funding for Natura 2000 (but no common indicator or new impact indicators developed since). • Indicators such as to monitor projects which protect and restore marine biodiversity and ecosystems introduced under the EMFF. • Natura 2000 funding handbook published 2014.

²⁰ https://ec.europa.eu/environment/nature/natura2000/seminars_en.htm

		<ul style="list-style-type: none"> • Update of PAF format in 2018 and seminars to support MS PAFs for the post 2020 funding period. • LIFE integrated projects introduced from 2012 to support authorities in EU Member States to implement environmental and climate plans, programmes and strategies developed at regional, multi-regional or national level, including Natura 2000. • Increase in LIFE funding for nature action grants in 2017. • LIFE Preparatory Projects on tools to promote private land conservation.
Action 3: Increase stakeholder awareness and involvement and improve enforcement	<p>3a) The Commission, together with Member States, will develop and launch a major communication campaign on Natura 2000 by 2013.</p> <p>3b) The Commission and Member States will improve cooperation with key sectors and continue to develop guidance documents to improve their understanding of the requirements of EU nature legislation and its value in promoting economic development.</p> <p>3c) The Commission and Member States will facilitate enforcement of the nature directives by providing specific training programmes on Natura 2000 for judges and public prosecutors, and by developing better compliance promotion capacities.</p>	<ul style="list-style-type: none"> • European Natura 2000 Award launched in 2013 with European Citizen's Award from 2016, Natura 2000 Day events since 2017. • EU Platform on Coexistence between People and Large Carnivores held regular dialogues and meetings since 2014; LIFE Eurolargecarnivores project. • Commission collaboration with FACE and BirdLife on hunting and Natura 2000 produced joint guidance, a dedicated awareness-raising programme on Natura 2000 among hunters, study on bird species action plan method. • EIR Peer 2 Peer support for MS national, regional, and local authorities exchanges on implementation issues. • Training for judges and prosecutors was provided. • Coordinated EU action on illegal trapping, killing and trade of birds, Intergovernmental Task Force on Illegal Killing, Taking and Trade of Migratory Birds in the Mediterranean. • Biannual meetings of Technical Platform for Cooperation on the Environment focused on the smart and effective implementation by local and regional authorities of the Birds and Habitats Directives (from 2017). • Update of guidance on species protection in preparation.
Action 4: Improve and streamline monitoring and reporting	<p>4a) The Commission, together with Member States, will develop by 2012 a new EU bird reporting system, further develop the reporting system under Article 17 of the Habitats Directive and improve the flow, accessibility and relevance of Natura 2000 data.</p> <p>4b) The Commission will create a dedicated ICT tool as part of the Biodiversity Information System for Europe to improve the availability and use of data by 2012.</p>	<ul style="list-style-type: none"> • Commission established method for Member States to report on the status and trends of their bird populations (State of Nature report 2015). • HABIDES+ reporting tool on derogations made operational. • Expert Group on Reporting work on improving quality and coherence of Article 17/12 and Natura 2000 data reporting. • Agreed method to calculate progress on Target 1. • EEA developed public Natura 2000 viewer tool as part of Biodiversity Information System for Europe (BISE). • Pilot project on using satellite images to improve surveillance of Natura 2000.

Target 2	Maintain and restore ecosystems and their services	
Action 5: Improve knowledge of ecosystems and their services in the EU	<p>5) Member States, with the assistance of the Commission, will map and assess the state of ecosystems and their services in their national territory by 2014, assess the economic value of such services, and promote the integration of these values into accounting and reporting systems at EU and national level by 2020.</p>	<ul style="list-style-type: none"> • Mapping and Assessment of Ecosystems and their Services (MAES) initiative: Research, pilot studies and EU workshops. • MAES reports: (1) analytical framework and typologies of ecosystems and ecosystem services; (2) indicators to map and assess biodiversity, ecosystem condition and ecosystem services; (3) available information; (4) urban ecosystems and their services; (5) integrated analytical framework and indicators. • All Member States have progressed in the mapping and assessment of ecosystems and their services in their territories (MAES barometer). • Integrated System of Natural Capital and ecosystem services accounting in the EU (KIP-INCA): JRC developed pilot accounts on water purification, crop pollination, recreation, crop provision, timber provision, global climate regulation, and flood control. EUROSTAT grants to support national statistical offices. • EU research projects: OpenNess and OPERAS, OPPLA hub on nature-based solutions, ESMERELDA. (See horizontal action on knowledge for more activities). • EU Pollinators Initiative launched in 2017 with communication campaigns, information, guidance, and capacity building actions (featured on the EU Pollinators Information Hive wiki webpage).
Action 6: Set priorities to restore and promote the use of green infrastructure	<p>6a) By 2014, Member States, with the assistance of the Commission, will develop a strategic framework to set priorities for ecosystem restoration at sub-national, national and EU level.</p> <p>6b) The Commission will develop a Green Infrastructure Strategy by 2012 to promote the deployment of green infrastructure in the EU in urban and rural areas, including through incentives to encourage up-front investments in green infrastructure projects and the maintenance of ecosystem services, for example through better targeted use of EU funding streams and Public Private Partnerships.</p>	<ul style="list-style-type: none"> • Estimation of the financing needs to implement Target 2 (2013). Study to support Restoration Prioritization Frameworks (2014). • Strategy on Green Infrastructure (2013). • GI working group established. • EU Technical workshop on Target 2 in 2016. • Commission guidance: guide to Multi-benefit Cohesion Policy Investments in Nature and Green Infrastructure (2013); methods to support decision-making and policy development regarding strategic GI and ecosystem restoration (2019); strategic framework for deployment of EU-level green and blue infrastructure (2019); integrating ecosystems and their services in decision-making (2019). • Commission review of progress in implementing the EU GI Strategy (2019). Horizon 2020 funding for research programmes on green infrastructure and on pollinators (2020). Commission guidance to the Member States on developing Restoration Prioritization Frameworks; few Member States have published such frameworks.

7. Ensure no net loss of biodiversity and ecosystem services	<p>7a) In collaboration with the Member States, the Commission will develop a methodology for assessing the impact of EU-funded projects, plans and programmes on biodiversity by 2014.</p> <p>7b) The Commission will carry out further work with a view to proposing by 2015 an initiative to ensure there is no net loss of ecosystems and their services (e.g. through compensation or offsetting schemes).</p>	<ul style="list-style-type: none"> • Common framework for biodiversity-proofing the EU funding programmes published in 2013. • Guidance on integrating ecosystems and their services into decision-making published in 2019. • No Net Loss Working Group set up in 2012, defined scope and objectives of NNL initiative and glossary in 2013. • Study of policy options for achieving NNL target (2014) and study of potential impacts of options (2016). • Public consultation in 2016 revealed diverging opinions on policy instruments for the initiative, in particular offsetting. No further policy development occurred, other than publication in 2020 of supporting guidance on achieving no net loss of biodiversity and ecosystem services.
Target 3		
8. Enhance direct payments for environmental public goods in the EU Common Agricultural Policy	<p>8a) The Commission will propose that CAP direct payments will reward the delivery of environmental public goods that go beyond cross-compliance (e.g. permanent pasture, green cover, crop rotation, ecological set-aside, Natura 2000).</p> <p>8b) The Commission will propose to improve and simplify the GAEC (Good Agricultural and Environmental Conditions) cross-compliance standards and consider including the Water Framework Directive within the scope of cross-compliance once the Directive has been implemented and the operational obligations for farmers have been identified in order to improve the state of aquatic ecosystems in rural areas.</p>	<ul style="list-style-type: none"> • Mandatory greening measures in CAP 2013 direct payments regulation with objective delivery of environmental public goods including Ecological Focus Areas (EFAs); evaluation of the greening measures (2017) and of the CAP as a whole (2020) assessed expected impacts on biodiversity; greening amendments (June 2017) including pesticide ban on certain EFAs including nitrogen-fixing crops and cover crops; DG Environment used Nature Dialogue bilaterals and Rural Development Network meetings to encourage MS to extend designation of Environmentally Sensitive Permanent Grassland in Natura 2000. • Cross-compliance: GAEC7 included avoidance of damaging operations during bird breeding and rearing season but MS could choose scope of landscape features protection & whether to include requirements to control invasive alien species. • GAEC 1 made min. 1m buffer strips to protect water courses and bodies compulsory (supporting WFD implementation); MS could choose to require compulsory buffer strips of up to 10m, ban herbicide use, etc. However, no other requirements of the WFD were included in cross-compliance.
9. Better target Rural Development to biodiversity conservation	<p>9a) The Commission and Member States will integrate quantified biodiversity targets into Rural Development strategies and programmes, tailoring action to regional and local needs.</p>	<ul style="list-style-type: none"> • Rural Development Regulation 2013 included focus area 4A for MS to programme measures dedicated to biodiversity, with mandatory 30% spend on environmental measures.

	<p>9b) The Commission and Member States will establish mechanisms to facilitate collaboration among farmers and foresters to achieve continuity of landscape features, protection of genetic resources and other cooperation mechanisms to protect biodiversity.</p>	<ul style="list-style-type: none"> • ENRD workshops, Commission conferences, etc. used to disseminate best practices e.g., results-based payments approach (notably EU funded pilots 2014-2019). • Common farmland birds index and the conservation status of grassland habitats (as reported under the Habitats Directive reporting) used as context and impact indicators for biodiversity. • Nature Action Plan developed, including actions relating to Natura 2000 integration within the CAP. • European Innovation Partnerships (partnerships which aim to streamline, simplify, better coordinate and complement existing instruments and initiatives, making it easier for partners to co-operate and achieve better and faster results) developed for Agricultural Sustainability and Productivity. • European Parliament supported preparatory action on EU Pollinator Monitoring and Indicators in 2019. EU funded EMBAL project (European Monitoring of Biodiversity in Agricultural Landscapes) to develop a rapid assessment of the structure of agricultural landscapes and the state of farmland biodiversity.
<p>10. Conserve Europe's agricultural genetic diversity</p>	<p>10) The Commission and Member States will encourage the uptake of agri-environmental measures to support genetic diversity in agriculture and explore the scope for developing a strategy for the conservation of genetic diversity.</p>	<ul style="list-style-type: none"> • Rural Development Regulation 2013 included sub measure to support agricultural genetic diversity. • EU funded research projects on ex-situ and in-situ conservation of plant genetic resources including crops. • Following European Parliament initiative, DG AGRI commissioned preparatory action on EU plant and animal genetic resources, which included review of rural development support. • Inclusion of new fodder plant species, in particular legumes, into scope of Directive on marketing seed of fodder plants (2016). • New EU regulation on animal breeding requirements & genetic material, breeding society rights (2016). • Proposed regulation on plant reproductive material aiming to update current rules and harmonise implementation was rejected and withdrawn in 2014. • Stakeholders objected to the failure to protect farmers' rights to exchange traditional seeds.

11. Encourage forest holders to protect and enhance forest biodiversity	<p>11a) Member States and the Commission will encourage the adoption of Management Plans, inter alia through use of rural development measures and the LIFE+ programme.</p> <p>11b) Member States and the Commission will foster innovative mechanisms (e.g., Payments for Ecosystem Services) to finance the maintenance and restoration of ecosystem services provided by multifunctional forests.</p>	<ul style="list-style-type: none"> Funding for forest measures through the CAP Rural Development Programmes from 2014 to 2020 was made conditional on the existence of a forest management plan or equivalent instrument in line with the sustainable forest management principles of Forest Europe.
12. Integrate biodiversity measures in forest management plans	<p>12) Member States will ensure that forest management plans or equivalent instruments include as many of the following measures as possible:</p> <ul style="list-style-type: none"> - maintain optimal levels of deadwood, considering regional variations such as fire risk or potential insect outbreaks. - preserve wilderness areas. - ecosystem-based measures to increase the resilience of forests against fires as part of forest fire prevention schemes, in line with activities carried out in the European Forest Fire Information System (EFFIS) - specific measures developed for Natura 2000 forest sites - ensuring that afforestation is carried out in accordance with the Pan-European Operational Level Guidelines for SFM33, as regards the diversity of species, and climate change adaptation needs. 	<ul style="list-style-type: none"> DG Environment survey of Member States forest management planning approaches in 2013 to 2014 through the Standing Forest Committee, to which 26 Member States replied, showed the diversity of Member States approaches to forest management planning. A working group convened by DG Environment in 2015 produced a guidance document on Natura 2000 and forests to help Member States with the planning and implementation of conservation measures in forests. Commission study on implementing sustainable forest management according to the EU Biodiversity Strategy and the EU Bioeconomy Strategy (NEPCon, 2018). The assessment of progress in implementing the EU Forest Strategy in 2019 (EFI et al., 2019) stated that an overview of the status of forest management plans throughout Europe is lacking, as is an analysis of the extent of biodiversity measures included in such plans.
Target 4		
Ensure the sustainable use of fisheries resources		
13. Improve the management of fished stocks	<p>13a) The Commission and Member States will maintain and restore fish stocks to levels that can produce MSY in all areas in which EU fish fleets operate, including areas regulated by Regional Fisheries Management Organisations, and the waters of third countries with which the EU has concluded Fisheries Partnership Agreements.</p> <p>13b) The Commission and Member States will develop and implement under the Common Fisheries Policy (CFP) long-term management plans with harvest control rules based on the MSY approach. These plans should be designed to respond to specific time-related targets and be based on scientific advice and sustainability principles.</p>	<ul style="list-style-type: none"> CFP 2013 landing obligation for all species subject to catch limits implemented at the fishery level through multiannual plans or specific discard plans. Technical regulations require use of scientific advice, increase protection of juveniles, set conditions for fishing of deep-sea stocks. Taskforce for approving multi-annual fisheries plans was set up. Work to develop use of Total Allowable Catch (TAC) limits. MedFish4Ever46 Declaration 2017 roadmap of five actions with measurable deliverables to improve the governance of the Mediterranean fisheries and aquaculture. Multiannual Union programme for the collection, management and use of data in the fisheries and aquaculture sectors for the period 2017-2019 contains an obligation to

	13c) The Commission and Member States will significantly step up their work to collect data to support implementation of MSY. Once this objective is attained, scientific advice will be sought to incorporate ecological considerations in the definition of MSY by 2020.	collect data on the impact of fisheries on protected and endangered species and habitats.
14. Eliminate adverse impacts on fish stocks, species, habitats and ecosystems	<p>14a) The EU will design measures to gradually eliminate discards, to avoid the by-catch of unwanted species and to preserve vulnerable marine ecosystems in accordance with EU legislation and international obligations.</p> <p>14b) The Commission and Member States will support the implementation of the Marine Strategy Framework Directive, including through providing financial incentives through the future financial instruments for fisheries and maritime policy for marine protected areas (including Natura 2000 areas and those established by international or regional agreements). This could include restoring marine ecosystems, adapting fishing activities and promoting the involvement of the sector in alternative activities, such as eco-tourism, monitoring and managing marine biodiversity, and combating marine litter.</p>	<ul style="list-style-type: none"> • Action Plan on incidental seabird catch (2012). • Shark finning regulation in 2013 prohibited the practice of shark finning in EU waters and for all EU vessels, through a Fins Naturally Attached (FNA) policy, and required reporting of shark landings. • Data Collection Regulation (2017) requirements for data collection on bycatch of seabirds, cetaceans, and other protected species. • Regulation 2019/1241 sets measures to increase the use of selective fishing gear, restrict the use of unselective gear such as drift nets and bottom trawlers, prohibit the catch of certain species and fishing in certain sensitive habitats, and enable the implementation of mitigation measures to reduce or prevent bycatch of protected species. • Revision of MSFD methodology and criteria for determining good environmental status. • Commission reviews of MS MSFD implementation. • Spatial analysis of MPA networks and methodology to assess network coherence (2015), guidance on the establishment of fisheries conservation measures under the CFP for Natura 2000 sites and for the MSFD (2018). • Adoption and implementation of the EMFF 2014-2020
Target 5	Combat Alien Invasive Species	
15. Strengthen the EU Plant and Animal Health Regimes	15) The Commission will integrate additional biodiversity concerns into the Plant and Animal Health Regimes by 2012.	<ul style="list-style-type: none"> • 2013 proposal for package of measures on animal health. • Revised EU Plant Health Regulation (2016) including list of priority pests with adverse impacts on biodiversity and native plants. • EU Animal Health Law (2016) establishes list of diseases negatively impacting biodiversity and the wider environment in the EU. • 2018 expanded list of priority notifiable diseases and their carriers includes diseases affecting bats and other wild mammals, bumblebees, wild birds, fish, shellfish, and crustaceans. • 2019 list of 20 quarantine pests as priority pests, whose economic, environmental and social impacts on the EU territory is most severe.

16. Establish a dedicated instrument on Invasive Alien Species	<p>16) The Commission will fill policy gaps in combating IAS by developing a dedicated legislative instrument by 2012.</p>	<ul style="list-style-type: none"> • The EU IAS Regulation was adopted in 2014 and entered into force in 2015, provides a framework to combat IAS. • In the framework of this Regulation, a list of EU prioritised species (list of invasive alien species of Union concern) has been adopted in 2016 and updated in 2017 and 2019, reaching a total of 66 species on the list. • Restrictions and obligations for their eradication or management gradually kicked-in over the period 2016-2019, including measures on their prevention, early detection, rapid eradication, and management. • An e-reporting tool was put in operation to facilitate Member State reporting in 2019 on the implementation of the Regulation. • The IAS Committee (body where MS are represented with main task to decide on which species are included on the Union list) and three expert groups were set up: the Scientific Forum (experts appointed by MS with main task to evaluate risk assessments), the IAS Expert Group (where MS discuss implementation aspects) and the Working Group on IAS (where stakeholders and MS discuss implementation aspects). • JRC established the European Aliens Species Information Network (EASIN) platform that provides information of alien species in Europe, including their distribution. • Within EASIN, JRC developed the notification system (NOTSYS) that allows MS to exchange information and early alerts on occurrence of IAS included in the Union list. • JRC also published reports on the baseline distribution of species on the Union list in 2019, and developed the invasive alien species Europe app to promote citizen science and engagement.
Target 6	Contribute to averting global biodiversity loss	
17. Reduce indirect drivers of biodiversity loss	<p>17a) Under the EU flagship initiative on resource efficiency, the EU will take measures (which may include demand and/or supply side measures) to reduce the biodiversity impacts of EU consumption patterns, particularly for resources that have significant negative effects on biodiversity.</p> <p>17b) The Commission will enhance the contribution of trade policy to conserving biodiversity and address potential negative impacts by systematically including it as part of trade negotiations and dialogues with third countries, by identifying and evaluating potential impacts on</p>	<ul style="list-style-type: none"> • The Commission developed in 2014 a practical framework including general and fund-specific guidelines to be used by national and regional authorities as well as by Commission services under the 2014-2020 Multiannual Financial Framework. • EU Flagship initiative on Resource Efficiency actions to analyse environmental footprints and improve the knowledge base (2011), Circular Economy package (2015), European Strategy for Plastics in a Circular Economy (2018). • Single-Use Plastics Directive (2019). • Updates of critical raw materials list and report on CRMs and circular economy (2018).

	<p>biodiversity resulting from the liberalisation of trade and investment through ex-ante Trade Sustainability Impact Assessments and ex-post evaluations, and seek to include in all new trade agreements a chapter on sustainable development providing for substantial environmental provisions of importance in the trade context including on biodiversity goals.</p> <p>17c) The Commission will work with Member States and key stakeholders to provide the right market signals for biodiversity conservation, including work to reform, phase out and eliminate harmful subsidies at both EU and Member State level, and to provide positive incentives for biodiversity conservation and sustainable use.</p>	<ul style="list-style-type: none"> • FLEGT action plan against illegal logging promotes Voluntary Partnership Agreements (and 2019 COM on deforestation which includes a commitment to present a legislative proposal). • EU Timber Regulation obligations for operators placing timber and timber products on the market. • Expert Group on the EU Timber Regulation and the Forest Law Enforcement, Governance and Trade Regulation. • Encouragement of public procurement policies that specify trade in sustainable and verified legal timber. • Developing countries required to sign up to international biodiversity agreements as condition of Generalized Scheme of Preferences (GSP) and bilateral trade agreements. EU Action Plan against Wildlife Trafficking (2016). • Business and Biodiversity Platform (B@B) sharing of best practices. • Commission funded project on environmental taxation (2019-2020) held a conference to promote Member States best practices (2021). • Commission study initiated in 2020- aiming at providing stakeholders with a toolbox for identifying environmentally harmful subsidies (including biodiversity) and identifying the social, economic and environmental impacts of their phasing out. • The Commission is also implementing biodiversity proofing in EU funds under the 2021-2027 MFF by systematically integrating biodiversity as Commission operationalizes the 'Do No Significant Harm' principle (e.g. in the recent Commission's checklist on the RRF and upcoming sustainability proofing guidelines under InvestEU). • Negotiations in the WTO on harmful subsidies for fisheries started, but not yet concluded. • Following a scoping study (2018), the Commission initiated in 2019 the development of a methodology to better assess the impacts of trade liberalization on biodiversity. This study, to be released in April 2021, will support better integration of biodiversity in Sustainability Impact Assessments and ex post evaluations of EU FTAs. • The Commission is now also including biodiversity articles in Trade and Sustainable Development chapters of new EU FTAs. • Biodiversity is also regularly addressed as part of TSD implementation.
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18. Mobilise additional resources for global biodiversity conservation	<p>18a) The Commission and Member States will contribute their fair share to international efforts to significantly increase resources for global biodiversity as part of the international process aimed at estimating biodiversity funding needs and adopting resource mobilisation targets for biodiversity at the 10th Conference of the Parties to the Convention on Biological Diversity in 2012.</p> <p>18b) The Commission will improve the effectiveness of EU funding for global biodiversity inter alia by supporting natural capital assessments in recipient countries and the development and/ or updating of National Biodiversity Strategies and Action Plans, and by improving coordination within the EU and with key non-EU donors in implementing biodiversity assistance/projects.</p>	<ul style="list-style-type: none"> • The EU significantly increased budgetary resources allocated to environmental issues via the Thematic Programme on Global Public Goods and Challenges (GPGC) under the Development Cooperation Instruments (including support for NBSAPs and resource mobilization plans), the Partnership Instrument and increased the proportion of funding directed to natural resources in the European Development Fund. • DEVCO led programs supporting biodiversity over 2014-2020 represented 5.1% of total DEVCO programs. • The scope of external programming included Biodiversity and Ecosystem Services in Territories of European Overseas (BEST) funded initially as a preparatory action in 2010, then EU funded the BEST 2.0 Programme with a budget of 8 million EUR from 2015. • The Biodiversity for Life Flagship Initiative was used to bring together all EU-funded development cooperation projects and programmes that target biodiversity as a principal objective. • Strategies such as Larger than Elephants, Larger than Tigers, and Larger than Jaguars, define a consistent approach for EU investments and set a strategic approach to halting biodiversity loss in Africa, Asia, and Latin America and the Caribbean respectively, including institutional strengthening and capacity building of national authorities and global action against wildlife crime, deforestation, and ecosystem function collapse.
19. 'Biodiversity proof' EU development cooperation	<p>19) The Commission will continue to systematically screen its development cooperation action to minimise any negative impact on biodiversity, and undertake Strategic Environmental Assessments and/or Environmental Impact Assessments for actions likely to have significant effects on biodiversity.</p>	<ul style="list-style-type: none"> • Guidance for Member States on Strategic Environmental Assessments and mainstreaming biodiversity and climate in development cooperation action (2017). • Development cooperation planned and delivered through National Indicative Programmes or Regional Indicative Programmes and Sector Policy Support Programmes.
20. Regulate access to genetic resources and the fair and equitable sharing of benefits arising from their use	<p>20) The Commission will propose legislation to implement the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation in the European Union so that the EU can ratify the Protocol as soon as possible and by 2015 at the latest, as required by the global target.</p>	<ul style="list-style-type: none"> • Regulation (EU) No 511/2014 on compliance measures for users from the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union applicable since 12 October 2014. Commission Implementing Regulation (EU) 2015/1866 sets rules for the register of collections, monitoring user compliance and best practices. • The Commission sent letters of formal notice in January 2018 to nine Member States that were still non-compliant with the establishment of competent authorities and penalties for infringement of users' due diligence obligations under the Regulation ; by the end of 2020 all Member States were compliant.

		<ul style="list-style-type: none"> • The first Commission report on implementation of the regulation was published in 2017. • The ABS Expert Group set up under the Regulation met regularly and assist Member States with the implementation. • The Consultation Forum, gathering stakeholders from private and public sectors, also met regularly. • A Workshop in 2017 with participation from provider countries. • A guidance document on the scope of application and core obligation of the EU ABS Regulation was issued by the Commission in 2016, and a revised version was published in 2020).
Horizontal measures		
Partnerships for biodiversity	<p>Reinforce cooperation and build effective partnerships with key sectors, including business, spatial planners and researchers and society at large; also</p> <ul style="list-style-type: none"> • The EU outermost regions and overseas countries and territories (through the BEST initiative); • Developing countries (in implementing the TEEB recommendations) and EU candidate countries; • Biodiversity-related Conventions. 	<ul style="list-style-type: none"> • Common Implementation Framework (CIF) validated May 2012 as the governance structure to support the delivery of the Strategy assigned responsibility for guiding implementation to Biodiversity and Nature Directors meetings (NADEG), and Coordination Group for Biodiversity and Nature (CGBN) as operational steering group. Partnerships for Target 1 (see Action 1) and Target 2 (see Actions 5, 6 & 7). • EU Business and Biodiversity Platform (B@B platform) relaunched by Commission in 2017 to encourage active involvement of businesses in the implementation of the Strategy. Global: Biodiversity for Life (B4Life) initiative (see Action 18). EU participated in the Critical Ecosystems Partnership Fund (CEPF) with EUR 20 million, Wealth Accounting and the Valuation of Ecosystem Services (WAVES) global partnership headed by the World Bank with EUR 2.5 M. Joint Communication on International Ocean Governance (2016).
Mobilising funding resources	<p>The Commission and Member States will work to ensure a better uptake and distribution of existing funds for biodiversity, rationalise available resources and maximise co-benefits of various funding sources, including funding for agriculture and rural development, fisheries, regional policy and climate change, and diversify and scale up various sources of funding. The Commission and Member States will promote the development and use of innovative financing mechanisms, including market-based instruments, public private partnerships, and the possible establishment of a biodiversity financing facility. The potential of biodiversity offsets to ensure no net loss of biodiversity and ecosystem services will be explored. Member States to develop multi-annual</p>	<ul style="list-style-type: none"> • EU fund regulations in 2014-2020 funding period integrated biodiversity priorities. • European Court of Auditors assessed use of ERDF funds for biodiversity in 2014, EMFF in 2020, agri-environment in 2011, and CAP funds overall in 2020. • Common Framework for Biodiversity-Proofing of the EU funds (2014). • LIFE programme prioritised targets 1, 2, 3, 4 and 5 and funded information and awareness raising campaigns under information & governance priority area. • LIFE funding for nature and biodiversity was increased by 10% in 2018-2020 following the Action Plan for People, Nature, and the Economy. • 7th FP and then Horizon 2020 funding for research and innovation projects focusing on biodiversity and ecosystem services.

	<p>planning for Natura 2000, consistent with the prioritized action frameworks. Responses to the COP10 commitment to increase substantially financial resources from all sources for effective implementation of the Nagoya outcomes set out in national biodiversity strategies and action plans (NBSAPs).</p>	<ul style="list-style-type: none"> • Commission developed biodiversity financing and tracking methodology for the major EU funds and applied from 2017 onwards. • EIB set up Natural Capital Financing Facility (NCFF) for pilot projects promoting the preservation of natural capital in 2014, European Fund for Strategic Investments (EFSI) for large restoration investments in 2015. • See Action 2 for funding resources for Natura 2000. See partnerships and Action 18 for increase in development cooperation funding resources for biodiversity.
Building on biodiversity knowledge	<p>Commission will work with Member States and the European Environment Agency to develop an integrated framework for monitoring, assessing and reporting on progress in implementing the strategy. The Biodiversity Information System for Europe (BISE) web portal will be the main platform for data and information sharing. National, EU and global monitoring, reporting and review obligations will be improved and streamlined as far as possible with requirements under other environmental legislation, such as the Water Framework Directive. The EU 2020 biodiversity baseline and the updated EU biodiversity indicators will be key components of Shared Environmental Information System and Global Monitoring for Environment and Security, the EU Forest Data Centre and the LUCAS Land Use Cover Area Frame Survey. EU will remain closely involved in and contribute actively to the new intergovernmental science-policy platform on biodiversity and ecosystem services (IPBES), particularly to work on regional assessments.</p>	<ul style="list-style-type: none"> • EU 2020 Biodiversity baseline was established and revised in 2015 to be consistent with MAES approach, used in midterm review to measure progress in reaching targets. • Biodiversity Information System for Europe (BISE) as single-entry point for published data and information supporting the implementation and monitoring of the EU Biodiversity Strategy 2020. • Update and development of EU SEBI biodiversity indicators. MAES and KIP-INCA initiatives - see Action 5. • TRAIN and Eurostat grants to support MS in MAES and accounting. EU support for science-policy interfaces: IPBES, EKLIPSE, Biodiversa. • Global knowledge: Digital Observatory for Protected Areas (DOPA) developed by JRC to assess, monitor, and forecast biodiversity in protected areas globally. • EU funded setup of regional observatories of biodiversity and protected areas - BIOPAMA (in ACP countries), OFAC (in central Africa), and BID (to improve quality and use of scientific information related to biodiversity for decision-making). • MAES OR OCT EP pilot project on mapping and assessing the state of ecosystems and their services in the outermost regions and overseas countries and territories.

Headline Target

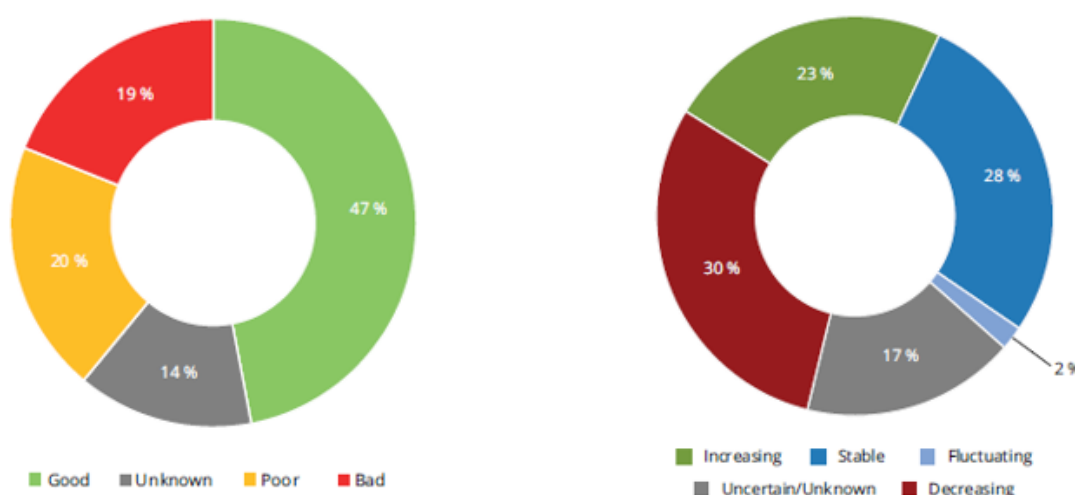
Progress towards the headline target has been limited, and the target has not been reached.

Biodiversity loss and the degradation of ecosystem services in the EU have continued since the 2010 EU biodiversity baseline,²¹ whilst many direct and indirect drivers of change in nature have accelerated.²²

The assessments of **species and habitats under the Nature Directives** highlight that a significant proportion of species and habitats assessments remain in poor or bad status:

Based on the results of the 2013-2018 reporting, an estimated 47% of all European wild bird species show ‘good’ population status, yet 30% of all populations exhibit decreasing trends (over short-term, 12 year periods). A significant portion (14%) of bird population status are unknown due to a lack of reliable data, trend assessments are unknown for 17% of populations.²³

Figure 4-1 EU Population status of birds (left), short-term (12-year) breeding bird population trends at EU level



Source: Taken from EC COM (2020) 635 final, *The state of nature in the European Union Report on the status and trends in 2013 - 2018 of species and habitat types protected by the Birds and Habitats Directives*.

- For habitats, the majority of assessments show a ‘poor’ (45%) or ‘bad’ (36%) status, with only 15% of habitat types assessments showing ‘good’ status. For habitats not in good status, only 9% of assessments show improving trends between reporting periods, 34% are stable whereas 36% are continuing to deteriorate.²⁴ Similar to bird population assessments, a significant percentage (21%) of habitats exhibit unknown status trends. Despite these negative trends, some positive examples are noted, particularly at Member State-level. For example, an average of 6% of Member States’ national or regional habitat assessments demonstrate improvements, as do similar assessments for species other than birds.²⁵

²¹ The baseline refers to a reference point developed in 2010 by the EEA (subsequently updated in 2015 to align with MAES ecosystem classifications) to outline the state and trends of biodiversity and ecosystems in the EU. The baseline is used to track progress made in achieving the objectives of the Strategy.

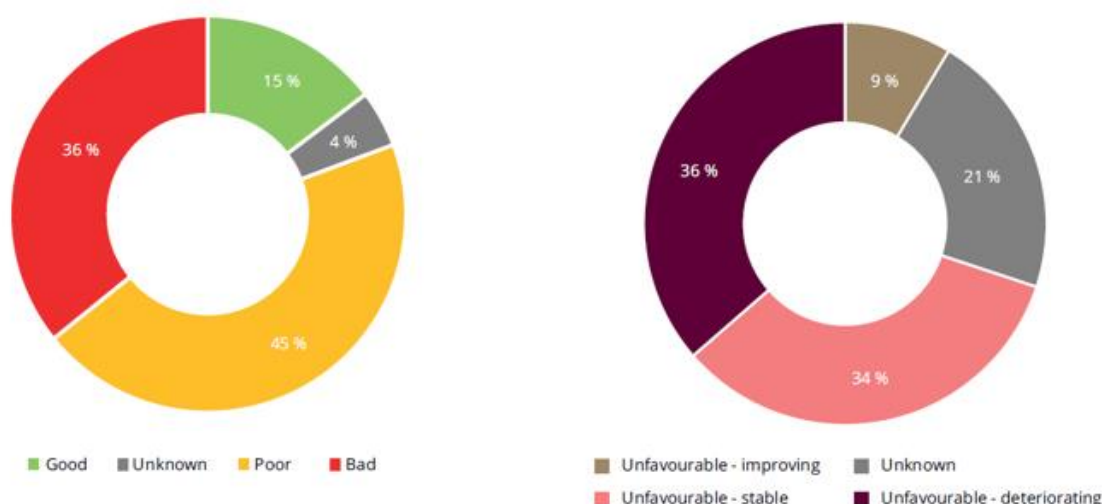
²² EEA (2019) *The European Environment - state and outlook 2020 (SOER 2020)*. Knowledge for transition to a sustainable future.

²³ EEA (2020) *State of nature in the EU, Results from reporting under the nature directives 2013-2018*. EEA Report No.10//2020.

²⁴ EEA (2020) *State of nature in the EU, Results from reporting under the nature directives 2013-2018*. EEA Report No.10//2020.

²⁵ EC COM (2020) 635 final, *The state of nature in the European Union Report on the status and trends in 2013- 2018 of species and habitat types protected by the Birds and Habitats Directives*.

Figure 4-2 Conservation status of habitats at EU level (left) and conservation status trends for habitats not in good status at EU level (right)



Source: Taken from EC COM (2020) 635 final, *The state of nature in the European Union Report on the status and trends in 2013 - 2018 of species and habitat types protected by the Birds and Habitats Directives*

The majority of other species included within the scope of the Habitats Directive remain in 'poor' or 'bad' status (63% of assessments), with a slight increasing trend for those in 'good' status (27% of assessments in 2013-2018 as opposed to 23% in the previous reporting cycle). A significant proportion of species which have a 'poor' or 'bad' status show deteriorating trends (35% of assessments), whilst only 6% show improvements. Again, 31% of species assessments show unknown trends,²⁶ highlighting significant data gaps. This is particularly pertinent for marine species, where data remains largely incomplete.²⁷

The most commonly reported pressures exerted on habitats and species under the Nature Directives are grouped as activities relating to agricultural, urbanisation and forestry:

Regarding agricultural activities, changes in agricultural management are the most widely reported pressure type, particularly the abandonment of grassland management, which has a significant negative impact on pollinators. Furthermore, the use of fertilisers and pesticides have incurred significant negative impacts on a range of species and habitats, in addition contributing to the pollution of groundwaters and surface waters.²⁸ Actions under Target 3 (outlined below) have not been sufficient to reduce these pressures and conserve and restore biodiverse agricultural landscapes and species.

For urbanization- sports, tourism and leisure activities (e.g. outdoor sports, leisure aircraft, drones, human trampling and unregulated wildlife watching) are reported as the most significant pressures, followed by conversion of natural/semi-natural land (to housing, settlement or recreational areas) and the construction/modification of existing

²⁶ EC (2021) *The State of Nature in the EU. Conservation status and trends of species and habitats protected by the EU Nature Directives 2013-2018.*

²⁷ EC (2021) *The State of Nature in the EU. Conservation status and trends of species and habitats protected by the EU Nature Directives 2013-2018.*

²⁸ EEA (2020) *State of nature in the EU, Results from reporting under the nature directives 2013-2018.* EEA Report No.10//2020.

urban/recreational areas (e.g. demolishing structures). The conversion of land poses particular threats to sensitive ecosystems which support an array of species.²⁹

Finally, the most significant forestry-related pressures and threats encompass the (excessive) removal of dead/dying trees, clear-cutting practices, and the removal of old trees. Such actions can remove or critically damage important breeding, feeding and shelter sites of a myriad of species.³⁰

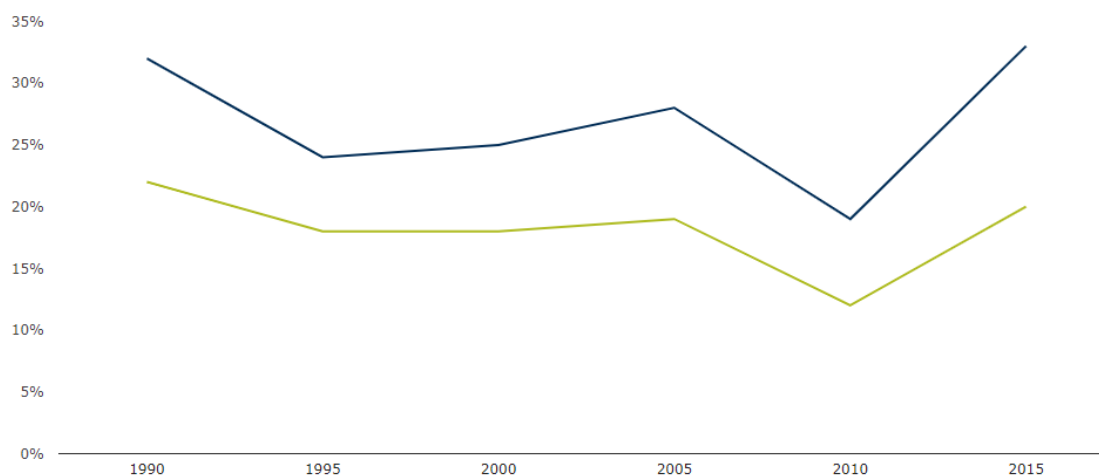
For **surface water habitats**, the, the predominant factors for not achieving good ecological status under the Water Framework Directive (WFD) include hydromorphological pressures, diffuse pollution and over-abstraction.

Hydromorphological pressures originate from the physical alteration of river channels, riparian zones or shores due to anthropogenic structures, resulting in significant pressures on 40% of surface water bodies in the EU. Such pressures hinder the movement of species and sediments, whilst also negatively impacting water retention of natural flood protection through loss of connectivity between rivers and floodplains.

Pollution emissions from agricultural, industrial and household use are reported as a pressure to 38% of surface waters in the EU, with nitrate pollution of particular concern to groundwater bodies.

Finally, despite water abstraction decreasing in recent year in the EU, water scarcity issues continue to exacerbate environmental pressures throughout Europe as shown in Figure 4-3 below, with climate change impacts projected to increase the frequency and scale of water scarcity in the future.³¹

Figure 4-3 Population and area exposed to water scarcity conditions in European summers 1990-2015



Source: EEA (2021) *Use of freshwater resources in Europe*. Available at: <https://www.eea.europa.eu/data-and-maps/indicators/use-of-freshwater-resources-3/assessment-4>

Note: Blue line= population exposed to water stress conditions. Green line= Area affected by water scarcity conditions (defined as a water exploitation index above 20%).

²⁹ EEA (2020) State of nature in the EU, Results from reporting under the nature directives 2013-2018. EEA Report No.10//2020.

³⁰ EEA (2020) State of nature in the EU, Results from reporting under the nature directives 2013-2018. EEA Report No.10//2020.

³¹ EEA (2019) The European Environment - state and outlook 2020 (SOER 2020). Knowledge for transition to a sustainable future.

Within **marine habitats**, pressures such as sea surface temperature and ocean acidification continue to worsen. Hazardous substances across all European seas are found above threshold values, with persistence substances such as PCBs and heavy metals in particular continuing to undermine ecological targets. Nutrient pollution continues to exceed threshold values in a significant portion of sites throughout Europe, whereas hypoxia, non-indigenous species, marine litter, hydromorphological pressures and underwater noise all contribute to marine ecosystem degradation. Finally, the overexploitation of fisheries (particularly in the Mediterranean and Black Sea regions), bycatch and damaging fishery practices (particularly bottom-trawling) continue to exert significant pressures.³²

Additionally, the **consumption demands of EU citizens** poses global issues, with the EU-27 + UK ecological footprint per person twice that of the region's biocapacity.³³ Such deficits result in Member States meeting demands through: over-exploitation of their natural capital stocks to compensate for shortages; importing products from other regions, resulting in the exploitation of the biocapacity of other nations (and export of related carbon footprint); and/or, exploitation of global commons. All of such elements directly or indirectly contribute to biodiversity loss and ecosystem collapse.³⁴

Regarding **ecosystems services**, the recently published MAES report outlines the potential of EU ecosystems to provide services, including timber provision, crop pollination, flood control and nature-based recreation.³⁵

Crop pollination (defined in the report as the transfer of crop pollen by bees) potential has shown a 1% decrease per decade in Europe, with decreases particularly apparent in North-Western Europe. Conversely, the demand for crop pollination has risen 5% per decade, highlighting a demand surplus.

For flood control, a slight decrease in ecosystem service potential is noted, whereas demand continues to rise at 3% per decade.

Finally, nature-based recreation potential shows stable trends.

Ultimately, the aforementioned ecosystems services are estimated to have stabilised or eroding potential to deliver benefits, with changes in land use/cover, ecosystem condition, various environmental variables and increased human demand resulting in pressures on the ability of ecosystems to provide such services.³⁶

Six operational targets

The analysis for the six operational targets of the Strategy is outlined in the following section.

Limited progress has been made with achieving the six targets of the Strategy, despite numerous actions being undertaken. All Targets, with the exception of Target 5, have been classified as showing limited progress towards achieving their prescribed objectives. Of the twenty actions, only five are considered to have been completed (Actions: 4, 5, 15, 16, 20), whereas one (action 17) is considered to have not progressed since the adoption of the Strategy. The majority of actions (nine actions in total)

³² EEA (2019). The European Environment - state and outlook 2020 (SOER 2020). Knowledge for transition to a sustainable future.

³³ EEA (2020) Indicator Assessment, Ecological footprint of European countries. Available at:

<https://www.eea.europa.eu/data-and-maps/indicators/ecological-footprint-of-european-countries-2/assessment>

³⁴ EEA (2020) Indicator Assessment, Ecological footprint of European countries. Available at:

<https://www.eea.europa.eu/data-and-maps/indicators/ecological-footprint-of-european-countries-2/assessment>

³⁵ MAES et al., (2020) Mapping and Assessment of Ecosystems and their Services: An EU ecosystem assessment

³⁶ MAES et al., (2020) Mapping and Assessment of Ecosystems and their Services: An EU ecosystem assessment

are considered to have shown limited progress. Given the biodiversity trends outlined throughout this report, these Targets and Actions have not collectively led to the halting of biodiversity loss.

Target 1 Fully implement the Birds and Habitats Directives

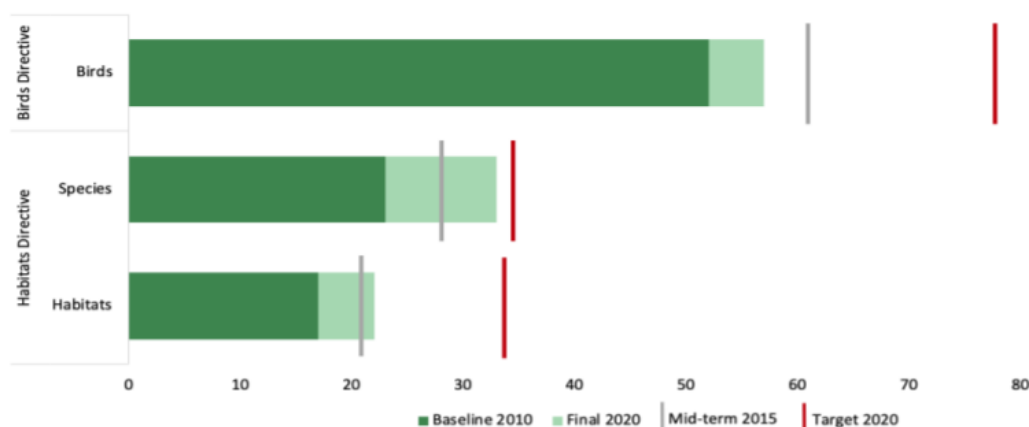
Box 4-1 Target 1 of the EU Biodiversity Strategy to 2020

To halt the deterioration in the status of all species and habitats covered by EU nature legislation and achieve a significant and measurable improvement in their status so that, by 2020, compared to current assessments:

- (i) 100% more habitat assessments and 50% more species assessments under the Habitats Directive show an improved conservation status; and,
- (ii) 50% more species assessments under the Birds Directive show a secure or improved status.

Limited progress towards Target 1 has been achieved. This target aimed to achieve a significant and measurable improvement in the conservation status of all habitats and species covered by the Birds and Habitats Directives, such that 100% more habitat assessments and 50% more species assessments show a favourable or improving conservation, compared to the previous reporting period. For bird species under the Birds Directive, the target was for 50% more species assessments to have a secure or improving population status. As shown in Figure 4-4 below, the corresponding targets were not achieved, although there was only a 2% gap in the case of species under the Habitats Directive.

Figure 4-4 Progress towards Target 1 as % of assessments



Note: Each bar shows the percentage of assessments with good status or improving

Source: EC COM (2020) 635 final, The state of nature in the European Union Report on the status and trends in 2013- 2018 of species and habitat types protected by the Birds and Habitats Directives.

Action 1: Complete the establishment of the Natura 2000 network and ensure good management

Box 4-2 Action 1 of the EU Biodiversity Strategy to 2020

- 1a) Member States and the Commission will ensure that the phase to establish Natura 2000, including in the marine environment, is largely complete by 2012.
- 1b) Member States and the Commission will further integrate species and habitats protection and management requirements into key land and water use policies, both within and beyond Natura 2000 areas.
- 1c) Member States will ensure that management plans or equivalent instruments which set out conservation and restoration measures are developed and implemented in a timely manner for all Natura 2000 sites.
- 1d) The Commission, together with Member States, will establish by 2012 a process to promote the sharing of experience, good practice and cross-border collaboration on the management of Natura 2000, within the biogeographical frameworks set out in the Habitats Directive.

Significant progress has been made towards Action 1. The Natura 2000 area for EU-27 currently covers 763,986km² of terrestrial area and 441,001km² of marine area³⁷, representing a total coverage of 18.5%³⁸ (EU-27) and 9.7% (including UK)³⁹ of the total land and marine area respectively. The total coverage of Natura 2000 has grown significantly since the inception of the Strategy, with the area in 2011 (earliest available data) estimated at 751,338km² (550,791 km² terrestrial, 200,597km² marine).⁴⁰ Deficiencies remain in the network- mainly relating to the limited coverage in the coastal areas of the Adriatic Sea, and offshore areas of Macaronesia, Ionian Sea/Central Mediterranean and the Adriatic Sea.⁴¹

In 2018, the Member States reported having management plans or equivalent instruments setting out conservation and restoration measures for 70% of Natura 2000 sites across the EU (compared to approximately 50% in 2012⁴²).⁴³ However, a study by the EEA found that management plans often lack suitable indicators and quantifiable targets/ objectives, making it difficult to measure and monitor the implementation of Natura 2000.⁴⁴ In addition, the European Court of Auditors on Natura 2000 report concluded that Member States were not sufficiently managing Natura 2000 sites, whilst conservation measures were delayed in implementation or inappropriately defined managing the Natura 2000 network sufficiently well. Furthermore, projects which could impact Natura 2000 sites were not sufficiently assessed by Member States.⁴⁵

Member States which did present some form of monitoring activities in their management plans were often lacking detail or did not include time-bound targets.⁴⁶ Member States' management of Natura 2000 sites has also been hindered by insufficient coordination between competent authorities. This includes: a lack of consideration of Natura 2000 in urban planning; overlaps of responsibility of local authorities; and, a lack of coordination amongst agricultural authorities and environmental authorities regarding the implementation of agri-environmental measures. Furthermore, national structures which promote cross-border cooperation are lacking (although good practice examples exist), meaning that cross-border sites are not managed to attain their full biodiversity potential.⁴⁷ Finally, the assessment of management effectiveness by MS has occurred in less than 8% of protected areas.⁴⁸ As such, measuring the overall effectiveness of the Natura 2000 network is also problematic as the data reported

³⁷ EEA (2020) Natura 2000 Barometer. Available at: <https://www.eea.europa.eu/data-and-maps/dashboards/natura-2000-barometer>

³⁸ EEA (2020) Natura 2000 Barometer. Available at: <https://www.eea.europa.eu/data-and-maps/dashboards/natura-2000-barometer>. No data is available on the total marine Natura 2000 coverage in EU-27.

³⁹ EC, 2019, The EU Nature Directives: Protecting Europe's marine biodiversity, European Commission (<https://ec.europa.eu/environment/nature/natura2000/marine/docs/Marine%20brochure%20WEB.pdf>) accessed 30 March 2021.

⁴⁰ EEA (2020) Natura 2000 Barometer. Available at: <https://www.eea.europa.eu/data-and-maps/dashboards/natura-2000-barometer>

⁴¹ Agnesi et al., (2020) Spatial Analysis of Marine Protected Area Networks in Europe's Seas III. ETC/ ICM Technical Report 3/2020: European Topic Centre on Inland, Coastal and Marine waters, 40 pp.

⁴² EC SWD (2016) 472 final, Fitness Check of the EU Nature Legislation (Birds and Habitats Directives)

⁴³ <https://chm.cbd.int/database/record?documentID=243509>

⁴⁴ EEA (2020) Management effectiveness in the EU's Natura 2000 network of protected areas. Available at: <https://www.eea.europa.eu/publications/management-effectiveness-in-the-eus/management-effectiveness-in-the-eu>

⁴⁵ ECA (2017) Special report No 1- More efforts needed to implement the Natura 2000 network to its full potential. Available at: https://www.eca.europa.eu/Lists/ECADocuments/SR17_1/SR_NATURA_2000_EN.pdf

⁴⁶ ECA (2017) Special report No 1- More efforts needed to implement the Natura 2000 network to its full potential. Available at: https://www.eca.europa.eu/Lists/ECADocuments/SR17_1/SR_NATURA_2000_EN.pdf

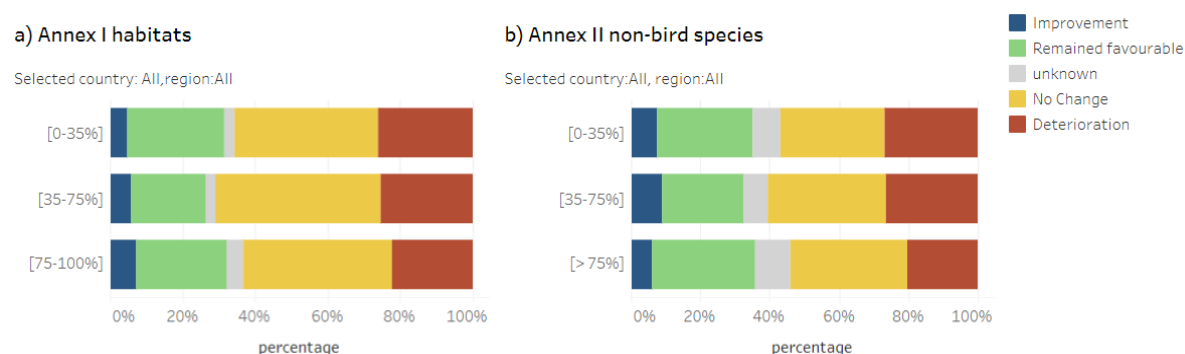
⁴⁷ ECA (2017) Special report No 1- More efforts needed to implement the Natura 2000 network to its full potential. Available at: https://www.eca.europa.eu/Lists/ECADocuments/SR17_1/SR_NATURA_2000_EN.pdf

⁴⁸ IEEP, UNEP-WCMC and Trinomics (2020) Management effectiveness in the EU's Natura 2000 network of protected areas. Available at: <https://www.eea.europa.eu/themes/biodiversity/natura-2000/management-effectiveness-in-the-eu>

does not enable a comparison between the conservation status of species (particularly birds (terrestrial and marine) and butterflies) and habitats inside and outside the network.⁴⁹

Despite the aforementioned management and monitoring issues, non-bird species and Annex I habitats are more likely to have a good conservation status if their respective populations or habitat area are well represented by the Natura 2000 network (i.e. greater than 75% coverage), as shown in Figure 4-5 below. This is with the exception of freshwater, grasslands, sclerophyllous scrub and rocky habitats.⁵⁰ Furthermore, Natura 2000 sites have demonstrated that species which sites were not originally designed for occur more frequently inside Natura 2000 than beyond site borders.⁵¹

Figure 4-5 Changes in conservation status and trends of non-bird species and habitats within Natura 2000 coverage classes (0-35%; 35-75%; 75-100%)



Source: Taken from EEA (2020) State of Nature reporting data- available at: <https://www.eea.europa.eu/themes/biodiversity/state-of-nature-in-the-eu/explore-nature-reporting-data>

Action 2: Ensure adequate financing of Natura 2000 sites

Box 4-3 Action 2 of the EU Biodiversity Strategy to 2020

2) The Commission and Member States will provide the necessary funds and incentives for Natura 2000, including through EU funding instruments, under the next multiannual financial framework.

The Commission will set out its views in 2011 on how Natura 2000 will be financed under the next multi-annual financial framework.

Limited progress towards Action 2 has been achieved. The Commission's Staff Working Paper on financing Natura 2000 in 2011 restated the integrated approach to EU co-financing of Natura 2000 and requested Member States to submit Prioritised Action Frameworks (PAFs) detailing how they plan to integrate funding needs within EU financial instruments in the 2014 to 2020 programming period.⁵² PAFs have been developed by most Member States (with the exception of France and Denmark) however, operational programmes under the Multiannual Financial Framework (MFF) do not accurately reflect Natura 2000 financing needs outlined under PAFs. Furthermore, challenges have been noted in garnering an overview of Member State PAF coherence with operational programmes/ rural

⁴⁹ EEA (2020) State of nature in the EU- Results from reporting under the nature directives 2013-2018; van der Sluis et al., (2016) How much Biodiversity is in Natura 2000? The "Umbrella Effect" of the European Natura 2000 protected area network, Technical Report, Alterra Wageningen UR (University & Research Centre).

⁵⁰ EEA (2020) State of nature in the EU- Results from reporting under the nature directives 2013-2018.

⁵¹ van der Sluis et al., (2016) How much Biodiversity is in Natura 2000? The "Umbrella Effect" of the European Natura 2000 protected area network, Technical Report, Alterra Wageningen UR (University & Research Centre).

⁵² European Commission (2011) Financing Natura 2000. Investing in Natura 2000: Delivering benefits for nature and people. Commission Staff Working Paper, SEC(2011) 1573 final, European Commission, Brussels.

development programmes due to inconsistencies between regions. This points to a need to improve the consistency of the PAF exercise to ensure EU funding of Natura 2000.⁵³

The Fitness Check of the Nature Directives concluded that available funding was insufficient to meet the needs of the network, but that the PAFs had made a positive contribution to securing funding for Natura 2000 through EU funding instruments despite their variability in ambition and quality.⁵⁴ The European Court of Auditors concluded in 2017 that EU funds were not well mobilised to support the management of the network (with the possible exception of EMFF funding- where indicators are present to track Natura 2000 spending) and the Commission did not address these shortcomings in a structured manner.⁵⁵ Revised PAFs submitted for the post 2020 period indicate that Member States have estimated their funding needs at around double that estimated when the Strategy was drafted.⁵⁶

Action 3: Increase stakeholder awareness and involvement and improve enforcement

Box 4-4 Action 3 of the EU Biodiversity Strategy to 2020

- 3a) The Commission, together with Member States, will develop and launch a major communication campaign on Natura 2000 by 2013.
- 3b) The Commission and Member states will improve cooperation with key sectors and continue to develop guidance documents to improve their understanding of the requirements of EU nature legislation and its value in promoting economic development.
- 3c) The Commission and Member States will facilitate enforcement of the nature directives by providing specific training programmes on Natura 2000 for judges and public prosecutors, and by developing better compliance promotion capacities.

Significant progress towards Action 3 has been achieved. Various communication tools have been developed by the Commission to increase awareness of Natura 2000, including the Natura 2000 award⁵⁷ and the Natura 2000 day.⁵⁸ Such awareness campaigns may have led to the slight increase in awareness the general public have towards Natura 2000: the 2018 Eurobarometer survey⁵⁹ found that 30% of respondents had heard of the Natura 2000 network- up by 3% points from the 2015 survey.

Several guidance documents have been produced by the Commission to improve the understanding of EU nature legislation across multiple sectors,⁶⁰ whilst training programmes for judges and prosecutors

⁵³ ECA (2017) Special Report No.1- More efforts needed to implement the Natura 2000 network to its full potential

⁵⁴ EC SWD (2016) 472 final, Fitness Check of the EU Nature Legislation (Birds and Habitats Directives)

⁵⁵ ECA (2017) Special Report No.1- More efforts needed to implement the Natura 2000 network to its full potential

⁵⁶ Presentation by DG Environment official Przemyslaw Oginski at LIFE platform meeting 'Ecological connectivity, restoration and management needs for Natura 2000 in 2021-2027' March 2021 - current PAF estimates add up to around 12.5 billion EUR/year, as compared to 5.8 billion per year envisaged in the biodiversity strategy in 2011.

⁵⁷ EC (2020) European Natura 2000 Award. Available at:

<https://ec.europa.eu/environment/nature/natura2000/awards/>

⁵⁸ EC (2020) 21 May - European Natura 2000 Day. Available at:

<https://ec.europa.eu/environment/nature/natura2000/EUnatura2000day/>

⁵⁹ EC (2018) Special Eurobarometer 481 - December 2018- Attitudes of Europeans towards Biodiversity

⁶⁰ For example, see EC (2012) Commission note on the designation of special areas of conservation

(https://ec.europa.eu/environment/nature/natura2000/management/docs/commission_note/commission_note_EN.pdf); EC (2012) Commission note on setting conservation objectives for Natura 2000 sites

(https://ec.europa.eu/environment/nature/natura2000/management/docs/commission_note/commission_note2_EN.pdf); EC (2013) Commission note on establishing conservation measures for Natura 2000 sites

(https://ec.europa.eu/environment/nature/natura2000/management/docs/commission_note/comNote%20conservation%20measures_EN.pdf); EC (2014) Establishing conservation measures for Natura 2000 Sites (<https://ec.europa.eu/environment/nature/natura2000/management/docs/conservation%20measures.pdf>)

on Natura 2000 have been organised by the Commission.⁶¹ Such trainings developed cover EU law on nature protection (site protection and species protection), principles of environmental law, EIA and Nature Directives,⁶² yet an overview of the number of participants in trainings and their effectiveness is not available.

The enforcement of the Nature Directives has been found to be a key action to progressing their implementation. The significant number of infringement cases indicate a high level of interest by citizens and MS (also indicating a weakness of MS in implementing the Directives). The array of actors involved in the implementation and use of Natura 2000 sites has led to enforcement difficulties for a range of activities (such as hunting, intensive agriculture and forestry, pollution from industry) and the compensation measures to address these impacts on achieving Natura 2000 site objectives. This is further exacerbated by the inadequate penalties often given to offenders,⁶³ whilst enforcement activities are often not comprehensively performed.⁶⁴ The Commission has produced a range of guidance documentation to assist MS in implementing Natura 2000 (including enforcement)⁶⁵, yet MS have been found to rarely utilise such documentation.⁶⁶ Despite these barriers to enforcement the EU 'pilot scheme' pre-infringement procedure has been noted as a significant drop in infringement proceedings through the elicited dialogue between the Commission and MS through the scheme.⁶⁷

Finally, a range of cross-cutting and sector specific stakeholder engagement activities have taken place are outlined under EQ2 and throughout the EU-added value and chapter 9 of this report. As a further example, the engagement activities under Target 4 provide a good illustration. Under the CFP, regionalisation was introduced to align measures adopted through delegated acts, in particular conservation measures needed to comply with obligations under EU environmental legislation.⁶⁸ This process applies to a range of instruments under the CFP, which must in turn take on board stakeholder views through designated Advisory Councils. Such councils provide key data, advice on socio-economic aspects, and broadly allow for a wide range of stakeholder views to be integrated throughout decision making processes. This includes decisions on biodiversity-related aspects such as choke species, discard plans, technical measures and general management strategies.⁶⁹

⁶¹ EC SWD (2015) 187 final, EU assessment of progress in implementing the EU Biodiversity Strategy to 2020, The mid-term review of the EU Biodiversity Strategy to 2020; EC (2020) EU Environmental Law Training Packages. Available at: https://ec.europa.eu/environment/legal/law/training_package.htm

⁶² EC (2020) EU Environmental Law Training Packages. Available at: https://ec.europa.eu/environment/legal/law/training_package.htm

⁶³ EC SWD (2016) 472 final, Fitness Check of the EU Nature Legislation (Birds and Habitats Directives)

⁶⁴ ECA (2017) Special Report No.1- More efforts needed to implement the Natura 2000 network to its full potential

⁶⁵ Including: EC (2000) Managing Natura 2000 sites – The provisions of Article 6 of the Habitats Directive 92/43/EEC (http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf); EC (2002) Assessment of plans and projects significantly affecting Natura 2000 sites – Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC (http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf); EC (2012) Guidance document on Article 6(4) of the Habitats Directive 92/43/EEC (http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/new_guidance_art6_4_en.pdf); EC (2014) Establishing conservation measures for Natura 2000 Sites (<https://ec.europa.eu/environment/nature/natura2000/management/docs/conservation%20measures.pdf>); EC (2018) Managing Natura 2000 sites- The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/EN_art_6_guide_jun_2019.pdf)

⁶⁶ ECA (2017) Special Report No.1- More efforts needed to implement the Natura 2000 network to its full potential

⁶⁷ ECA (2017) Special Report No.1- More efforts needed to implement the Natura 2000 network to its full potential

⁶⁸ Nikolic and Janiak (2017) EU framework for fisheries management measures in Natura 2000 sites. Available at: <https://ec.europa.eu/environment/nature/natura2000/platform/documents/1.1%20Introduction%20EC.pdf>

⁶⁹ EC SWD (2019) 205 final, The State of Play of the Common Fisheries Policy and Consultation on the Fishing Opportunities for 2020

Action 4: Improve and streamline monitoring and reporting**Box 4-5 Action 4 of the EU Biodiversity Strategy to 2020**

4a) The Commission, together with Member States, will develop by 2012 a new EU bird reporting system, further develop the reporting system under Article 17 of the EN 12 EN Habitats Directive and improve the flow, accessibility and relevance of Natura 2000 data.

4b) The Commission will create a dedicated ICT tool as part of the Biodiversity Information System for Europe to improve the availability and use of data by 2012.

Action 4 has been completed. Reporting under the Article 17 of the Habitats Directive and Article 12 of the Birds Directive have been streamlined, with national summaries produced by the EEA facilitating access to assessments at MS and EU-biogeographic level.⁷⁰ This is further complemented through the implementation of the BISE⁷¹, which acts as a centralised data hub on biodiversity in Europe to support the implementation of the Strategy. Data stemming from these reporting obligations and repositories have also allowed a greater insight as to where key information gaps lie for specific habitats and species. For example, the number of species with ‘unknown’ conservation status under the Habitats Directive have significantly decreased between reporting cycles. Notable knowledge gaps related to marine mammals and common or dispersed species (such as amphibians, bats and reptiles) under Article 17 continue to be regarded as prevalent.⁷² Despite the significant improvement in data availability and quality relating to the Nature Directives, a definitive overview of the progress made to fill biodiversity knowledge gaps is not possible.⁷³

Target 2 Maintain and restore ecosystems and their services**Box 4-6 Target 2 of the EU Biodiversity Strategy to 2020**

By 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15% of degraded ecosystems

Limited progress towards Target 2 has been achieved. Societal demand for ecosystem services has continued to increase since 2010, yet the potential for ecosystems to provide these services has declined within the same period.⁷⁴ As such, this combination of increased demand and reduced supply increases the risk of further ecosystem deterioration and the contribution of ecosystems to human well-being.

Regarding green infrastructure, Member State development of green infrastructure- specific strategies are lacking, despite numerous policies and legislative instruments addressing the concept of GI in documentation. Through MS initiatives (transnational and within the territory of a single Member State) green infrastructure has been deployed throughout the EU, yet often only at a small-scale.⁷⁵

⁷⁰ EEA (2021) National summary dashboards- Birds and Habitats Directive Art.12. Available at: <https://www.eea.europa.eu/themes/biodiversity/state-of-nature-in-the-eu/article-12-national-summary-dashboards> ; EEA (2021) National summary dashboards - Habitats Directive Art.17. Available at: <https://www.eea.europa.eu/themes/biodiversity/state-of-nature-in-the-eu/article-17-national-summary-dashboards>

⁷¹ <https://biodiversity.europa.eu/>

⁷² EEA (2020) State of nature in the EU- Results from reporting under the nature directives 2013-2018

⁷³ EC SWD (2016) 472 final, Fitness Check of the EU Nature Legislation (Birds and Habitats Directives)

⁷⁴ MAES et al., (2020) Mapping and Assessment of Ecosystems and their Services: An EU ecosystem assessment

⁷⁵ EC COM (2019) 236 final, Review of progress on implementation of the EU green infrastructure strategy

Data on current ecosystem maintenance and restoration efforts implemented throughout the EU is incomplete, yet studies have indicated that current restoration activity is significantly below what would be required to fulfil policy objectives.⁷⁶ From the Eftec et al., 2017 study, it is estimated that between 2,850km² and 5,700 km² of habitat restoration is occurring annually in the EU,⁷⁷ whilst the restoration needs (areas reported as being in 'not good' condition⁷⁸) of Annex I habitats alone is estimated at between 167,000 km² to 263,000 km².⁷⁹ As such, it is clear that some progress has been made, but that the 15% restoration target was not achieved.

To complement the aforementioned data, the Eftec et al study gathered results from an online survey (the data presented above was obtained from other, various information sources), to estimate restoration activities per MAES habitat classification. The table below outlines the annual estimated restoration activities conducted since 2010, again indicating that restoration activities conducted were not sufficient to achieve the 15% target.

Table 4-2 Estimated ecosystem extent and annual restoration activities in EU-28

Ecosystem type	Ecosystem extent (km2)	Estimated annual restoration area since 2010 (km2)
Cropland	1,596,050	86
Grassland	500,566	550
Heathland and shrubland	181,814	330
Wetlands	98,003	1028
Rivers and lakes	2,048,000	387
Woodland and forest	1,596,961	883
Sparsely vegetated land	67,986	95
Urban	222,188	4

Source: Ecosystem type classification as per MAES. Ecosystem extent data taken from MAES et al., (2020) Mapping and Assessment of Ecosystems and their Services: An EU ecosystem assessment. Estimated annual restoration data taken from Eftec et al., (2017) Technical support in relation to the promotion of ecosystem restoration in the context of the EU biodiversity strategy to 2020, pp 56.

Note: Marine restoration data not included if eftec report (rather, coastal data is reported) and is therefore not presented here.

As shown in the table above, marine-based restoration activities are not included here (due to data gaps noted in the report). It is clear that significant activities related to restoration have been implemented under the EMFF,⁸⁰ yet an estimate of the restoration area is not available.

Action 5: Improve knowledge of ecosystems and their services in the EU **Box 4-7 Action 5 of the EU Biodiversity Strategy to 2020**

5) Member States, with the assistance of the Commission, will map and assess the state of ecosystems and their services in their national territory by 2014, assess the economic value of such services, and promote the integration of these values into accounting and reporting systems at EU and national level by 2020.

⁷⁶ Eftec et al., (2017) Technical support in relation to the promotion of ecosystem restoration in the context of the EU biodiversity strategy to 2020

⁷⁷ Eftec et al., (2017) Technical support in relation to the promotion of ecosystem restoration in the context of the EU biodiversity strategy to 2020

⁷⁸ EEA (2020) State of nature in the EU- Results from reporting under the nature directives 2013-2018

⁷⁹ EEA (2020) State of nature in the EU- Results from reporting under the nature directives 2013-2018

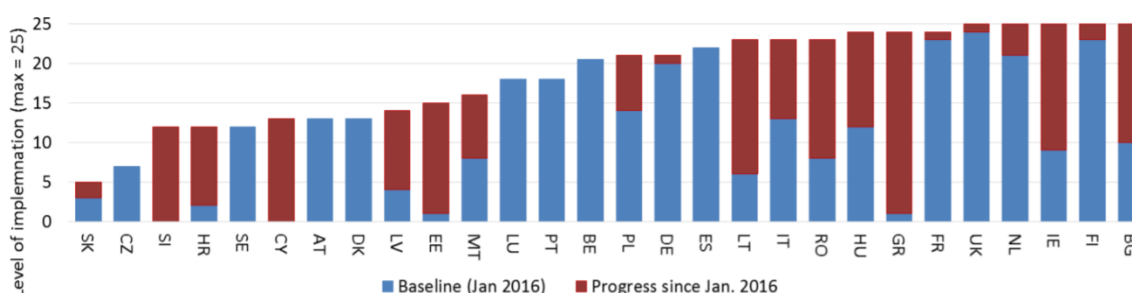
⁸⁰ EC (2020) FAME SU, EMFF implementation report 2019

Action 5 can be considered as completed. The latest information regarding Member States progress of mapping and assessing ecosystems and their services (MAES) shows that all Member States have carried out some MAES activities. These activities included:

- the establishment of an analytical framework and typology which assisted Member States in developing consistent approaches to map and assess ecosystems and their services;
- the development of indicators to map and assess biodiversity, ecosystem services and ecosystem conditions;
- analysis of available information to map and assess Europe's ecosystems (including urban ecosystems);
- providing a synthesis of links between pressures, ecosystem condition and ecosystem services;
- and,
- the development of an indicator framework to measure ecosystem changes.

Based on a methodology which gives Member States a maximum score of 25 when they have 'fully implemented' MAES activities, Figure 4-6 below shows that the majority of Member States have progressed such activities since 2016.

Figure 4-6 ESMERALDA MAES barometer, progress of Member States MAES activities- September 2019



Source: Taken from Burkhard, Campagne, and Maes (2019) Esmeralda/ MAIA MAES Barometer 2.0. Available at: [https://circabc.europa.eu/sd/a/34cfc2a1-eed3-40f1-9a2b-54d2f2790e45/04a New MAES Barometer BBurkhard MAES 180919.pdf](https://circabc.europa.eu/sd/a/34cfc2a1-eed3-40f1-9a2b-54d2f2790e45/04a%20New%20MAES%20Barometer%20BBurkhard%20MAES%20180919.pdf)

The first EU ecosystem assessment undertaken by the JRC, EEA, DG Environment and European Topic Centres on Biological Diversity and on Urban, Land and Soil Systems,⁸¹ presents an analysis of the pressures and conditions of ecosystems throughout the EU-27 plus the UK using a comparable methodological approach (an overview can be found in the 'Headline Target and cross-cutting section above). However, several important data gaps persist. This includes, inter alia, indicators on genetic diversity, soil biodiversity and pesticide use. In addition, time series data on agricultural intensification are lacking, resulting in challenges ascertaining the impacts of such practices on biodiversity and ecosystems surrounding agroecosystems. Furthermore, significant knowledge gaps in marine ecosystems exist, relating to anthropogenic impacts from chemicals, nutrient discharge, marine litter and underwater noise, in addition to habitat loss trends and biodiversity. Other knowledge gaps include data on drought/heat induced tree mortality, storm damage (forests), air pollutant concentrations and removal capacity of vegetation (urban), biophysical and ecosystem service data on wetlands, eutrophication from local pressures (heathlands and shrubs), climate change impacts on water quality, fish catches, invasive alien species, and biological quality elements (rivers and lakes).⁸²

⁸¹ Maes et al., (2020) Mapping and Assessment of Ecosystems and their Services: An EU ecosystem assessment

⁸² Maes et al., (2020) Mapping and Assessment of Ecosystems and their Services: An EU ecosystem assessment

A systematic review of Member States ecosystem valuation activities found that work currently conducted is still in its infancy in many Member States. Furthermore, the same study found that few clear examples exist of ecosystem valuation activities as part of national ecosystem/natural capital assessments being integrated within decision making processes within the respective country.⁸³ As such, identifying the impacts of Member States ecosystem valuation activities is not possible due to lack of reported evidence linking such activities to tangible biodiversity impacts.

Action 6: Set priorities to restore and promote the use of green infrastructure

Box 4-8 Action 6 of the EU Biodiversity Strategy to 2020

6a) By 2014, Member States, with the assistance of the Commission, will develop a strategic framework to set priorities for ecosystem restoration at sub-national, national and EU level.

6b) The Commission will develop a Green Infrastructure Strategy by 2012 to promote the deployment of green infrastructure in the EU in urban and rural areas, including through incentives to encourage up-front investments in green infrastructure projects and the maintenance of ecosystem services, for example through better targeted use of EU funding streams and Public Private Partnerships.

Limited progress towards Action 6 has been achieved. A critical element of Target 2 is the development of “Restoration Prioritisation Frameworks” (RPF) and PAFs. PAFs are strategic multiannual planning tools which aim to provide an overview of the measures required to implement the Natura 2000 network and its associated green infrastructure (GI), and are considered a pragmatic base for the establishment of RPFs to meet the overall goal of restoring 15% of degraded ecosystems.⁸⁴ RPFs allow Member States to define areas of restoration interventions whilst also allowing certain EU funds to be targeted for restoration activities. Contractors supporting the European Commission have produced technical documentation and guidance on RPFs,⁸⁵ yet the development of RPFs has been limited. Only two Member States have submitted Restoration Priority Frameworks to date (DE, NL), whilst other Member States have submitted some regional documents (BE) or established national RPF working groups (FI).⁸⁶ However, as outlined in the Germany case study (Appendix C), this did not result in on-the-ground implementation, largely due to the lack of legally binding legalisation meaning that Länder were not obliged to engage and commit resources (other barriers elaborated on under EQ 3). Restoration projects currently underway are generally in response to relevant EU or national legislation (e.g. the WFD and the MSFD).⁸⁷ As such, there is no evidence that the Strategy stimulated either an increase in restoration planning or an increase in restoration activities, but that this was largely driven by legal targets.

The Commission developed a Green Infrastructure Strategy in 2013,⁸⁸ and has developed numerous guidance documents for various policy areas, including regional and cohesion policies and flood

⁸³ Ling et al (2018) A review of ecosystem service valuation progress and approaches by the Member States of the European Union. UNEP-WCMC, Cambridge, UK.

⁸⁴ Milieu, IEEP and ICF (2016) Evaluation Study to support the Fitness Check of the Birds and Habitats Directives, Netherlands questionnaire submission. Available at: https://www.eerstekamer.nl/overig/20150911/ingevulde_vragenlijst_nederlandse/document3/f=/vjxfort43xr.pdf

⁸⁵ Lammerant et al., (2013) Implementation of 2020 EU Biodiversity Strategy: Priorities for the restoration of ecosystems and their services in the EU. Report to the European Commission. ARCADIS (in cooperation with ECNC and Eftec)

⁸⁶ CBD (2021) European Union Sixth National Report, Clearing House Mechanism of the Convention on Biological Diversity Information Submission Service. Available at: <https://chm.cbd.int/database/record?documentID=243509>

⁸⁷ EC SWD (2019) Review of progress on implementation of the EU green infrastructure strategy

⁸⁸ EC COM (2013) 249 final, Green Infrastructure (GI)- Enhancing Europe's Natural Capital.

prevention. The Biodiversity Information System for Europe (BISE)⁸⁹ has improved the level of information related to GI developments in Europe through providing a centralised data point. Furthermore, synergies are being developed between BISE and other relevant information platforms (such as Climate-adapt, WISE, OPPLA). However, limited evidence could be located that such activities have increased GI protection or resulted in increased implementation at scale.

Members States could apply for funding towards GI projects through the five European Structural and Investment Funds, namely: the Cohesion Fund, European Social Fund, European Regional Development Fund, European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund. Funding is managed through shared management, meaning Member States can decide whether GI measures are utilised within partnership agreements or operational programmes, whilst the reporting format used to show contributions from EU funds doesn't allow for the isolation GI-relevant measure spending. As such, ascertaining a precise overview of EU fund contribution to GI implementation is not possible.⁹⁰ Despite this, the number of projects which feature green infrastructure implementation to address cross-policy objectives (i.e. not only aiming at enhancing biodiversity, but also encompassing flood mitigation and energy efficiency) is estimated as not been fully utilised.⁹¹

Action 7: Ensure no net loss of biodiversity and ecosystem services **Box 4-9 Action 7 of the EU Biodiversity Strategy to 2020**

7a) In collaboration with the Member States, the Commission will develop a methodology for assessing the impact of EU funded projects, plans and programmes on biodiversity by 2014.

7b) The Commission will carry out further work with a view to proposing by 2015 an initiative to ensure there is no net loss of ecosystems and their services (e.g. through compensation or offsetting schemes).

Limited progress towards Action 7 has been achieved. The Commission has developed guidance on biodiversity proofing for all relevant EU funds,⁹² which allowed a standardised approach to be applied to EU funds by MS. Under Action 7b, the Commission established a working group and conducted a number of studies on options for ensuring no net loss from the unavoidable residual impacts of damaging projects, in accordance with the mitigation hierarchy (i.e. avoid-reduce-restore-compensate). This focussed on projects that did not affect Natura 2000 sites, and are therefore not covered by Habitats Directive Article 6(4) requirements for compensatory measures. The studies and NNL working group concluded that biodiversity offsetting, would be required to achieve no net loss, and should be applied to all sectors (including agriculture).⁹³

Following an impact assessment study to support a possible NNL initiative in 2016, no further policy developments have since taken place. The initiative faced a number of challenges, including mistrust from some stakeholders groups regarding the proper application of the mitigation hierarchy (seeing

⁸⁹ BISE (2021) Green infrastructure- Biodiversity Information System for Europe. Available at:

<https://biodiversity.europa.eu/green-infrastructure>

⁹⁰ EEA (2017) Green Infrastructure and Flood Management, Promoting cost-efficient flood risk reduction via green infrastructure solutions

⁹¹ EY and Biotopie (2017) Study on biodiversity financing and tracking biodiversity-related expenditures in the EU budget; EC COM (2019) 236 final, Review of progress on implementation of the EU green infrastructure strategy

⁹² EC (n.d.) Common Framework and Guidance Documents for Biodiversity proofing of the EU budget. Available at: <https://ec.europa.eu/environment/nature/biodiversity/comm2006/proofing.htm>

⁹³ See: EC (n.d.) No Net Loss. Available at:

https://ec.europa.eu/environment/nature/biodiversity/nnl/index_en.htm

biodiversity offsetting as a “licence to trash”),⁹⁴ on the one hand, and concerns by other stakeholder groups that a NNL approach would impose further burden on economic activities, on the other. These were highlighted in the online public consultation carried out on the NNL policy options where 44% of the respondents were opposed to the introduction of offsetting/compensation measures for unavoidable damage to ordinary biodiversity.⁹⁵ However, the Commission has published guidance on achieving no net loss of biodiversity and ecosystem services, which encompasses all stages of the mitigation hierarchy.⁹⁶

Target 3 Increase the contribution of agriculture and forestry to maintain and enhancing biodiversity

Target 3A - Agriculture

Box 4-10 Target 3A of the EU Biodiversity Strategy to 2020

By 2020, maximise areas under agriculture across grasslands, arable land and permanent crops that are covered by biodiversity-related measures under the CAP so as to ensure the conservation of biodiversity and to bring about a measurable improvement(*) in the conservation status of species and habitats that depend on or are affected by agriculture and in the provision of ecosystem services as compared to the EU2010 Baseline, thus contributing to enhance sustainable management.

(*) Improvement is to be measured against the quantified enhancement targets for the conservation status of species and habitats of EU interest in Target 1 and the restoration of degraded ecosystems under target 2.

Limited progress towards Target 3A has been achieved. A study for the European Commission⁹⁷ to support the evaluation of the impacts of the CAP on biodiversity concluded that the CAP measures in interaction with other biodiversity-related instruments are highly dependent on Member States’ implementation choices and priorities to support biodiversity in agroecosystems, or to counteract negative impacts on biodiversity from agriculture. A special report of the European Court of Auditors concluded that the CAP support had not halted the decline of biodiversity on farmland, despite some instruments having the potential to achieve positive biodiversity outcomes.⁹⁸

The actions to deliver Target 3a included mainstreaming biodiversity in the agriculture funding of the CAP in the 2014 to 2020 period, through enhancing direct payments for environmental public goods, improving the GAEC (Good Agricultural and Environmental Conditions) cross-compliance standards, better targeting Rural Development to biodiversity conservation, and integrating quantified indicators of biodiversity. It also aimed to conserve Europe’s agricultural genetic diversity.

The CAP 2013 direct payments regulation applied mandatory greening measures to 30% of direct payments with the objective of delivering environmental public goods, particularly through Ecological Focus Areas (EFAs). The greening amendments (June 2017) introduced a pesticide ban on certain EFAs including nitrogen-fixing crops and cover crops to improve their effectiveness for biodiversity. In cross compliance, GAEC7 included avoidance of damaging operations during bird breeding and rearing season whilst MS could choose the scope of their landscape features protection and whether to include requirements to control invasive alien species. GAEC1 made buffer strips of minimum 1 meter to

⁹⁴ Rayment et al (2018) Valuing biodiversity and reversing its decline by 2030, IEEP policy paper.

⁹⁵ EC (2014) No Net Loss Open Public Consultation Summary Report. Available at:

https://ec.europa.eu/environment/nature/biodiversity/nnl/results_en.htm

⁹⁶ Tucker et al (2020) <https://ec.europa.eu/environment/nature/biodiversity/nnl/pdf/NNL%20Guidance%20-%20July%202020%20-%20Final.pdf>

⁹⁷ Alliance Environnement et al., (2019) Evaluation of the impact of the CAP on habitats, landscapes, biodiversity

⁹⁸ ECA (2020) Special Report No.13, Biodiversity on farmland: CAP contribution has not halted the decline,

protect water courses and bodies compulsory and MS could choose to require compulsory buffer strips of up to 10 meter, ban herbicide use, and various other options. However, no other requirements of the WFD were included in cross-compliance. The Rural Development Regulation (2013) included focus area 4A for MS to programme measures dedicated to biodiversity, including Natura 2000, with a mandatory 30% spend on environmental measures. Support for **agricultural genetic resources** was mainstreamed into the CAP in 2014-2020 through a dedicated sub measure (M10.2) which all Member States implemented (ENRD, 2015⁹⁹). The regulation required Member States to take account of national needs for biodiversity conservation and the Natura 2000 network, as well as relevant national policies such as a national biodiversity Strategy or action plan. The common farmland birds index and the conservation status of grassland habitats (as reported under the Habitats Directive reporting) were included as context and impact indicators for biodiversity. To aid Member State programming, the Commission published the Guidance document "Farming for Natura 2000" in 2014¹⁰⁰ and guidance on biodiversity proofing the CAP funds also in 2014.¹⁰¹

A study commissioned by the European Commission to support the evaluation of the impacts of CAP measures on biodiversity¹⁰² concluded that the CAP measures in interaction with other biodiversity-related instruments are highly dependent on Member States' implementation choices and priorities to support biodiversity in agroecosystems or to counteract the impacts on biodiversity from agriculture. However, it concluded that some targeted agri-environment-climate measures (AECM) have demonstrated benefits for biodiversity.¹⁰³ Agri-environment measures in 2014-2020 were planned to reach around 17% of UAA; however, it is not possible to say how much of this is directly benefiting biodiversity, as the options available to farmers vary greatly from broad horizontal measures aimed mainly at environmental goals such as water quality and climate mitigation, to targeted measures for specific habitats and species. Only 2.1% of arable farmland is influenced by uptake of AECM schemes creating or maintaining ecological features (e.g. field margins, buffer areas, flower strips, hedges, trees) and only 5.1% has schemes to reduce fertiliser and pesticide use. Furthermore, 11.6% of arable land is estimated to be covered by practices which include the maintenance of high nature value arable and grassland systems, the introduction of extensive grazing practices, or the conversion of arable land to grassland. Research findings show that it is likely that the uptake area would have to be significantly larger to have a more significant impact on biodiversity trends on arable farmland.¹⁰⁴

CAP support for agricultural genetic diversity resulted in conservation of rare breeds and crop varieties in some Member States - a study¹⁰⁵ showed that more than two-thirds of the national populations of local breeds (i.e. breeds reported only from one country) which received public financial support showed increasing demographic trends in the last two decades (to 2015), versus only half of those that did not receive support. Overall, the greening requirements implemented under the CAP resulted in limited changes in farm management practices and land use, but some biodiversity benefits on arable

⁹⁹ ENRD (2015) RDP analysis: Support to environment & climate change. M10.2 Support to genetic resources in agriculture. https://enrd.ec.europa.eu/sites/enrd/files/rdp_analysis_m10-2.pdf

¹⁰⁰ EC (2014) Farming for Natura 2000 Guidance on how to support Natura 2000 farming systems to achieve conservation objectives, based on Member States good practice experiences

¹⁰¹ Polakova et al., (2014) Common Framework for Biodiversity-Proofing of the EU Budget: Guidance for Cohesion Policy Funds. Report to the European Commission, Institute for European Environmental Policy

¹⁰² Alliance Environnement et al., (2019) Evaluation of the impact of the CAP on habitats, landscapes, biodiversity

¹⁰³ Alliance Environnement et al., (2019) Evaluation of the impact of the CAP on habitats, landscapes, biodiversity

¹⁰⁴ Alliance Environnement et al., (2019) Evaluation of the impact of the CAP on habitats, landscapes, biodiversity

¹⁰⁵ Alliance Environnement et al., (2019) Evaluation of the impact of the CAP on habitats, landscapes, biodiversity

farmland were expected at the local level.¹⁰⁶ As such, greening appears not to have raised the environmental awareness of farmers.¹⁰⁷

The indicators of biodiversity trends on farmland show downward trends.¹⁰⁸ Of particular importance is the status and trends of habitats protected under the Habitats Directive. The latest reports on these from Member States indicate that most were in poor or bad status (81.7%)¹⁰⁹. Semi-natural habitats depending on agriculture, such as grasslands, are particularly threatened, as 45% have a bad status, compared to 31% for others. Furthermore, whilst some improvements have occurred at a national level, including as a result of CAP RDP measures, deteriorating trends are predominant. Thus, only 8% of agricultural habitat assessments revealed improvements, whereas 45% were deteriorating. The declines since 2010 in common farmland bird populations and grassland butterflies are indicative of widespread declines that are likely to have affected many agricultural species groups¹¹⁰.

A variety of agriculture- related pressures and threats hinder the conservation of biodiversity outside farmland, such as agricultural diffuse pollution in surface waters.¹¹¹ Chemicals including pesticides are noted as a significant pressure in 38% of surface water bodies in the EU, hampering the attainment of good ecological status under the Water Framework Directive.¹¹² To illustrate this point, an NGO stakeholder noted in interviews that the lack of pesticide use reporting within EU policy is a major hindrance to aligning environmental objectives, as currently only sales data can be used as a proxy. Agriculture is also the main source of nitrogen and phosphorus pollution, which has led to the eutrophication of freshwater bodies and coastal waters. Intensive livestock production is the main source of ammonia emissions that cause nitrogen deposition and the eutrophication of sensitive ecosystems. Although emission levels have decreased over recent decades, nitrogen deposition remains above critical levels that cause eutrophication in over 73% of the EU-28 ecosystem area.¹¹³ It is likely that continued biodiversity loss is linked due to, inter alia, enhanced nitrogen deposition, whilst exceedance of critical loads for nutrient nitrogen can result in reduced plant species richness across a range of European ecosystems.¹¹⁴ Furthermore, the continued trend of increased agricultural intensification and specialisation throughout the EU is one of the main causes of fragmentation and degradation of natural and semi-natural ecosystems- a primary driver of biodiversity loss.¹¹⁵

Target 3B

Box 4-11 Target 3B of the EU Biodiversity Strategy to 2020

Forests: By 2020, Forest Management Plans or equivalent instruments, in line with Sustainable Forest Management (SFM), are in place for all forests that are publicly owned and for forest holdings above a certain

¹⁰⁶ for example by halting the declining trend in fallow in MS where it was an ecological focus area (EFA) option, and helping to maintain multi-year alfalfa area in Spain, both of which are field uses which benefit threatened species such as Montagu's Harrier *Circus pygargus*. Alliance Environnement and Thunen Institute (2017) Evaluation study of the payment for agricultural practices beneficial for the climate and the environment

¹⁰⁷ Alliance Environnement and Thunen Institute (2017) Evaluation study of the payment for agricultural practices beneficial for the climate and the environment

¹⁰⁸ Maes et al., (2020) Mapping and Assessment of Ecosystems and their Services: An EU ecosystem assessment

¹⁰⁹ EEA (2020) State of nature in the EU- Results from reporting under the nature directives 2013-2018

¹¹⁰ <https://www.eea.europa.eu/data-and-maps/indicators/abundance-and-distribution-of-selected-species-8/assessment-1>

¹¹¹ EEA (2019) The European Environment - state and outlook 2020 (SOER 2020). Knowledge for transition to a sustainable future.

¹¹² EEA (2019) The European Environment - state and outlook 2020 (SOER 2020). Knowledge for transition to a sustainable future.

¹¹³ Maes et al., (2020) Mapping and Assessment of Ecosystems and their Services: An EU ecosystem assessment

¹¹⁴ de Vries et al., (2011) Nitrogen as a threat to European terrestrial biodiversity. *The European nitrogen assessment: sources, effects and policy perspectives*, 436-494.

¹¹⁵ EEA (2019) The European Environment - state and outlook 2020 (SOER 2020). Knowledge for transition to a sustainable future.

size** (to be defined by the Member States or regions and communicated in their Rural Development Programmes) that receive funding under the EU Rural Development Policy so as to bring about a measurable improvement(*) in the conservation status of species and habitats that depend on or are affected by forestry and in the provision of related ecosystem services as compared to the EU 2010 Baseline.

(*) Improvement is to be measured against the quantified enhancement targets for the conservation status of species and habitats of EU interest in Target 1 and the restoration of degraded ecosystems under target 2.

(**) For smaller forest holdings, Member States may provide additional incentives to encourage the adoption of Management Plans or equivalent instruments that are in line with SFM.

Limited progress towards Target 3B has been achieved. The EU Forest Strategy (2013) set objectives to ensure that all forests across the EU are managed according to sustainable forest management (SFM) principles by 2020, with development of objective, ambitious and demonstrable sustainable forest management (SFM) criteria, in close cooperation with Member States and stakeholders. In the action plan, the Commission Services committed to develop a Forest Information System for Europe (FISE) including information on forests and natural disturbances, forests and the bioeconomy, forests and climate change and forest and ecosystem services. However, the commitment fell short of explicitly incorporating information on the status of biodiversity. The European Commission's progress report on the EU Forest Strategy in 2018 concluded that the Strategy made significant progress towards its 2020 objectives, but in relation to the EU Biodiversity policy, implementation remains a major challenge.¹¹⁶ It concluded that further efforts are needed to enhance the role of forest management plans in achieving biodiversity targets and support the provision of ecosystem services. For example, the implementation of the Biological Diversity Act in Bulgaria requires that forest management plans are subject to a compliance assessment with Natura 2000 guidance, undertaken by the Ministry of Environment and Waters.¹¹⁷ However, the assessment of progress in implementing the EU Forest Strategy in 2019 stated that an overview of the status of forest management plans throughout Europe is lacking, as is an analysis of the extent of biodiversity measures included in such plans.¹¹⁸ An analysis of the implementation challenges of Natura 2000 in forests concluded that designation has triggered substantial policy and management conflicts in forests, and there is still a significant need to strengthen incentive-based conservation instruments for forest management for biodiversity, including compensation payments in Natura 2000.¹¹⁹

The CAP forest measures are a key instrument for mainstreaming sustainable forest management planning, as the existence of such plans is a prerequisite for funding for forests above a certain size (as defined by Member States). However, the evaluation of forestry measures concluded that it was difficult to assess the support provided by the forest measures to support sustainable forest management plans¹²⁰, due to the differences between Member States in their approach to such plans and the lack of information on implementation. Although managing authorities were required to take account of the Prioritised Action Framework (PAF) requirements for forest Natura 2000 sites in their rural development programme planning, the 2013 PAFs did not generally go beyond Natura 2000 sites to specify detailed forestry conservation measures beyond the network, which could inform CAP funded

¹¹⁶ EC COM (2018) 811 final, Progress in the implementation of the EU Forest Strategy 'A new EU Forest Strategy: for forests and the forest sector'

¹¹⁷ Alliance Environnement and EFI (2017) Evaluation study of the forestry measures under Rural Development

¹¹⁸ EFI et al., (2019) Study on progress in implementing the EU Forest Strategy

¹¹⁹ Sotirov (2017) Natura 2000 and forests: Assessing the state of implementation and effectiveness

¹²⁰ Alliance Environnement and EFI (2017) Evaluation study of the forestry measures under Rural Development

scheme requirements.¹²¹ Both a comparison of the 2014 PAFs and RDPs and the evaluation of the forest measures concluded that forest-investments are not widely used to improve forest biodiversity or are not clearly linked to the conservation of the habitat types and species of Community interest identified in the PAFs.¹²² More broadly, the impact of the CAP forest measures on mainstreaming of sustainable forest management planning for biodiversity is limited by the fact that so few Member States have programmed the measures for biodiversity objectives.

It is estimated that 75% of Europe's forests are covered by a management plan, whilst 25 out of 30 reporting countries (reporting to Forest Europe) have issued a national report on the status of sustainable forest management (SFM).¹²³ The degree to which such SFMs include biodiversity measures with beneficial impacts is unknown at the EU level, with the most recent study indicating that biodiversity measures included in such plans are often deemed 'unsatisfactory' in regards to protecting forests and biodiversity from the effects of adversities.¹²⁴

Tree species diversity and forest expansion is steadily increasing in the EU, whilst common forest bird species remain in stable conditions overall.¹²⁵ Deadwood volumes (one factor affecting biodiversity) are also increasing,¹²⁶ representing approximately 7% of the growing stock¹²⁷, but generally remain below desirable threshold levels for biodiversity in mixed-montane forests, boreal coniferous forests, mixed-montane forests, and lowland oak-beech forests.¹²⁸ Furthermore, a significant majority of Habitats Directive Annex 1 listed forest habitats are recorded as being in 'bad' or 'poor' status in the EU (85%).¹²⁹ Defoliation rates show increasing trends, indicating poor tree health, which is aligned with the increasing of various pressures exerted on forest ecosystems.¹³⁰ Since 2010, pressure indicators which have shown a significant upward trend include: tree cover loss; burnt areas; annual rainfall; annual temperature and extreme droughts (and subsequent impacts on forest productivity).¹³¹ A major challenge which can continue to exacerbate forest pressures relates to use of forests as a source of renewable energy, which can lead to contrasting impacts on carbon emission savings, biodiversity impacts and impacts on ecosystem condition, depending on the pathway taken (logging residues, afforestation, conversion to plantation) for the provision of biomass.¹³²

The following Actions analysed here relate to both components (Target 3A and 3B) of Target 3, and are presented in chronological order.

Action 8: Enhance direct payments for environmental public goods in the EU Common Agricultural Policy

Box 4-12 Action 8 of the EU Biodiversity Strategy to 2020

8a) The Commission will propose that CAP direct payments will reward the delivery of environmental public goods that go beyond cross-compliance (e.g. permanent pasture, green cover, crop rotation, ecological set-aside, Natura 2000).

¹²¹ Alliance Environnement and EFI (2017) Evaluation study of the forestry measures under Rural Development

¹²² Alliance Environnement and EFI (2017) Evaluation study of the forestry measures under Rural Development

¹²³ Forest Europe (2020) State of Europe's Forests 2020

¹²⁴ European Committee of the Regions (2018) Sustainable Forest Management in the Regions.

¹²⁵ Forest Europe (2020) State of Europe's Forests 2020

¹²⁶ MAES et al., (2020) Mapping and Assessment of Ecosystems and their Services: An EU ecosystem assessment

¹²⁷ Forest Europe (2020) State of Europe's Forests 2020

¹²⁸ Muller and Butler (2010) A review of habitat thresholds for dead wood: a baseline for management recommendations in European forests

¹²⁹ EEA (2020) State of nature in the EU- Results from reporting under the nature directives 2013-2018

¹³⁰ Forest Europe (2020) State of Europe's Forests 2020

¹³¹ MAES et al., (2020) Mapping and Assessment of Ecosystems and their Services: An EU ecosystem assessment

¹³² Camia et al., (2021) The use of woody biomass for energy purposes in the EU,

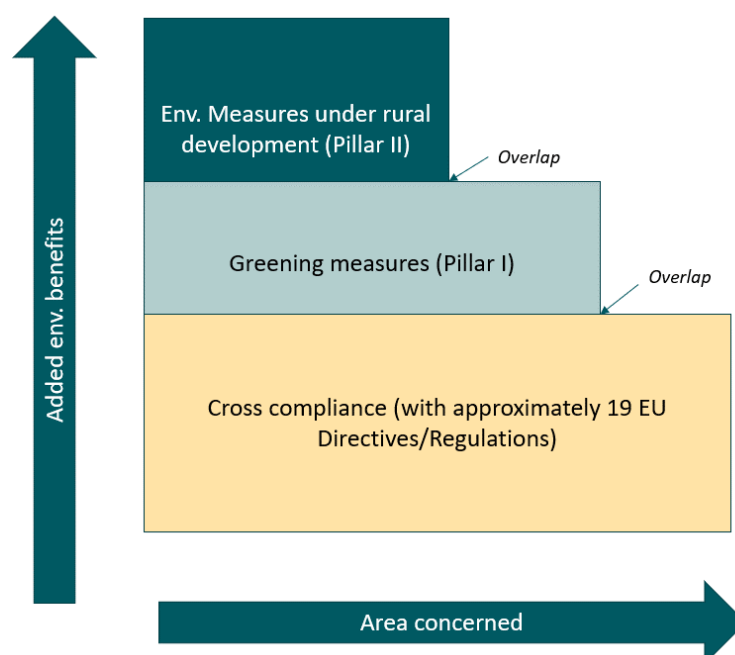
8b) The Commission will propose to improve and simplify the GAEC (Good Agricultural and Environmental Conditions) cross-compliance standards and consider including the Water Framework Directive within the scope of cross compliance once the Directive has been implemented and the operational obligations for farmers have been identified in order to improve the state of aquatic ecosystems in rural areas.

Limited progress towards Action 8 has been achieved.

The current CAP includes three main layers:

1. cross compliance, which has been simplified and more targeted, represents the compulsory basic layer of environmental requirements and obligations to be met in order to receive full CAP funding;
2. On top of this, since 2015 the CAP has introduced the Green Direct Payment, which takes about 30% of the direct payments budget; the greening practices "ecological focus area" and the "protection of sensitive and valuable permanent grasslands" which have positive effects on biodiversity.
3. Building on these two compulsory elements, the third element, support under rural development, continues to play a pivotal role in achieving the CAP's environmental objectives including biodiversity and in combating climate change through a wide range of measures which offer flexibility to the Member States to encourage sustainable agriculture as shown in Figure 4-7.

Figure 4-7 CAP instruments linked to the EU Biodiversity Strategy to 2020



Source: Adapted from ECA (2017) Special Report No 21, *Greening: a more complex income support scheme, not yet environmentally effective*

The 2011 proposal of the reform of the CAP 2014-2020 included an objective to enhance the “environmental performance through a mandatory ‘greening’ component of direct payments which will support agricultural practices beneficial for the climate and the environment”,¹³³ which were subsequently introduced in the 2013 reform of the CAP.

¹³³ EC COM (2011) 625 final, Proposal for a Regulation of the European Parliament and of the Council establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy, pg 16.

The greening instrument has not supported biodiversity as efficiently as it could have, because Member States have taken widely different approaches, which did not fully realise the potential of this instrument.¹³⁴ This is the case in particular for the designation of ESPG, with some designating only a small proportion of the relevant grassland. The efficiency with which the EFA requirement secured benefits to biodiversity is also reduced by the very high proportion of catch crops in declared hectares, which have very little benefit to biodiversity, and nitrogen-fixing crops, which offer fewer benefits than other EFA options such as fallow and landscape features.¹³⁵ However the ban of pesticides use on these productive area since 2018 represents a significant positive step to improving greening performance.¹³⁶

However, greening payments have been found to lack a clearly defined developed intervention logic to link the delivery of environment/climate-related measures to respective targets and budgetary lines.¹³⁷ As such, the contribution of greening measures to achieving biodiversity targets is unclear,¹³⁸ and greening architecture and implementation is insufficient to reverse negative environmental trends due to the level of exemptions, low environmental requirements for measures, lack of management criteria, and ineffective options as part of Ecological Focus Areas (EFA) (a greening measure which requires farms greater than 15 hectares to maintain 5% of the land as an EFA).¹³⁹

Through statutory management requirements (SMRs- EU rules on farmers irrespective of receiving CAP payments- rules encompass public, animal and plant health, animal welfare and the environment) and standards of good agricultural and environmental condition (GAEC- farmers receiving CAP support have to respect EU standards on good agricultural and environmental condition of land) under cross-compliance, farmers are encouraged to comply with sustainable agricultural practices. If farmers do not comply with EU legislative rules (including biodiversity), CAP payments received may be reduced. Cross-compliance helps raising farmers' awareness of biodiversity-related provisions, whilst the Farm Advisory System assist in applying such provisions at the farm-level.¹⁴⁰ Figure 4-8 outlines which of these elements have the potential to improve biodiversity. Despite certain elements having the potential to positively impact biodiversity, no specific impact indicators exist to measure the specific effects of these cross-compliance measures. Member State- specific studies have identified both positive and negative impacts of such measures.¹⁴¹

¹³⁴ ECA (2017) Special Report No 21, Greening: a more complex income support scheme, not yet environmentally effective, Replies of the Commission

¹³⁵ ECA (2017) Special Report No 21, Greening: a more complex income support scheme, not yet environmentally effective

¹³⁶ ECA (2017) Special Report No 21, Greening: a more complex income support scheme, not yet environmentally effective, Replies of the Commission

¹³⁷ ECA (2017) Special Report No 21, Greening: a more complex income support scheme, not yet environmentally effective

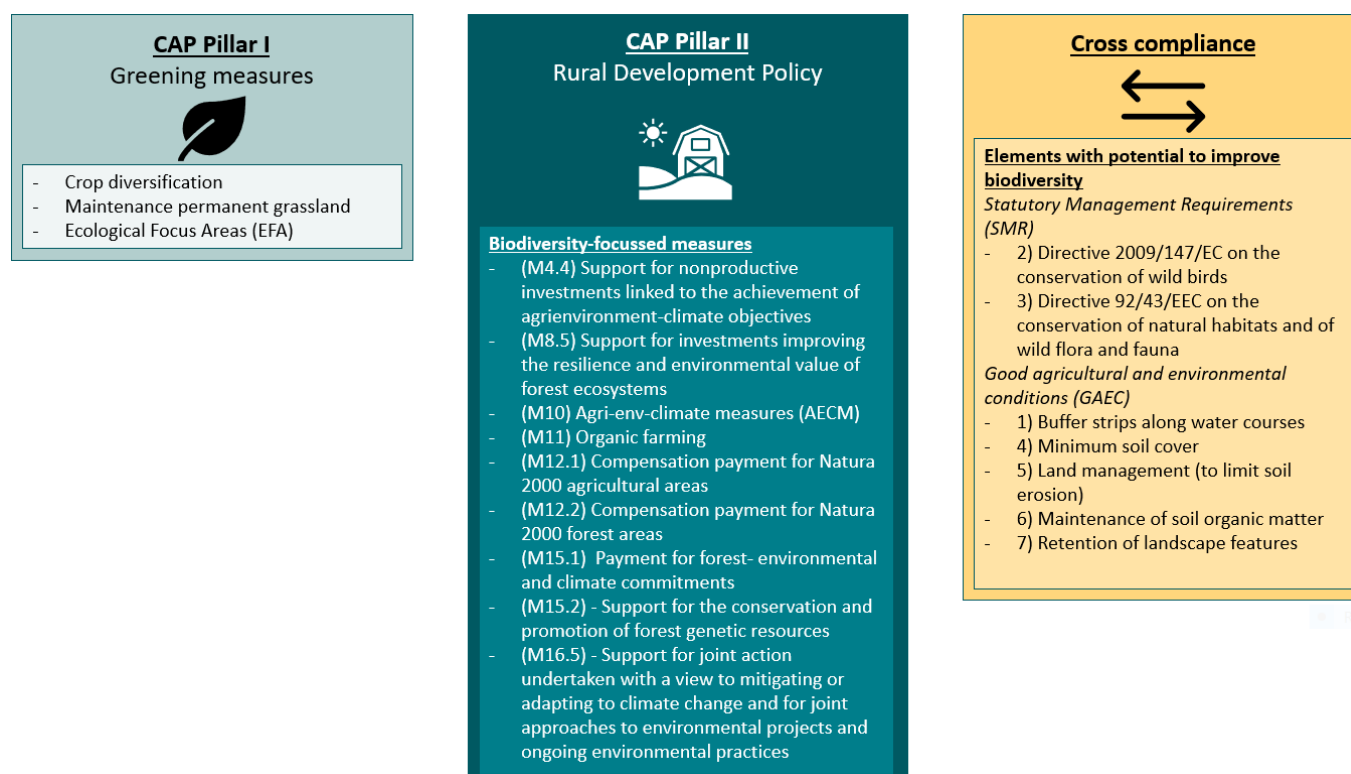
¹³⁸ ECA (2017) Special Report No 21, Greening: a more complex income support scheme, not yet environmentally effective

¹³⁹ Pe'er et al (2017). Is the CAP fit for purpose? An evidence-based fitness check assessment.

¹⁴⁰ ECA (2017) Special Report No 21, Greening: a more complex income support scheme, not yet environmentally effective, Replies of the Commission

¹⁴¹ ECA (2020) Special Report No.13, Biodiversity on farmland: CAP contribution has not halted the decline¹⁴² Panagos et al (2015) Modelling the effect of support practices (P-factor) on the reduction of soil erosion by water at European scale

Figure 4-8 Elements of CAP (2014-2020) with biodiversity-focussed measures/ the potential to improve biodiversity



Source: CAP Pillar II biodiversity- focussed measures taken from Alliance Environnement et al., (2019) Evaluation of the impact of the CAP on habitats, landscapes, biodiversity, Final Report pp 20-26. Cross compliance elements with potential to improve biodiversity taken from ECA (2020) Special Report No.13, Biodiversity on farmland: CAP contribution has not halted the decline, pp 28.

The relevance of cross compliance (SMRs and GAECs) and advisory measures have the potential to be relevant, but strongly depend on the way in which Member States implement them, including that choices underlying SMRs which are done outside the scope of the CAP.

A high degree of flexibility is designated to Member States to establish the parameters of GAECs (taking into account local conditions), whereas SMRs are rules derived from various EU and Member States' legislative texts which farmers must abide by to receive direct payments. Several reports have outlined the positive local and regional impacts of GAECs on soil properties (reduction in soil loss/erosion)^{142,143}, yet concrete impacts of these GAECs on biodiversity are not well documented.¹⁴⁴ Similarly, examples of biodiversity impacts of SMR are lacking and their additionality to what is already mandatory is uncertain.¹⁴⁵ To summarise, evidence suggests that the combined effects of CAP are insufficient to counteract the pressures on biodiversity from agriculture in semi-natural and more intensively-managed farmland,¹⁴⁶ despite raised awareness (farmers and the public) of the impacts of measures on biodiversity.^{147,148}

¹⁴² Panagos et al (2015) Modelling the effect of support practices (P-factor) on the reduction of soil erosion by water at European scale

¹⁴³ Borrelli et al (2016) Effect of Good Agricultural and Environmental Conditions on erosion and soil organic carbon balance: A national case study.

¹⁴⁴ Pe'er et al (2017). Is the CAP fit for purpose? An evidence-based fitness check assessment.

¹⁴⁵ Alliance Environnement et al., (2019) Evaluation of the impact of the CAP on habitats, landscapes, biodiversity

¹⁴⁶ Alliance Environnement et al., (2019) Evaluation of the impact of the CAP on habitats, landscapes, biodiversity

¹⁴⁷ ECA (2014) Special Report No.4, Integration of EU water policy objectives with the CAP: a partial success

¹⁴⁸ Milieu, IEEP and ICF (2016) Evaluation Study to support the Fitness Check of the Birds and Habitats Directives

Action 9: Better target Rural Development to biodiversity conservation

Box 4-13 Action 9 of the EU Biodiversity Strategy to 2020

9a) The Commission and Member States will integrate quantified biodiversity targets into Rural Development strategies and programmes, tailoring action to regional and local needs.

9b) The Commission and Member States will establish mechanisms to facilitate collaboration among farmers and foresters to achieve continuity of landscape features, protection of genetic resources and other cooperation mechanisms to protect biodiversity.

Limited progress towards Action 9 has been achieved. Action 9a of the Strategy requires the Commission and Member States to integrate quantified biodiversity targets into Rural Development strategies and programmes. Out of the six rural development priorities, one is devoted to enhancing ecosystems whilst (priority 4) whilst another indirectly related to biodiversity (priority 1- knowledge transfer and innovation). Under these priorities, every rural development plan includes quantified targets related to the achievement of these objectives, which can encompass biodiversity (or biodiversity proxy) metrics. The latest data shows that approximately 15% of EU-27 utilised agricultural area is covered by biodiversity measures,¹⁴⁹ yet there are no common monitoring and evaluation framework (CMEF)¹⁵⁰ impact indicators which assesses the effect of rural development policy or the CAP on farmland biodiversity.^{151,152,153} In regards to Action 9b, various mechanisms to facilitate collaboration amongst farmers and foresters have been established such as EFAs through the CAP, in addition to a range of projects implemented through EIP-AGRI (such as the implementation for regenerative agriculture, providing biodiversity metrics to improve farm management, valuing ecosystem services relating to farm management, and stakeholder engagement activities regarding biodiversity management in agricultural landscapes).¹⁵⁴ However, collective approaches at scale of such measures are rarely implemented, and vary between Member States.¹⁵⁵ Studies have found that CAP effectiveness at delivering biodiversity benefits is hindered by the fragmentation of actors (i.e. farmers working to manage biodiversity at individual farm level) which often work in isolation.¹⁵⁶

Action 10: Conserve Europe's agricultural genetic diversity

Box 4-14 Action 10 of the EU Biodiversity Strategy to 2020

The Commission and Member States will encourage the uptake of agri-environmental measures to support genetic diversity in agriculture and explore the scope for developing a strategy for the conservation of genetic diversity.

Limited progress has been achieved towards Action 10. Current data on genetic diversity, such as through SEBI6,¹⁵⁷ lacks any recent updates resulting in challenges assessing recent trends. Furthermore, agri-environment indicators¹⁵⁸ developed by the Commission to track environmental aspects of the CAP

¹⁴⁹ Data extracted from the AgriData website:

https://agridata.ec.europa.eu/extensions/DashboardIndicators/Biodiversity.html?select=EU27_FLAG,1

¹⁵⁰ CMEF was established by the Commission to assess the performance of the CAP and improve its efficiency.

¹⁵¹ Alliance Environnement et al., (2019) Evaluation of the impact of the CAP on habitats, landscapes, biodiversity

¹⁵² ECA (2020) Biodiversity on farmland: CAP contribution has not halted the decline

¹⁵³ CBD (2021) European Union Sixth National Report, Clearing House Mechanism of the Convention on Biological Diversity Information Submission Service. Available at: <https://chm.cbd.int/database/record?documentID=243509>

¹⁵⁴ <https://ec.europa.eu/eip/agriculture/en/search/site/biodiversity?page=3>

¹⁵⁵ Pe'er et al (2017). Is the CAP fit for purpose? An evidence-based fitness check assessment.

¹⁵⁶ Leventon et al., (2017) Collaboration or fragmentation? Biodiversity management through the common agricultural policy

¹⁵⁷ EEA (2017) Livestock genetic diversity. Available at: <https://www.eea.europa.eu/data-and-maps/indicators/livestock-genetic-diversity/livestock-genetic-diversity-assessment-published>

¹⁵⁸ Eurostat (n.d.) Agri-environmental indicators. Available at: <https://ec.europa.eu/eurostat/web/agriculture/agri-environmental-indicators>

which directly (such as the indicator ‘genetic diversity’) or indirectly (high nature value) monitor genetic diversity do not have any published data. Therefore, establishing the extent to which agri-environmental measures to support genetic diversity in agriculture have been adopted and impacted genetic diversity is not possible. This is despite the inclusion of CAP objective related to the conservation of agricultural genetic resources, and the inclusion of activities which integrate endangered agricultural crops and breeds throughout the production chain.

Action 11: Encourage forest holders to protect and enhance forest biodiversity

Box 4-15 Action 11 of the EU Biodiversity Strategy to 2020

11a) Member States and the Commission will encourage the adoption of Management Plans, inter alia through use of rural development measures and the LIFE+ programme.

11b) Member States and the Commission will foster innovative mechanisms (e.g. Payments for Ecosystem Services) to finance the maintenance and restoration of ecosystem services provided by multifunctional forests.

Limited progress towards Action 11 has been achieved. The Rural Development Regulation is an integral financial resource for the implementation of the EU Strategy in forest ecosystems. The Regulation provides significant EU funding for forestry measures (approximately 90% of total EU funding is derived from the Rural Development Regulation),¹⁵⁹ including various measures to support sustainable forest management.¹⁶⁰ For example, measures of high relevance to the biodiversity (outlined in Figure 4-8) measure 8.5 (improving the resilience and environmental value of forest ecosystems) and measure 15.1 (management for environment and climate services and forest conservation) have been programmed into approximately 20% and 2% of total planned public expenditure respectively (EU-28).¹⁶¹ However, data which quantifies the impacts of these measures on forest biodiversity is currently not available,¹⁶² despite estimates that the impacts of these measures on biodiversity are likely insignificant due to low uptake.¹⁶³

Various innovative financing mechanisms for the maintenance and restoration of the ecosystem services of multifunctional forests have been established throughout Europe, and implemented in countries such as Finland, Germany and Sweden.¹⁶⁴ Furthermore, the Natural Capital financing facility has approved a project directly relevant to forests (Irish Sustainable Forest Fund- EIB financing €12 million), whilst 2 projects have been signed and are awaiting final approval (Athens Resilient City and Natural Capital- proposed EIB financing €5 million; Rewilding Europe- proposed EIB financing €6 million).¹⁶⁵ Mechanisms (such as Payments for Ecosystem Services) to finance the maintenance and restoration of ecosystem services provided by multifunctional forests are expected to be further developed¹⁶⁶ following the assessment method established under the MAES assessment.¹⁶⁷ Other examples of innovative finance mechanisms are provided in Box 4-16 below, yet despite these positive examples, projects have so far

¹⁵⁹ CBD (2021) European Union Sixth National Report, Clearing House Mechanism of the Convention on Biological Diversity Information Submission Service. Available at: <https://chm.cbd.int/database/record?documentID=243509>

¹⁶⁰ Alliance Environnement and EFI (2017) Evaluation study of the forestry measures under Rural Development

¹⁶¹ Alliance Environnement and EFI (2017) Evaluation study of the forestry measures under Rural Development

¹⁶² Alliance Environnement and EFI (2017) Evaluation study of the forestry measures under Rural Development

¹⁶³ Alliance Environnement et al., (2019) Evaluation of the impact of the CAP on habitats, landscapes, biodiversity

¹⁶⁴ Viszlai, Barredo, San-Miguel-Ayanz, (2016) Payments for Forest Ecosystem Services - SWOT Analysis and Possibilities for Implementation.

¹⁶⁵ European Investment Bank (2021) Project examples. Available at: <https://www.eib.org/en/products/mandates-partnerships/ncff/project-examples/index.htm>

¹⁶⁶ EFI et al., (2019) Study on progress in implementing the EU Forest Strategy, Final Report.

¹⁶⁷ Maes et al., (2018) Mapping and Assessment of Ecosystems and their Services: An analytical framework for ecosystem condition

been limited to small-scale ad-hoc trials demonstrating the feasibility of select instruments or showcasing good practice. In fact, Europe has been lagging behind other continents in PES implementation.¹⁶⁸ More work is needed to ensure a more systematic approach exploring how to implement and scale-up these different instruments and how they can work together to create effective policy mixes.¹⁶⁹

Box 4-16 Innovative finance mechanism of relevance to Action 11b.

Action 11 b) under Target 3 of the Strategy aims to foster innovative mechanisms to finance the maintenance and restoration of forest ecosystem services (FES). Although modest progress has been made towards this through a number of pioneering projects, key challenges remain in achieving their more widespread uptake.

Several initiatives and projects have trialled different innovation mechanisms for FES. For example, SLM Silva, an Irish sustainable forestry fund supported by the natural capital financing facility, aims to create alternative finance streams for FES.¹⁷⁰ Another good example are two Horizon 2020 projects, SINCERE and InnoForEst, which support the development of novel policy and business models to advance a variety of innovative mechanisms. These include reverse auction pilots for FES in Denmark and Belgium, financing for water-related services in Catalonia and the development of PES to support carbon sequestration and biodiversity in Czechia and Slovakia.^{171,172}

Most existing FES innovative mechanisms have been implemented at local scales by private or public bodies. The most common mechanism are PES (31%), followed by offset schemes (15%), and management contracts (10%). The majority, focus on regulating services such as carbon sequestration, biodiversity protection and water protection followed by cultural services such as leisure, health and spiritual benefits. These services are typically under-valued compared with provisioning services, like timber, which have a market value and can more easily generate income for forest owners.¹⁷³

Arguably, at their current scale, innovative mechanisms have failed to adequately address the under-valuation of regulating ecosystem services.¹⁷⁴ In fact, only 20% of forest ES have been linked to payments. This can be partially explained by the challenges of quantifying the value of these services. In addition, the delivery of FES happens on long time scales making the financing of some services challenging. This is especially tricky when attempting to implement results-based mechanisms where payments depend on the delivery of FES. Efforts towards target 11 b have been insufficient failing to create the right regulatory mechanisms and business models to tackle these challenges and attract finance for regulatory and cultural FES at scale.

¹⁶⁸ Wunder et al., (2019) DELIVERABLE 1.4 “What works?” State-of-the-art synthesis report about best-practice design and implementation of PES and other IM in the European context. H2020 project no.773702 RUR05-2017 European Commission, 66 pp

¹⁶⁹ Illes et al., (2017) Innovative mechanisms for financing biodiversity conservation: experiences from Europe, final report in the context of the project “Innovative financing mechanisms for biodiversity in Mexico / N°2015/368378”.

¹⁷⁰ SLM Silva (2020) SLM. Available at: <https://www.100percentsustainability.com/investments/slm>

¹⁷¹ Sincere Forests (n.d.) Innovating for forest ecosystem services. Available at: <https://sincereforests.eu/>

¹⁷² InnoForEST (2021) InnoForEst seeks to spark a transformation of the European forest sector by stimulating innovations for the sustainable supply and financing of forest ecosystem services. Available at: <https://innoforest.eu/>

¹⁷³ Sincere Forests (n.d.) Innovating for forest ecosystem services. Available at: <https://sincereforests.eu/>

¹⁷⁴ InnoForEST (2021) InnoForEst seeks to spark a transformation of the European forest sector by stimulating innovations for the sustainable supply and financing of forest ecosystem services. Available at: <https://innoforest.eu/>

Action 12: Integrate biodiversity measures in forest management plans**Box 4-17 Action 12 of the EU Biodiversity Strategy to 2020**

12) Member States will ensure that forest management plans or equivalent instruments include as many of the following measures as possible: - maintain optimal levels of deadwood, taking into account regional variations such as fire risk or potential insect outbreaks; - preserve wilderness areas; - ecosystem-based measures to increase the resilience of forests against fires as part of forest fire prevention schemes, in line with activities carried out in the European Forest Fire Information System (EFFIS); - specific measures developed for Natura 2000 forest sites; - ensuring that afforestation is carried out in accordance with the Pan-European Operational Level Guidelines for SFM, in particular as regards the diversity of species, and climate change adaptation needs.

Limited progress towards Action 12 has been achieved. In a survey of local and regional authorities (who represent approximately 14% of the total EU forest area), 76% of management plans were estimated to contain biodiversity considerations, yet the impacts of these measures were deemed 'unsatisfactory' in regards to protecting forest biodiversity.¹⁷⁵ In 2013, DG Environment launched a survey for EU Member States to garner an overview of planning tools used for forest management.¹⁷⁶ The survey identified a number of biodiversity measures integrated within forest management plans (deadwood management, Natura 2000 compatibility) yet the instruments indicated remain high-level and do not present explicit overviews of what biodiversity components are being managed, how they were identified, nor any impacts of the measures. Other studies have similar findings, where monitoring and evaluation mechanisms related to Natura 2000 forest sites (particularly in regards to Rural Development Programmes) are currently not adequate to monitor measures and their progress to achieving conservation objectives,¹⁷⁷ and that measures within forest management plans lack a holistic approach (and rather focus on a few species/habitats rather umbrella species/habitats) to managing biodiversity.¹⁷⁸ However, Natura 2000 measures developed in forest management plans are considered to have a positive effect on biodiversity, yet the long ecological timescales related with changes in biodiversity have led to a lack of concrete evidence on their impacts.¹⁷⁹

Target 4 Ensure the sustainable use of fisheries resources**Box 4-18 Target 4 of the EU Biodiversity Strategy to 2020**

Achieve Maximum Sustainable Yield (MSY) by 2015. Achieve a population age and size distribution indicative of a healthy stock, through fisheries management with no significant adverse impacts on other stocks, species and ecosystems, in support of achieving Good Environmental Status by 2020, as required under the Marine Strategy Framework Directive.

Target 4 has shown limited progress overall, as maximum sustainable yield (MSY) in all fish stocks has not been achieved, due to continued overfishing in the Mediterranean and Black Seas.^{180,181} However, it

¹⁷⁵ European Committee of the Regions (2018) Sustainable Forest Management in the Regions.

¹⁷⁶ EC (2013) Forest Management Plans or equivalent instruments, Summary of Member States' replies to the DG ENV questionnaire. Available at: https://ec.europa.eu/environment/forests/pdf/fmp_table.pdf

¹⁷⁷ Greenwood and Jump (2017) Effectiveness of Natura 2000 in forests in EU-28, pp 81-95, in (ed) Sotirov Natura 2000 and Forests - Assessing the State of Implementation and Effectiveness.

¹⁷⁸ NEPCon (2018) Study on implementing sustainable forest management according to the EU biodiversity strategy and the EU bioeconomy strategy

¹⁷⁹ Greenwood and Jump (2017) Effectiveness of Natura 2000 in forests in EU-28, pp 81-95, in (ed) Sotirov Natura 2000 and Forests - Assessing the State of Implementation and Effectiveness.

¹⁸⁰ EEA (2019) Marine messages II-Navigating the course towards clean, healthy and productive seas through implementation of an ecosystem-based approach. EEA Report No. 17/2019

¹⁸¹ EC SWD (2020) 61 final, Review of the status of the marine environment in the European Union Towards clean, healthy and productive oceans and seas- part 2

is important to outline here that (not) achieving MSY does not necessarily directly correlate with biodiversity impacts. Significant progress has been made in areas such as the Northeast Atlantic and Baltic Sea where 41% of assessed shellfish and fish stocks are within safe biological limits.¹⁸² The number of Total Allowable Catch (TAC) quotas set in line with the MSY has significantly increased in recent times, from 5 TACs in 2009 to 62 in 2020.¹⁸³

In order to achieve Good Environmental Status (GES) as part of the Marine Strategy Framework Directive (MSFD), a series of 11 descriptors are defined in addition to a set of criteria for Member States to assess the extent to which GES is being achieved. The table below outlines these descriptors.

Table 4-3 Descriptors under the MSFD

Descriptor	Overview of objective
1: Biodiversity	Biological diversity is maintained. The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climate conditions.
2: Non-indigenous species	Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystem.
3: Populations of commercial species	Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock.
4: Food web structure	All elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity.
5: Eutrophication	Human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algal blooms and oxygen deficiency in bottom waters.
6: Sea floor integrity	Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected.
7: Alterations to hydrography	Permanent alteration of hydrographical conditions does not adversely affect marine ecosystems.
8: Contaminants	Concentrations of contaminants are at levels not giving rise to pollution effects.
9: Sea food contaminants	Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards.
10: Marine litter	Properties and quantities of marine litter do not cause harm to the coastal and marine environment.
11: Energy and noise	Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment.

Source: Marine Strategy Framework Directive, 2008 (<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008L0056&from=EN>)

¹⁸² STECF (2020) Monitoring the performance of the Common Fisheries Policy (STECF-Adhoc-20-01), Scientific, Technical and Economic Committee for Fisheries (STECF)

¹⁸³ ECA (2020) Marine environment: EU protection is wide but not deep, Special Report No.26. Replies of the Commission- pg 2

In 2020, the Commission concluded that despite data inconsistencies¹⁸⁴ and missing reports from Member States¹⁸⁵, progress in reaching GES had not been implemented fast enough to cover all descriptors in all EU waters by 2020.¹⁸⁶ Difficulties in defining threshold values¹⁸⁷, inadequate alignment between MS programmes of measures and identified pressures were (inter alia) noted as hindrances to achieving GES.¹⁸⁸

Key pressures on the marine environment in relation to Target 4 include fisheries (overfishing and unsustainable fishing practices), seafloor damage, pollution, invasive species,¹⁸⁹ and underwater noise.¹⁹⁰ Each of these are briefly discussed below, whilst Figure 4-9 outlines the intensity of anthropogenic activities and pressures of Europe's seas (which includes pressures beyond those directly within the scope of Target 4- as outlined in the notes under the Figure). Descriptor 3 of the MSFD highlights that approximately 45% of assessed stocks do not meet (the two primary GES indicators- achieving (1) a fishing mortality and (2) a reproductive capacity compatible with having population biomass levels above those capable of producing MSY) GES indicators, despite significant differences between fishery regions.¹⁹¹ Bottom trawling is a key pressure on the marine ecosystem (particularly within the demersal zone), despite data showing that such activities may be in decline in some regions.¹⁹² However, comprehensive data on EU level trends of seafloor integrity is currently lacking, with estimates indicating that approximately 35% of the European shelf area has been disturbed by fisheries.¹⁹³ Policy measures under various EU legislation has led to the decrease in concentrations of harmful substances such as DDTs, PCBs, TBT (again, with regional differences),¹⁹⁴ whilst marine litter is present in all marine ecosystems- largely in the form of plastics originating from fisheries equipment, packaging, and unidentifiable items.¹⁹⁵ The trends and impacts of marine underwater noise are largely unassessed currently, yet various measures under the MSFD are currently in place to assess and mitigate underwater noise emissions.¹⁹⁶

¹⁸⁴ Between what is reported electronically and static text reports in MSFD reporting by MS

¹⁸⁵ MS programmes of measures reports submitted as part of Article 18 of the MSFD were not submitted by Bulgaria, Cyprus, Greece, Italy, Malta, and Portugal at the time of the publication of: EC COM (2020) 259 final, The implementation of the Marine Strategy Framework Directive (Directive 2008/56/EC)

¹⁸⁶ EC COM (2020) 259 final, The implementation of the Marine Strategy Framework Directive (Directive 2008/26/EC)

¹⁸⁷ A value or range of values that allows for an assessment of the quality level achieved for a particular criterion, thereby contributing to the assessment of the extent to which good environmental status is being achieved (Article 2(5) of Commission Decision (EU) 2017/848). Threshold values include an 'acceptable deviation' from the reference or pristine conditions. This allows for sustainable uses of the sea whereby some level of pressures can be accommodated, provided the overall quality of the environment is maintained (SWD(2020) 62).

¹⁸⁸ EC COM (2020) 259 final, The implementation of the Marine Strategy Framework Directive (Directive 2008/26/EC)

¹⁸⁹ ECA (2020) Marine environment: EU protection is wide but not deep, Special Report No.26. Replies of the Commission

¹⁹⁰ EEA (2019) Marine messages II-Navigating the course towards clean, healthy and productive seas through implementation of an ecosystem-based approach. EEA Report No. 17/2019

¹⁹¹ EEA (2019) Marine messages II-Navigating the course towards clean, healthy and productive seas through implementation of an ecosystem-based approach. EEA Report No. 17/2019

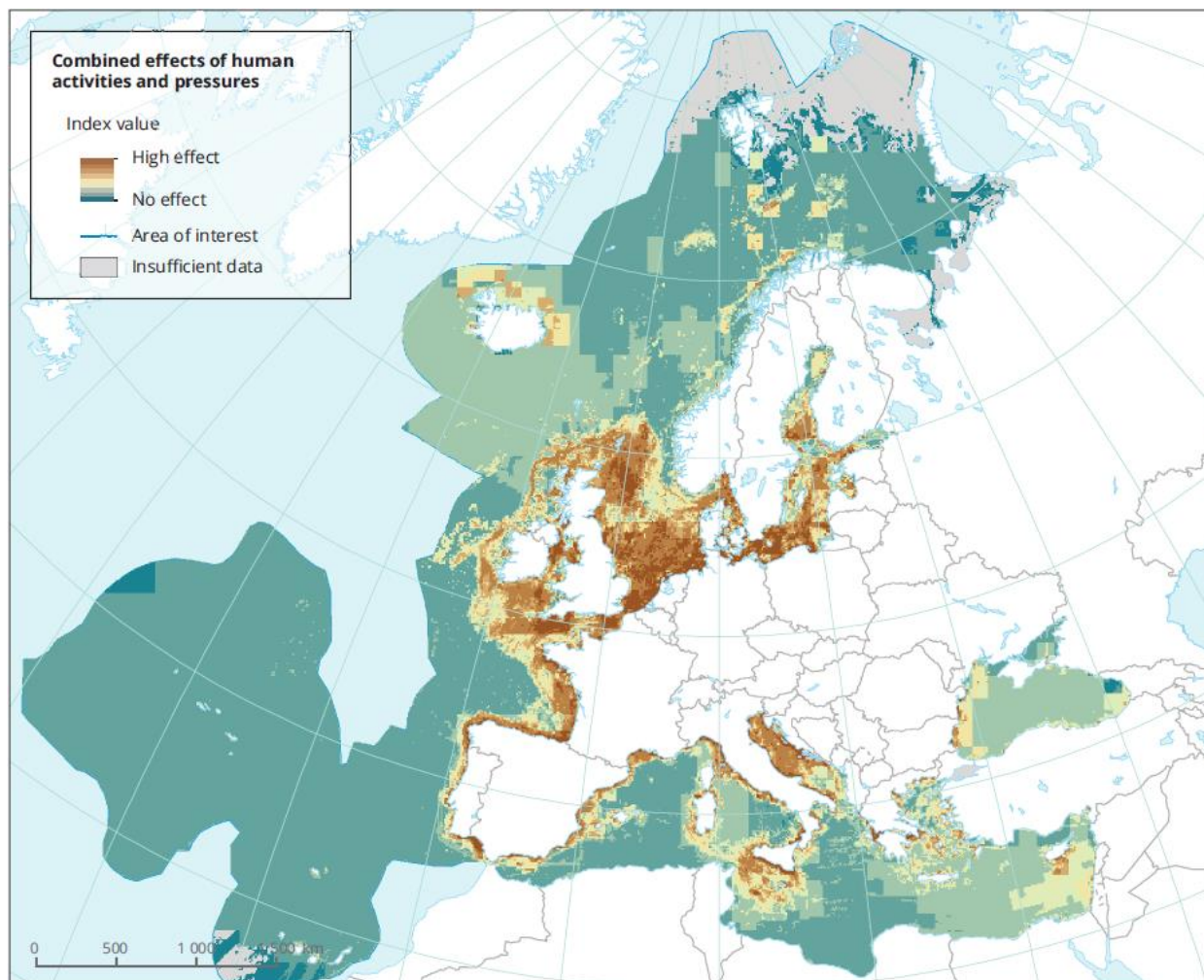
¹⁹² EC SWD (2020) 61 final, Review of the status of the marine environment in the European Union- Towards clean, healthy and productive oceans and seas- part 3

¹⁹³ EEA (2019) Marine messages II-Navigating the course towards clean, healthy and productive seas through implementation of an ecosystem-based approach. EEA Report No. 17/2019

¹⁹⁴ EC SWD (2020) 61 final, Review of the status of the marine environment in the European Union- Towards clean, healthy and productive oceans and seas- part 3

¹⁹⁵ EEA (2019) Marine messages II-Navigating the course towards clean, healthy and productive seas through implementation of an ecosystem-based approach. EEA Report No. 17/2019

¹⁹⁶ EC SWD (2020) 61 final, Review of the status of the marine environment in the European Union- Towards clean, healthy and productive oceans and seas- part 3

Figure 4-9 Combined effects of human activities and pressures in Europe's seas

Source: Taken from EEA (2020) *Marine messages II-Navigating the course towards clean, healthy and productive seas through implementation of an ecosystembased- approach*. EEA Report No. 17/2019, pp 36.

Note: Pressures included= Changes to hydrological conditions, disturbance of species due to human presence, input of microbial pathogens Introductions of non-indigenous species, nutrients, physical disturbance to seabed, physical loss of seabed Input of impulsive anthropogenic sound Input of continuous anthropogenic sound, bycatch by pelagic towed gears, extraction of species by commercial fishing, bycatch by bottom touching mobile gears, and hazardous substances.

Action 13: Improve the management of fished stocks

Box 4-19 Action 13 of the EU Biodiversity Strategy to 2020

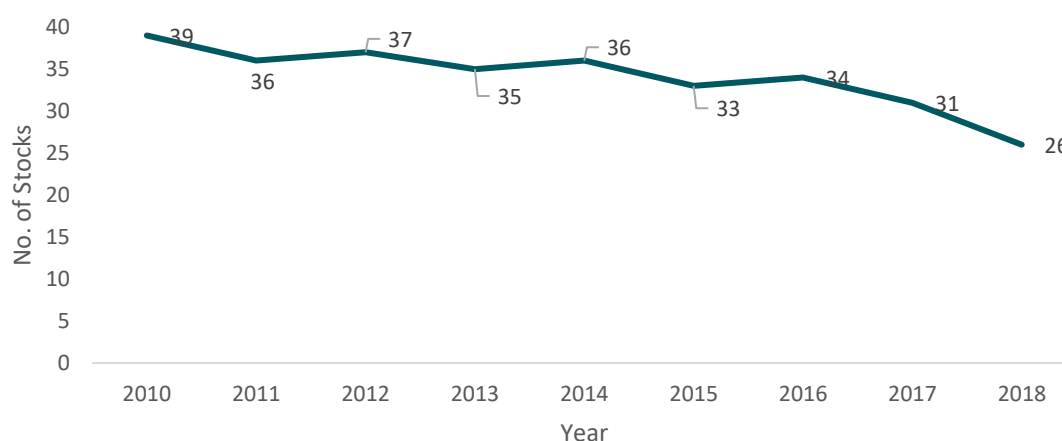
13a) The Commission and Member States will maintain and restore fish stocks to levels that can produce MSY in all areas in which EU fish fleets operate, including areas regulated by Regional Fisheries Management Organisations, and the waters of third countries with which the EU has concluded Fisheries Partnership Agreements.

13b) The Commission and Member States will develop and implement under the CFP long-term management plans with harvest control rules based on the MSY approach. These plans should be designed to respond to specific time-related targets and be based on scientific advice and sustainability principles.

13c) The Commission and Member States will significantly step up their work to collect data to support implementation of MSY. Once this objective is attained, scientific advice will be sought to incorporate ecological considerations in the definition of MSY by 2020.

Limited progress towards Action 13 has been achieved. Achieving MSY in all areas in which all EU fish fleets operate has not been achieved, despite significant improvements being made in regards to the state of stocks particularly in the NE Atlantic.¹⁹⁷ As shown in Figure 4-10 below, across 5 Ecoregions (Baltic Sea, Bay of Biscay and Iberia, Celtic Seas, Greater North Sea, Northeast Atlantic) the number of stocks where fishing mortality exceeded F_{MSY} (fishing mortality that produces catches at the level of Maximum Sustainable Yield) has reduced since 2010, from 39 stocks to 26 in 2018.¹⁹⁸

Figure 4-10 Number of stocks by year where fishing mortality exceeded F_{MSY} (fishing mortality that produces catches at the level of Maximum Sustainable Yield (MSY))



Source: Adapted from STECF (2020) *Monitoring the performance of the Common Fisheries Policy (STECF-Adhoc-20-01)*, Scientific, Technical and Economic Committee for Fisheries (STECF).

In addition, since 2010 the number of overfished stocks in the NE Atlantic region has continued to decline, as has the number of stocks outside safe biological limits (despite a recent increase).¹⁹⁹ Looking beyond the aforementioned ecoregions, the situation in the Mediterranean and Black Seas is contrasting. Significant data gaps exist in estimating fish stock sustainability, yet based on best available data, it is clear that fish stocks within both of these regions remain significantly over-exploited.^{200 201}

Attributing any MSY progress to the Strategy is challenging, particularly as the 2014 Common Fisheries Policy reform prescribed the end of overfishing and the rebuilding of fish stocks at the level of MSY and above. Similarly, attributing changes to improved management of fish stocks linked to the Strategy is difficult, as the predominant driving force behind actions related to this are largely linked to the Marine Strategy Framework Directive. Under the CFP, a range of tools are utilised to sustainably manage fish stocks, including inter alia: establishing TACs, multi-annual plans, technical measures, management of discards, implementation of landing obligations, targeted funding, fisheries control measures, and data collection/monitoring requirements. Based on the scope of actions listed under Action 13 of the Strategy, evaluating all of the aforementioned tools is not included as part of this evaluation. Rather, a focus is placed on analysing the progress of achieving MSY through multi-annual plans (MAPs) and TACs.

¹⁹⁷ ECA (2020) *Marine environment: EU protection is wide but not deep*, Special Report No.26. Replies of the Commission

¹⁹⁸ STECF (2020) *Monitoring the performance of the Common Fisheries Policy (STECF-Adhoc-20-01)*, Scientific, Technical and Economic Committee for Fisheries (STECF)

¹⁹⁹ STECF (2021) 66th Plenary Report (PLEN-21-01)

²⁰⁰ EC COM (2020) 248 final, *Towards more sustainable fishing in the EU: state of play and orientations for 2021*

²⁰¹ STECF (2020) *Monitoring the performance of the Common Fisheries Policy (STECF-Adhoc-20-01)*, Scientific, Technical and Economic Committee for Fisheries (STECF)

There are currently 6 multi-annual plans in place²⁰² (Baltic Sea, North Sea, Western Mediterranean Sea, Western waters, European eel, Bluefin tuna²⁰³) and one proposal for the Adriatic Sea currently undergoing a Council review.²⁰⁴ Several reports have criticised the existing MAPs, as they promote an upper-range of F_{MSY} (and in some instances surpass F_{MSY} levels²⁰⁵) and only apply to targeted, commercial species.^{206 207} Furthermore, significant differences in their management approach and subsequent impacts are prevalent within multiannual plans. For example, management practices in Mediterranean regions are predominantly centred around national boundaries rather than focusing on the geographical distribution of fish stocks, whilst also focussing on specific technical measures and selective closing of areas. In the Mediterranean and Black Sea regions the majority of fish stocks are overfished, with approximately 13% (6 stocks) fished beyond MSY limits.²⁰⁸ In contrast, in areas such as the North East Atlantic, TAC limits are the predominant instrument implemented.²⁰⁹ Such differences in approach could be a factor behind the disparities in fish stock health in the two regions, in addition to contrasting levels of control and enforcement,²¹⁰ and the difficulties in obtaining catch data in the Mediterranean region.²¹¹

The number of fish stocks which have been assessed for estimated MSY has remained stable since 2010 (65 stocks in the ICES area were assessed in the latest reporting data- 2018).²¹² Furthermore, 156 Total Allowable Catch (TAC) limits were in place in 2018 within EU waters (ICES area), yet in many instances their parameters were not aligned with biological limit assessments. Approximately 54% of these 156 TACs were (at least partially) covered by stock F_{MSY} estimates²¹³, indicating that catch limits proposed by fisheries ministers could exceed scientific advice.²¹⁴

Action 14: Eliminate adverse impacts on fish stocks, species, habitats and ecosystems

Box 4-20 Action 14 of the EU Biodiversity Strategy to 2020

- 14a) The EU will design measures to gradually eliminate discards, to avoid the by-catch of unwanted species and to preserve vulnerable marine ecosystems in accordance with EU legislation and international obligations.
- 14b) The Commission and Member States will support the implementation of the Marine Strategy Framework Directive, including through providing financial incentives through the future financial instruments for fisheries and maritime policy for marine protected areas (including Natura 2000 areas and those established by international or regional agreements). This could include restoring marine ecosystems, adapting fishing activities

²⁰² https://ec.europa.eu/fisheries/cfp/fishing_rules/multi_annual_plans/

²⁰³ Note- both the European eel and Bluefin tuna plans can be considered recovery plans rather than multiannual plans

²⁰⁴ <https://www.europarl.europa.eu/legislative-train/theme-fisheries/file-multiannual-plan-for-small-pelagic-fisheries-in-the-adriatic-sea>

²⁰⁵ The Pew Charitable Trusts (2019) Fit for purpose? An assessment of the effectiveness of the Baltic Sea multi-annual plan (BSMAP)

²⁰⁶ WWF (2018) Evaluation Europe's Course to Sustainable Fisheries by 2020

²⁰⁷ Aranda et al., (2019) Research for PECH Committee — EU fisheries policy - latest developments and future challenges, European Parliament, Policy Department for Structural and Cohesion Policies, Brussels

²⁰⁸ Scientific, Technical and Economic Committee for Fisheries (STECF) (2019) Monitoring the performance of the Common Fisheries Policy (STECF-Adhoc-19-01)

²⁰⁹ Cardinale, Osio, & Scarcella (2017) Mediterranean Sea: a failure of the European fisheries management system.

²¹⁰ Vielmini, Perry & Cornax (2017) Untying the Mediterranean Gordian Knot: A Twenty First Century Challenge for Fisheries Management

²¹¹ ECA (2020) Marine environment: EU protection is wide but not deep, Special Report No.26.

²¹² STECF (2020) Monitoring the performance of the Common Fisheries Policy (STECF-Adhoc-20-01), Scientific, Technical and Economic Committee for Fisheries (STECF)

²¹³ STECF (2020) Monitoring the performance of the Common Fisheries Policy (STECF-Adhoc-20-01), Scientific, Technical and Economic Committee for Fisheries (STECF)

²¹⁴ ECA (2020) Marine environment: EU protection is wide but not deep, Special Report No.26.

and promoting the involvement of the sector in alternative activities, such as eco-tourism, monitoring and managing marine biodiversity, and combating marine litter.

Significant progress towards Action 14 has been achieved. To reduce the high levels of unwanted catches and to gradually eliminate discards, the CFP introduced a range of instruments and measures. A key measure taken by the CFP has been the introduction of landing obligations, whereby fishing vessels are required to retain and bring to port all seafood catches. However, there is a lack of accurate reporting of discarded catches, challenges with enforcement, and low compliance with the obligation.²¹⁵ Fishers have raised concerns in regards to the landing obligation, particularly on ‘choke effects’ (“a term used to describe a species with a low quota that can cause a vessel to stop fishing even if they still have quota for other species”²¹⁶) which fishers believe to cause negative economic and ecological impacts.²¹⁷

The introduction of the EU Finning Regulation,²¹⁸ and Technical Measures Regulation²¹⁹ have led to progress in the management and conservation of various species in EU waters. The aforementioned legislation have improved knowledge on the status of shark species,²²⁰ whilst improving the selectivity of fishing gear to reduce unwanted catches of mammals, seabirds and reptiles.²²¹ The lack of data on historical trends in bycatch of such species means that evaluating progress (or impacts of mitigation measures) cannot be done (at the EU level)²²², yet the reduction in static gear in regions such as the Baltic Sea are estimated to have reduced the pressures on seabirds and mammals in the area significantly.²²³

In regards to Action 14b, Langhout (2019) found that the European Maritime and Fisheries Fund (EMFF) of 2014-2020 enabled the funding for the implementation of the MSFD, Natura 2000 protection and management, biodiversity and ecosystem services.²²⁴ It was estimated that 15 % of the EMFF budget was spent on biodiversity-related measures in the 2014-2020 period,²²⁵ whilst WWF estimated that a smaller percentage (2%) of EMFF 2014-2020 funding was spent on reducing the impacts of fishing on the

²¹⁵ EC COM (2020) 248 final, Towards more sustainable fishing in the EU: state of play and orientations for 2021

²¹⁶ Rihan (2018) Research for PECH Committee- Landing obligation and choke species in multispecies and mixed fisheries- The North Western Waters, European Parliament

²¹⁷ Fitzpatrick et al., (2019) Fishing industry perspectives on the EU Landing Obligation. The European Landing Obligation, 71-87. In Uhlmann et al. (eds) (2019) The European Landing Obligation Reducing Discards in Complex, Multi-Species and Multi-Jurisdictional Fisheries

²¹⁸ Council Regulation (EC) No 1185/2003 of 26 June 2003 on the removal of fins of sharks on board vessels, as amended by Regulation (EU) No 605/2013

²¹⁹ Regulation (EU) 2019/1241 of the European Parliament and of the Council of 20 June 2019 on the conservation of fisheries resources and the protection of marine ecosystems through technical measures

²²⁰ STECF (2019) Review of the implementation of the shark finning regulation and assessment of the impact of the 2009 European Community Action Plan for the Conservation and Management of Sharks, Scientific, Technical and Economic Committee for Fisheries

²²¹ STECF (2020) - Review of technical measures (part 1) (STECF-20-02), Scientific, Technical and Economic Committee for Fisheries

²²² As noted in: STECF (2019) Review of the implementation of the EU regulation on the incidental catches of cetaceans (STECF-19-07) pg 20; for seabirds- STECF (2020) Review of technical measures (part 1) (STECF-20-02) pg 170; for turtles- STECF (2020) Review of technical measures (part 1) (STECF-20-02) pg 169

²²³ STECF (2020) - Review of technical measures (part 1), Scientific, Technical and Economic Committee for Fisheries

²²⁴ EU, 2014, REGULATION (EU) No 508/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 May 2014 on the European Maritime and Fisheries Fund and repealing Council Regulations (EC) No 2328/2003, (EC) No 861/2006, (EC) No 1198/2006 and (EC) No 791/2007 and Regulation (EU) No 1255/2011 of the European Parliament and of the Council.

²²⁵ Ernst and Young et al. (2017) Study on biodiversity financing and tracking biodiversity-related expenditures in the EU budget. Project number: ENV.B.2/ETU/2014/0031, 2017

marine environment.²²⁶ By the end of 2019, MS had committed to a range of topics related to the sustainable use of fisheries resources, including: facilitating the landing obligation implementation, €116.7 million; Natura 2000 (directly or potentially) support, €336 million; supporting operations in relation to protection and restoration of biodiversity and ecosystems, €1.4 billion.²²⁷ Regarding EMFF support to Natura 2000 (acknowledging that one of the main aims of the EMFF is to support the CFP, which in turn does not explicitly mention Natura 2000), the commitment rate of measures is estimated at 22.35%, which is deemed as satisfactory.²²⁸

Target 5 Combat invasive alien species

Box 4-21 Target 5 of the EU Biodiversity Strategy to 2020

By 2020, Invasive Alien Species (IAS) and their pathways are identified and prioritised, priority species are controlled or eradicated, and pathways are managed to prevent the introduction and establishment of new IAS.

Significant progress towards Target 5 has been made, with the adoption of the Regulation on Invasive Alien Species (IAS) in 2014. However, most of the evidence relating to Target 5 relates to processes and outputs. This is because management measures of widely spread species and pathways action plans are implemented within 18 and 36 months respectively after listing (meaning full implementation of the IAS regulation begun in July 2019- 36 months after the adoption of the first Union list). The Regulation has encouraged coordinated action between countries which share invasive species,²²⁹ whilst the European Alien Species Information Network (EASIN) has facilitated access to harmonised information of the distribution of around 14 000 alien species throughout Europe²³⁰ leading to increased knowledge sharing and citizen involvement.²³¹ A list of EU prioritised species (list of invasive alien species of Union concern) was adopted in 2016 and updated in 2017 and 2019, reaching a total of 66 species on the list.²³² Furthermore, revised Regulations on Plant Health and on Animal Health have also been introduced.

Despite this clear progress, invasive alien species continue to exert significant pressure on EU biodiversity and ecosystems, both terrestrial and aquatic.²³³ Under Nature Directives reporting, invasive alien species were reported by Member States as exerting the greatest pressure on sclerophyllous scrub, dune and forest habitats, in addition to passage and wintering birds, and other vertebrates.²³⁴ In regards to invasive alien species of union concern, analysis shows that these impact Atlantic and Continental regions disproportionately, yet areas where such species show high potential impacts occur across all ecosystems and biogeographic regions.²³⁵

²²⁶ WWF (2018) The EU Multiannual Financial Framework (MFF)- WWF Position on the next EU Budget and its application

²²⁷ EC (2020) Directorate-General for Maritime Affairs and Fisheries, Unit D.3 (2020): FAME SU, EMFF implementation report 2019

²²⁸ EC (2018) Directorate-General for Maritime Affairs and Fisheries - Unit D.3 (2018): FAME SU Report EMFF and Natura 2000

²²⁹ Genovesi et al. (2015) EU adopts innovative legislation on invasive species: a step towards a global response to biological invasions?

²³⁰ Magliozzi (2020) Assessing invasive alien species in European catchments: Distribution and impacts. *Science of the Total Environment*, 732.

²³¹ Council of Europe (2019) 13th meeting of the Bern Convention Group of Experts on Invasive Alien Species- Review of the Reports Submitted by Parties on Progress in the Implementation of the European Strategy on Invasive Alien Species and on the use of Bern Convention Codes of Conduct and Guidelines on IAS. Available at:

<https://rm.coe.int/analysis-of-national-reports-on-the-implementation-of-the-european-ias/168094f67d>

²³² See: https://ec.europa.eu/environment/nature/invasivealien/list/index_en.htm

²³³ EEA (2019) State of the Environment Report 2020

²³⁴ EEA (2020) State of nature in the EU- Results from reporting under the nature directives 2013-2018

²³⁵ MAES et al., (2020) Mapping and Assessment of Ecosystems and their Services: An EU ecosystem assessment

Action 15: Strengthen the EU Plant and Animal Health Regimes

Box 4-22 Action 15 of the EU Biodiversity Strategy to 2020

15) The Commission will integrate additional biodiversity concerns into the Plant and Animal Health regimes by 2012.

Action 15 and 16 have been completed. The EU Plant Health Regulation was strengthened in 2016 (following the 2013 proposal), enhancing the 1977 regime by providing a greater array of measures to control and manage pests depending on the risk they represent. The regulation seeks to ensure safe trade and mitigate the impacts of climate change on the health of crops and forests. Four key areas constitute the regulation: 1) plant pests; 2) the import of plants into the EU; 3) the movement of plants or plant products within the EU; and, 4) the introduction of new obligations and responsibilities for professional operators. 20 priority pests were listed in 2019,²³⁶ for which Member States will now have to devise information campaigns, surveys, contingency plans and action plans for their eradication. The EU Animal Health Regulation was also strengthened in 2016. The Regulation streamlines a large number of legal acts into one law, allowing greater use of new technologies for animal health activities, whilst also enabling enhanced early detection and control of animal diseases.²³⁷ Both Regulations also encompass diseases that affect wildlife, allowing pests which impact native biodiversity and plants to be listed. As with the analysis of Target 5, the relatively recent implementation of the Regulations means that assessments on their effectiveness are currently not possible.

Target 6 Help avert global biodiversity loss

Box 4-23 Target 6 of the EU Biodiversity Strategy to 2020

By 2020, the EU has stepped up its contribution to averting global biodiversity loss.

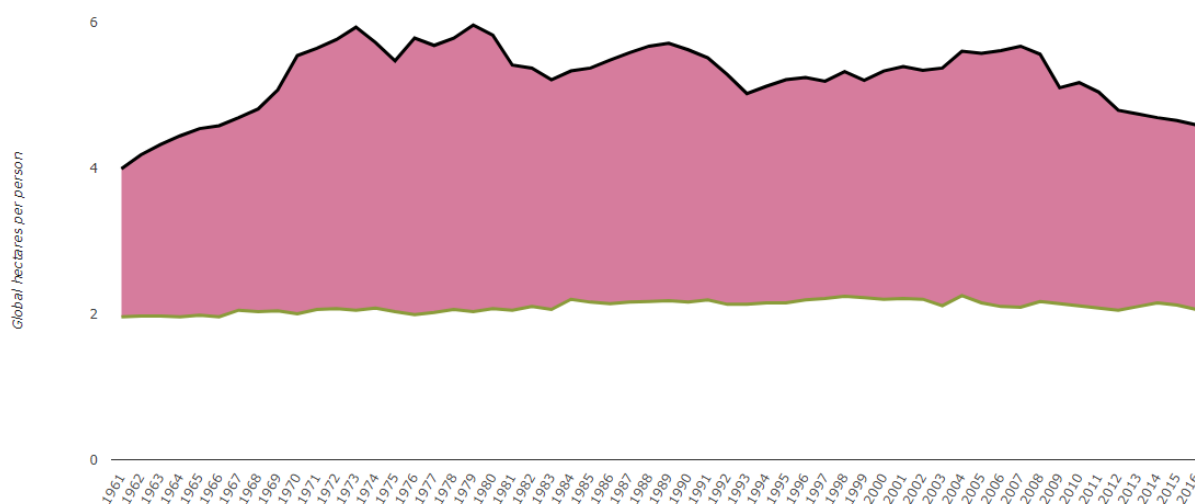
Limited progress towards Target 6 has been achieved. The natural capital stock per person worldwide is estimated to have declined by 40% between 1992-2014- with global biodiversity decline occurring faster now than at any time in human history.²³⁸ The EU's (EU27+ UK) ecological footprint per person has been in steady decline since 2010, largely due to a reduction in the carbon footprint. However, the EU still remains in a significant ecological deficit compared to its biocapacity, resulting in overextraction of resources within the EU or other regions (through the import and export of goods, or through the exploitation of global commons).²³⁹

²³⁶ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R1702&from=EN>

²³⁷ van Wagenberg, Baltussen and Jongeneel (2019) Animal Health Policy, In: EU Bioeconomy Economics and Policies: Volume I (pp. 151-172)

²³⁸ Dasgupta et al., (2021) The Economics of Biodiversity: The Dasgupta Review

²³⁹ EEA (2020) Indicator Assessment- Ecological footprint of European countries. Available at: <https://www.eea.europa.eu/data-and-maps/indicators/ecological-footprint-of-european-countries-2/assessment>

Figure 4-11 EU-27 + UK Ecological footprint, biocapacity and ecological deficit per person

Source: Taken from EEA (2020) Indicator Assessment- Ecological footprint of European countries. Available at: <https://www.eea.europa.eu/data-and-maps/indicators/ecological-footprint-of-european-countries-2/assessment>

Note: Black line= ecological footprint per person; red line= biocapacity per person; pink area= deficit

Evidence suggests that progress in developing market signals to avert biodiversity loss has been made, such as the implementation of General Scheme of Preferences, where countries must implement CBD elements in order to benefit from preferential trade tariffs,²⁴⁰ yet comprehensive indicator and robust methods to substantiate trade impacts on biodiversity are lacking.²⁴¹

Action 17: Reduce indirect drivers of biodiversity loss

Box 4-24 Action 17 of the EU Biodiversity Strategy to 2020

17a) Under the EU flagship initiative on resource efficiency, the EU will take measures (which may include demand and/or supply side measures) to reduce the biodiversity impacts of EU consumption patterns, particularly for resources that have significant negative effects on biodiversity.

17b) The Commission will enhance the contribution of trade policy to conserving biodiversity and address potential negative impacts by systematically including it as part of trade negotiations and dialogues with third countries, by identifying and evaluating potential impacts on biodiversity resulting from the liberalisation of trade and investment through ex-ante Trade Sustainability Impact Assessments and ex-post evaluations, and seek to include in all new trade agreements a chapter on sustainable development providing for substantial environmental provisions of importance in the trade context including on biodiversity goals.

17c) The Commission will work with Member States and key stakeholders to provide the right market signals for biodiversity conservation, including work to reform, phase out and eliminate harmful subsidies at both EU and Member State level, and to provide positive incentives for biodiversity conservation and sustainable use.

Limited progress has been made towards Action 17 (with no progress noted towards Actions 17a and 17c). Tackling certain drivers of biodiversity loss such as fossil fuel extraction and usage has been successful to a certain extent (the majority of Member States support schemes for coal production have

²⁴⁰ EC COM (2018) 665 final, e application of Regulation (EU) No 978/2012 applying a Scheme of Generalised Tariff Preferences and repealing Council Regulation (EC) No 732/2008

²⁴¹ Kuik et al., (2018) Trade Liberalisation and Biodiversity: Scoping Study: Methodologies and Indicators to Assess the Impact of Trade Liberalisation on Biodiversity (Ecosystems and Ecosystem Services). European Commission, DG Environment.

been largely phased out and were expected to be terminated in the remaining countries by 2018²⁴²) yet the EU budget, European public banks²⁴³ and Member States²⁴⁴ have continued to finance fossil fuels production and consumption across the whole of the EU as well as internationally,²⁴⁵ meaning that subsidies²⁴⁶ which are harmful to biodiversity remain significant. Furthermore, global harmful subsidies are estimated at US\$4-6 trillion per year,²⁴⁷ whereas EU fossil fuel subsidies are estimated at €55 billion per year,²⁴⁸ representing wider-spread international institutional failure.²⁴⁹

As part of the EU 2020 strategy, a Roadmap to a Resource Efficient Europe outlined how Europe's economy could be transformed to a sustainable one by 2050. This initiative did not include measures to reduce EU consumption patterns beyond the EU, nor did the Environmental Footprint pilot phase (where Product Environmental Footprint Category Rules (PEFCRs) or Organisation Environmental Footprint Sector Rules (OEFSRs) were developed) directly include impact assessment categories related to biodiversity.²⁵⁰

In the majority of EU trade agreements that have been conducted since 2011, trade and sustainable development (TSD) chapters are included.²⁵¹ TSD chapters contain various commitments related to labour, environmental standards and management of natural resources to ensure that such standards are not lowered to attract trade. TSD chapters are underpinned by Sustainable Impact Assessments (SIA) carried out by the EU, which can then be considered by trade negotiation partners. However, clear guidelines on how to integrate SIA recommendations into trade negotiations are lacking.²⁵² Furthermore, SIAs results are generally released relatively late, which limits the possibility of reflecting their results in the negotiation process.²⁵³ A study reviewed SIAs completed between 1999 and 2017 and concluded that biodiversity is not consistently considered with respect to investment, and neither are the impacts on ecosystem functioning and the supply of ecosystem services²⁵⁴. The EU Trade Policy Strategy adopted in 2021 explicitly recognises the need to further integrate biodiversity into EU trade agreements and their implementation. In line with this, the Commission is systematically including more explicit biodiversity provisions in the Trade and Sustainable Development (TSD) chapters of all new EU FTAs while aiming to further improve the implementation of biodiversity provisions of TSD Chapter under existing FTAs.

²⁴² IVM, BIO, VITO, IEEP, (2014), Enhancing comparability of data on estimated budgetary support and tax expenditures for fossil fuels.

²⁴³ ODI, 2017, Phase-out 2020: monitoring Europe's fossil fuel subsidies, Overseas Development Institute, London, UK.

²⁴⁴ EC COM (2019) 1 Final, Energy prices and costs in Europe

²⁴⁵ ODI, 2017, Phase-out 2020: monitoring Europe's fossil fuel subsidies, Overseas Development Institute, London, UK.

²⁴⁶ For the purpose of this study, harmful subsidies are interpreted as those outlined in OECD (2020) Developing guidance to identify and assess subsidies harmful to biodiversity at national level

²⁴⁷ Dasgupta et al., (2021) The Economics of Biodiversity: The Dasgupta Review

²⁴⁸ EC COM (2019) 1 Final, Energy prices and costs in Europe

²⁴⁹ Dasgupta et al., (2021) The Economics of Biodiversity: The Dasgupta Review

²⁵⁰ Ecofys, Pre and rdc environment (2017) Evaluation report Technical evaluation of the EU EF pilot phase.

²⁵¹ <http://trade.ec.europa.eu/doclib/press/index.cfm?id=1870>

²⁵² Kettunen et al. (2020) An EU Green Deal for trade policy and the environment: Aligning trade with climate and sustainable development objectives.

²⁵³ Kettunen et al. (2020) An EU Green Deal for trade policy and the environment: Aligning trade with climate and sustainable development objectives.

²⁵⁴ Kuik et al., (2018) *Trade Liberalisation and Biodiversity Scoping Study on Methodologies and Indicators to Assess the Impact of Trade Liberalisation on Biodiversity (Ecosystems and Ecosystem Services)*, Brussels: IVM & IEEP Final Report for European Commission ENV.F.1/FRA/2014/0063).

In regards to the phasing out of harmful subsidies, a study conducted in 2012 recommended that a systematic inventory was needed as a first step to reform such subsidies.²⁵⁵ However, this has not been achieved as committed to do so under the Aichi target 3,²⁵⁶ despite the development of the voluntary guidance Common Framework for Biodiversity proofing of the EU budget.²⁵⁷

Action 18: Mobilise additional resources for global biodiversity conservation
Box 4-25 Action 18 of the EU Biodiversity Strategy to 2020

18a) The Commission and Member States will contribute their fair share to international efforts to significantly increase resources for global biodiversity as part of the international process aimed at estimating biodiversity funding needs and adopting resource mobilisation targets for biodiversity at CBD CoP11 in 2012.

18b) The Commission will improve the effectiveness of EU funding for global biodiversity inter alia by supporting natural capital assessments in recipient countries and the development and/or updating of National Biodiversity Strategies and Action Plans, and by improving coordination within the EU and with key non-EU donors in implementing biodiversity assistance/projects.

Significant progress has been made towards Action 18. In the last decade, the EU and its Member States collectively upheld their commitment to increase financial flows to developing countries for biodiversity²⁵⁸. Contributions from the EU and Member States to international biodiversity funding have been significant in recent years, with the latest available data showing that Official Development Assistance (ODA) related to global biodiversity almost doubled between 2006 to 2015.²⁵⁹ Significant EU funding towards biodiversity conservation outside the EU through the BEST, EuropeAid and LIFE programmes has been delivered in recent years.²⁶⁰ Figure 4-12 below indicates international financial flows from various EU funds towards biodiversity, highlighting the significant sums. Gathering an overview of the impacts of such funding - and biodiversity funding (including aid) in general - is hampered by the lack of indicators which directly measure biodiversity aspects at country level in a consistent and comparable way. The methodology to track the EU budget for biodiversity is built on the internationally agreed OECD Rio Markers methodology. Rio Markers are systematically applied to all EU funded interventions, allowing to identify interventions (and financing) that contribute to biodiversity objectives. However, Rio markers do not measure impacts and progress towards the intended objectives. They need to be associated to robust indicators and monitoring systems that allow measuring progress and impacts.²⁶¹

²⁵⁵ Withana, et al., (2012) Study supporting the phasing out of environmentally harmful subsidies. A report by the Institute for European Environmental Policy (IEEP), Institute for Environmental Studies - Vrije Universiteit (IVM), Ecologic Institute and Vision on Technology (VITO) for the European Commission - DG Environment. Final Report.

²⁵⁶ <https://www.cbd.int/doc/decisions/cop-12/cop-12-dec-03-en.pdf>

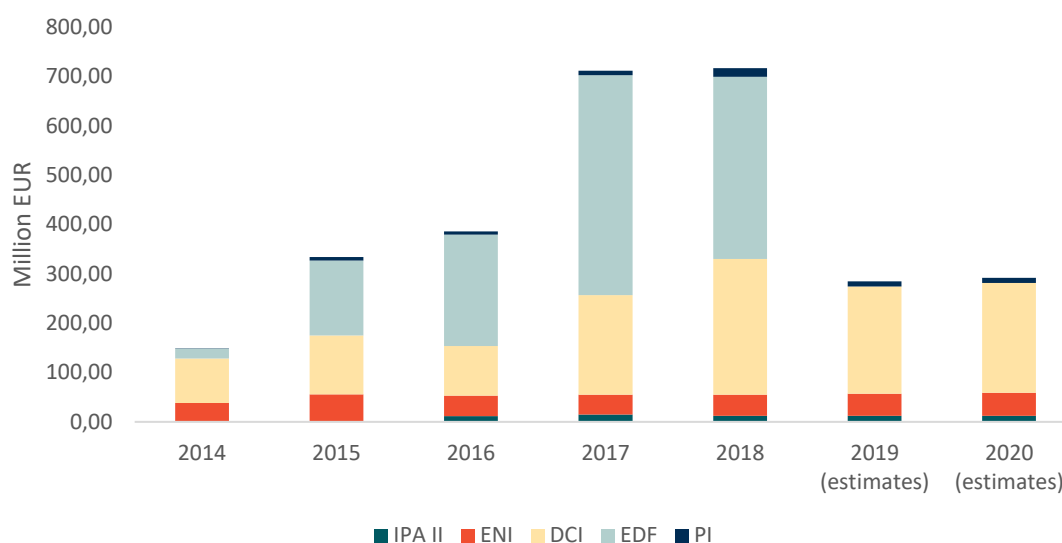
²⁵⁷ <https://ec.europa.eu/environment/nature/biodiversity/comm2006/proofing.htm>

²⁵⁸ <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1590574123338&uri=CELEX:52020DC0380#footnote83>

²⁵⁹ EC SWD (2018) Investing in Sustainable Development- The EU at the forefront in implementing the Addis Ababa Action Agenda. Available at: https://ec.europa.eu/international-partnerships/system/files/investing-in-sustainable-dev-report-april-2018_en.pdf

²⁶⁰ JRC (2021) eConservation, available at: <https://econservation.jrc.ec.europa.eu/>

²⁶¹ Stepping and Meijer (2018), The Challenges of Assessing the Effectiveness of Biodiversity-Related Development Aid. Tropical Conservation Science Volume 11: 1-11.

Figure 4-12 International financial flows for biodiversity from various EU funding programmes

Source: EC (forthcoming) EU draft submission to CBD financial reporting.

Note: EDF 2018 data is an estimation based on non-quality-controlled data. 2019 and 2020 data are estimates, which are currently not available for EDF.

The European Commission has also supported the development of numerous National Biodiversity Strategies and Action Plans in the Pan-European region, assisting countries in such regions developing biodiversity information systems to ultimately inform decision making processes.²⁶² Furthermore, various Commission led projects related to conservation in Africa,²⁶³ Asia²⁶⁴ and Latin America²⁶⁵ have led to a range of benefits. These include (as examples)- assisting the mapping biodiversity pressures in these regions, raised awareness amongst stakeholders for the need for sustainably managed ecosystems, strengthened cooperation among national and international actors involved in sustainable resource management,²⁶⁶ whilst also developing strategic approaches to nature management in these areas which can be replicated in future years.

Action 19: 'Biodiversity proof' EU development cooperation

Box 4-26 Action 19 of the EU Biodiversity Strategy to 2020

19) The Commission will continue to systematically screen its development cooperation action to minimise any negative impact on biodiversity, and undertake Strategic Environmental Assessments and/or Environmental Impact Assessments for actions likely to have significant effects on biodiversity.

Significant progress has been made towards Action 19. The EU has developed a methodology for evaluating the effectiveness of its external assistance and interventions under the International Partnership programme.²⁶⁷ Evaluations of various EU External Financing Instruments have found that programming needed to reflect EU commitments to biodiversity better,²⁶⁸ align further with

²⁶² UNEP-WCMC (2016) Indicators and Information Systems for biodiversity and development - guidance from the Pan European region

²⁶³ EC (2015) Larger than elephants- Inputs for an EU strategic approach to wildlife Conservation in Africa : synthesis

²⁶⁴ EC (2017) Larger than tigers- Inputs for a strategic approach to biodiversity conservation in Asia

²⁶⁵ EC (2019) Larger than jaguars- Inputs for a strategic approach to biodiversity conservation in Latin America and the Caribbean

²⁶⁶ EC (2017) Larger than tigers- Inputs for a strategic approach to biodiversity conservation in Asia

²⁶⁷ EC (n.d) International Partnerships- Monitoring and Evaluation. Available at: https://ec.europa.eu/international-partnerships/our-impact/monitoring-and-evaluation_en

²⁶⁸ EC SWD (2017) 601 final, Midterm Review Report on the External Financing Instruments

international biodiversity commitments,²⁶⁹ and increase transparency on actual funding contributions to biodiversity.²⁷⁰ In addition, a series of guidance documents have been produced for Member States to mainstream environment within their respective development cooperation actions and to help them with Strategic Environmental Assessments in 2017.²⁷¹

Initiatives, such as Biodiversity and Ecosystem Services in Territories of European Overseas (BEST), have increased the efficiency and access of funding for actions related to biodiversity and sustainable ecosystem management in EU Outermost Regions (ORs) and Overseas Countries and Territories (OCTs).²⁷² The BEST scheme has funded a range of projects and produced a myriad of positive impacts and processes, including the development of biodiversity strategies for small island states, supported the creation of marine protected areas, and developed ecosystem-based approaches to climate change adaptation and mitigation.²⁷³ Furthermore, its twin-project (BEST 2.0) has assisted in establishing grant schemes for biodiversity to support collaboration with OR and OCT regional activities which pool resources and expertise to address biodiversity-related issues.²⁷⁴ As a result of such projects, habitats have been protected²⁷⁵ and ecosystem services valued²⁷⁶ yet evaluations of the initiatives and their impacts on biodiversity are not available.

Action 20: Regulate access to genetic resources and the fair and equitable sharing of benefits arising from their use

Box 4-27 Action 20 of the EU Biodiversity Strategy to 2020

20) The Commission will propose legislation to implement the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation in the European Union so that the EU can ratify the Protocol as soon as possible and by 2015 at the latest, as required by the global target.

This action has been completed. The EU became a party to the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation in the Union in 2014 and implements the Protocol with the Regulation n. 511/2014 EU ABS Regulation. The Regulation establishes compliance obligations with access and benefit-sharing rules for users of genetic resources and associated traditional knowledge in the Union.²⁷⁷ Even if the implementation and enforcement of the EU ABS Regulation by Member States has been slow and uneven, by now several progress have been done: all Member States have set up the institutional and legislative framework as required under the Regulation, most Member States are in the process of developing risk-based plan for checks while some

²⁶⁹ EC SWD (2017) 600 final, Evaluation of the Development Cooperation Instrument

²⁷⁰ EC SWD (2017) 608 final, Mid-term review report of the External Financing Instruments

²⁷¹ EC (2016) Tools and Methods Series- Guidelines No.6, Integrating the environment and climate change into EU international cooperation and development.

²⁷² CBD (2021) European Union Sixth National Report, Clearing House Mechanism of the Convention on Biological Diversity Information Submission Service. Available at: <https://chm.cbd.int/database/record?documentID=243509>

²⁷³ EC (n.d.) BEST Voluntary Scheme for Biodiversity and Ecosystem Services in Territories of European Overseas. Available at: https://ec.europa.eu/environment/nature/biodiversity/best/best-practices/index_en.htm

²⁷⁴ CBD (2021) European Union Sixth National Report, Clearing House Mechanism of the Convention on Biological Diversity Information Submission Service. Available at: <https://chm.cbd.int/database/record?documentID=243509>

²⁷⁵ BEST Initiative (n.d.) Protect and Restore the Dry Forest of the Coast of New Caledonia. Available at: <https://ec.europa.eu/environment/nature/biodiversity/best/pdf/attachment%20BEST%202.0%20factsheet1046%20eng.pdf>

²⁷⁶ BEST Initiative (n.d) CORAIL project: Coral reefs in a changing world - ecosystem services from coral reefs: public tools for decision-making in New Caledonia and French Polynesia. Available at: https://ec.europa.eu/environment/nature/biodiversity/best/pdf/fs_corail_final.pdf

²⁷⁷ Official Journal of the European Union (2014) Regulation (EU) No 511/2014 of the European Parliament and of the Council of 16 April 2014 on compliance measures for users from the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union. Article 1.

adopted the plan and started to carry out checks on users of genetic resources, awareness-raising activities are carried out in almost all Member States.

4.2.2 EQ 2 (2.1-2.2) What have been the major achievements of the Strategy, and the causes of these achievements?

This evaluation question seeks to determine where significant strides have been made in implementing the actions and reaching the targets set out in the Strategy at EU and Member State level. Whereas Evaluation Question 1 looks at the overall progress towards each target/action, this evaluation question focuses on significant achievements and positive changes that have been brought about by the Strategy, and seeks to identify the underlying actions, measures and tools which have been utilised and contributed to these achievements, as well as if successful approaches have been shared and replicated amongst stakeholders. The evidence here has been group based upon the reoccurring themes evidenced in literature and through consultations, as a Target-by-Target analysis presents several overlaps.

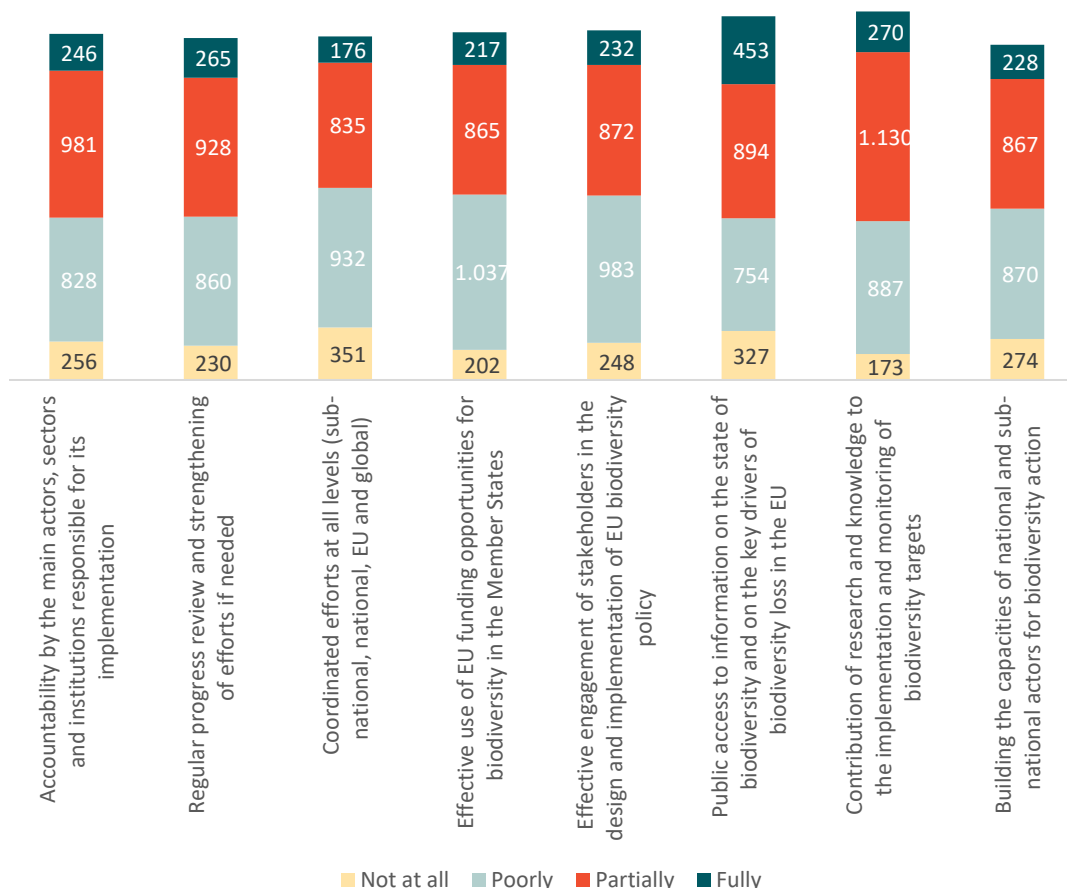
Despite the limited success in achieving the Headline Target outlined in evaluation question 1, a range of positive achievements and impacts of the Strategy are evidenced (some of these issues are further elaborated under the EU Added Value section later in this report). However, these positive biodiversity trends are often only localised successes and would need to be significantly upscaled to measurably impact the overall negative trends towards the headline target.

Development of governance frameworks and enhanced coordination

The Strategy is linked to the implementation of various governance frameworks which have increased the political momentum of biodiversity issues throughout various policy domains in some instances. The implementation of the Nature Directives has led to the engagement of stakeholders at various governance levels when establishing conservation objectives and management plans/measures (including Natura 2000) and integrating biodiversity criteria within development plans, in addition to harmonizing Member State approaches to biodiversity decision-making.²⁷⁸ A key component of the governance framework of the Strategy has been the Common Implementation Framework (CIF). The CIF encompasses governance elements which are related to the coherent framework for monitoring, assessing and reporting on progress towards reaching the Strategy targets. In the OPC, participants were a question related to this, and the responses are outlined below. As can be seen, most stakeholders responded that the CIF has either ‘partially’ or ‘poorly’ contributed to a range of activities, processes and actions. Stakeholders noted that the CIF has contributed significantly to the access of information on the state of biodiversity, with 453 respondents stating that CIF has ‘fully’ improved access to information.

²⁷⁸ Milieu, IEEP and ICF (2016) Evaluation Study to support the Fitness Check of the Birds and Habitats Directives, March 2016.

Figure 4-13 OPC responses to "The EU Biodiversity Strategy to 2020 established a common implementation framework to track progress in reaching the targets and ensure coordinated implementation at all levels. To which extent has this: " Number of responses outlined within each bar.



An NGO stakeholder in interviews stated the Strategy has “increased the role of Europe at the global policy arena. At the national level, the strategy showed the general direction of the biodiversity policy and showed the action needed”, whilst providing “a good framework...(resulting in) Member States knew where to focus to address main drivers of biodiversity loss”. OPC respondents added that the raised public awareness of biodiversity issues (EU citizen, n=12, business associations, n=6, academia n=4), whilst an NGO interviewee added “One of the strengths of EU BDS to 2020 has been the identification of strategic priorities and the opening of discussion forums. The dialogue with stakeholders has been a moment of multilateral growth. In fact, these discussions began mainstreaming biodiversity into other policies, an exercise that culminated in the European Green Deal. The Strategy has been extremely important in raising the profile of the issue of biodiversity. In addition, it allowed to have an overview at the national, local and institutional levels. Moreover, the Strategy was not only focused on biodiversity, but also on ecosystem services and green infrastructure”.

Regarding the ‘mainstreaming’ comment by the stakeholder above, a key benefit and achievement of the Strategy is the formation of multiple partnerships. Despite platforms such as the Business@Biodiversity (B@B) initiative pre-dating the Strategy (thus meaning that attributing its success solely to the Strategy is not appropriate), the Strategy has assisted in maintaining the relevance and

coherent functioning of the platform. A business association stakeholder noted that the platform has led to “...businesses becoming more coordinated and active” in relation biodiversity within the EU, despite the same stakeholder noting issues with regional representativeness and integrating inputs with stakeholders involved in Natura 2000 and CBD issues. Furthermore, the platform can be attributed to giving rise to the ‘Pioneers’ workstream²⁷⁹, which provides a basis for incorporating biodiversity decisions within financial institutions and businesses’ decision making processes. For example, through this initiative, ASN Bank has established a biodiversity positive target, whilst various financing instruments and funds targeting biodiversity have been established (the eco.business Fund advised by Finance in Motion, Mirova’s Land Degradation Neutrality fund, Commonland, the EU Natural Capital Finance Facility).²⁸⁰ However, given the recent implementation of such actions stemming from the B@B platform, the impacts these have had on achieving the Strategy’s Targets are not known.

Under Target 2, The Green Infrastructure Strategy has led to the inclusion of GI within various national biodiversity strategies and plans, maritime and fisheries affairs policy to assist in the sustainable development of coastal areas, climate change adaptation strategies, and EU urban policy.²⁸¹ As highlighted in the Germany case study in Annex C, increased political momentum and actions by cities to create GI has been noted. Such actions stem from the initiation of national GI plans, and subsequent involvement of a range of stakeholders throughout implementation, particularly in urban areas.

The Strategy has also driven the development of the dedicated legislative instrument on invasive alien species (IAS)- the EU IAS Strategy. Through extensive consultation between various DGs, the IAS Strategy was enshrined and mandated within the Strategy under Target 5. The development of the IAS Strategy responds to various other EU legal obligations (including the WFD, Nature Directives, MSFD and international commitments),²⁸² yet the Strategy can be considered the primary vehicle to progressing the IAS into law. Due to the IAS, there is now coordination across the EU on species included on the Union List, with the data gathering component of EASIN coupled with the establishment of the EASIN baseline resulting in crucial planning measures to tackle IAS in the future.

Encouragement of stakeholder engagement

Various stakeholder engagement activities related to the objectives of the Strategy have also been noted, yet evidence of direct impacts on biodiversity are lacking, as is the attribution of their origination to the Strategy. Such activities include the Natura 2000 Biogeographical Process²⁸³, the European Network for Rural Development (ENRD)²⁸⁴, the EASIN network²⁸⁵, FARNET Fisheries Action Network²⁸⁶ and European Innovation Partnership (EIP).²⁸⁷

The Biogeographic Seminars (as part of the Biogeographical Process) have empowered stakeholders with expertise in conservation biology, habitats and species in addition to

²⁷⁹ https://ec.europa.eu/environment/biodiversity/business/workstreams/pioneers/index_en.htm

²⁸⁰ Bor, Duke, and Kisielewicz (eds) (2018) Positive Impact Finance for Business & Biodiversity, EU B@B Platform, Brussels. Available at:

https://ec.europa.eu/environment/biodiversity/business/assets/pdf/Positive_Impact_Finance-EU_Business_Biodiversity_Platform_2018.pdf

²⁸¹ EC COM (2019) 236 final, Review of progress on implementation of the EU green infrastructure strategy

²⁸² EC SWD (2013) 321 final, Impact Assessment Accompanying the document Proposal for a Council and European Parliament Regulation on the prevention and management of the introduction and spread of invasive alien species

²⁸³ https://ec.europa.eu/environment/nature/natura2000/seminars_en.htm

²⁸⁴ <https://enrd.ec.europa.eu/>

²⁸⁵ <https://easin.jrc.ec.europa.eu/easin/>

²⁸⁶ https://webgate.ec.europa.eu/fpfis/cms/farnet2/search/site/biodiversity_en

²⁸⁷ <https://ec.europa.eu/eip/agriculture/en>

socio-economic actors and NGOs to be at the forefront of Natura 2000 implementation,²⁸⁸ ensuring the continuation of increased knowledge and experiences within Natura 2000 processes.²⁹⁰

Through the ENRD, workshops on biodiversity alignment with the CAP have been held- where a list of key biodiversity elements were proposed for inclusion in future CAP Strategic Plans.²⁹¹ It is too early to assess if such meetings have led to the inclusion of biodiversity actions/measures within Strategic Plans, yet the continued collaboration between such a range of stakeholders can assist in heightening the environmental ambitions of agricultural policy.²⁹²

The EASIN network has assisted in facilitating access to data on alien species.²⁹³ The network offers a single aggregation point for spatial data,²⁹⁴ whilst the open-access nature is also a key gateway for innovative monitoring approaches, such as citizen-led data gathering.²⁹⁵ Such approaches can not only enhance data gathering, but also increase public awareness and citizen engagement.²⁹⁶

FARNET has initiated various cooperation activities to, inter alia, improve marine governance, whilst also implementing workshops to increase (marine) biodiversity knowledge and awareness amongst stakeholders, develop innovative data collection tools for catches, and reducing food packaging waste.²⁹⁷

The EIP has provided a platform for farmer-led approaches in projects which develop innovative solutions to farming challenges (including biodiversity issues).²⁹⁸

Through the implementation of Target 5, Member States have developed initiatives to ingrain stakeholder involvement within the development of IAS knowledge platforms and the collection of IAS monitoring data. As highlighted in the Finland case study (Appendix C), ingrain stakeholders throughout the implementation and data gathering of actions can not only provide monitoring cost saving (and increase data gathering), increased awareness of biodiversity-related issues can be garnered.

Stakeholder engagement activities regarding genetic diversity have also taken place, such as the preparatory actions implemented by DG AGRI. The initiative contracted two preparatory actions on EU plant and animal genetic resources in agriculture between 2013 to 2019. The actions assisted in garnering a better understanding of neglected EU genetic resources in agriculture in order to highlight potential economic benefits such resources.²⁹⁹ A range of case studies were developed to showcase

²⁸⁸ Ferranti et al., (2013) Shifting nature conservation approaches in Natura 2000 and the implications for the roles of stakeholders. *Journal of Environmental Planning and Management*, 57(11), 1642-1657.

²⁸⁹ Blicharska et al., (2016). Contribution of social science to large scale biodiversity conservation: A review of research about the Natura 2000 network. *Biological Conservation*, 199, 110-122.

²⁹⁰ Blicharska et al., (2016). Contribution of social science to large scale biodiversity conservation: A review of research about the Natura 2000 network. *Biological Conservation*, 199, 110-122.

²⁹¹ ENRD (2019) ENRD workshop Biodiversity and the CAP - working together to reach conservation goals. Available at: https://enrd.ec.europa.eu/sites/enrd/files/ws34_biodiversity_highlights.pdf

²⁹² SWD (2020) 93 final, Analysis of links between CAP Reform and Green Deal

²⁹³ Tsiamis et al., (2016) The EASIN Editorial Board: quality assurance, exchange and sharing of alien species information in Europe

²⁹⁴ Deriu et al., (2017) Handling Big Data of Alien Species in Europe: The European Alien Species Information Network Geodatabase

²⁹⁵ Tsiamis et al., (2017) Baseline Distribution of Invasive Alien Species of Union concern

²⁹⁶ Tsiamis et al., (2017) Baseline Distribution of Invasive Alien Species of Union concern

²⁹⁷ https://webgate.ec.europa.eu/fpfis/cms/farnet2/search/site/biodiversity_en

²⁹⁸ Coffey et al., (2016) Evaluation study of the implementation of the European Innovation Partnership for Agricultural Productivity and Sustainability, Final report.

²⁹⁹ <https://www.geneticresources.eu/>

practical knowledge and good practices, whilst also presenting conclusions on how to improve the conservation and valorisation of genetic resources. Such initiatives can enhance the uptake of to implement activities in the area of valorisation of neglected crops and rare breeds.

Implementation of proven biodiversity-friendly actions/measures

The Strategy and the Nature Directives have been important drivers in the establishment and increased coverage of the Natura 2000 network, a key component of ongoing biodiversity conservation efforts. As highlighted under EQ1, greater Natura 2000 coverage positively correlates with non-bird species and Annex I habitats conservation status. Furthermore, the designation of Natura 2000 areas has been noted in some instances of stimulating the implementation of conservation measures and increasing access to funding.³⁰⁰

In relation to Target 3a, as noted in earlier sections a range of instruments which have significant potential to support biodiversity are available under the CAP, despite limited uptake. Measures such as Agri-environment-climate measures (AECMs) have shown to be able to produce significant positive impacts on species populations when applied at sufficient scale, organic farming can benefit (predominantly) common and generalist species, whereas Pillar I greening measures such as Environmentally Sensitive Permanent Grassland (ESPG). Such measures are generally more effective when underpinned with strong environmental protection.³⁰¹

Through the implementation of Target 3B, forest managers have been found to commonly implement measures related to biodiversity conservation. These practices include, inter alia, management practices for the conservation of various species, deadwood management, and the maintenance of habitat diversity.³⁰² As shown in the state of forest report, the amount of deadwood (a proxy for forest biodiversity), continues to steadily grow (now approximately 7% of growing stock volume),³⁰³ which reflects more biodiversity-friendly actions incorporated within management plans.

Under the aforementioned pan-European indicators on sustainable forest management, criterion 4 (Maintenance, Conservation and Appropriate Enhancement of Biological Diversity in Forest Ecosystems) gives insights into the biodiversity-related action and available data in forests throughout Europe. The criterion highlights that genetic resource conservation has significantly increased conserved native species populations since 1990 in reporting countries (34 countries).³⁰⁴ Furthermore, the stabilisation of common forest bird populations can be seen as a significant achievement.³⁰⁵ Such trends can indicate that ecosystem conditions remain favourable for such species. There are other indicators, most of them with positive trends.

In relation to Target 4, multiple measures under the CFP have been implemented, which have a direct impact on marine biodiversity. For example, TACs have been established in line with, or below, established sustainable fishing levels for all stocks in the northeast Atlantic, allowing fish stocks to

³⁰⁰ Tucker et al., (2019) Study on identifying the drivers of successful implementation of the Birds and Habitats Directives. Report to the European Commission, DG Environment on Contract ENV.F.1/FRA/2014/0063, Institute for European Environmental Policy, Brussels

³⁰¹ Alliance Environnement et al., (2019) Evaluation of the impact of the CAP on habitats, landscapes, biodiversity

³⁰² NEPCoN (2018) Study on Implementing Sustainable Forest Management According to the EU Biodiversity Strategy and the EU Bioeconomy Strategy

³⁰³ Forest Europe (2020) State of Europe's Forests 2020

³⁰⁴ Forest Europe (2020) State of Europe's Forests 2020

³⁰⁵ Forest Europe (2020) State of Europe's Forests 2020

retain within sustainable levels in the region.³⁰⁶ This is a significantly higher level (of TACs established at sustainable levels) than the cumulative ICES area of EU waters, where TACs are often not aligned with biological limits of stocks estimated.³⁰⁷ The establishment of catch limits which are within sustainable limits has also corresponded to increased profits in the north-east Atlantic region, where an NGO interviewee stated that “some fishing segments have profit rates of 40%” within the region, due to the increased stock. Furthermore, the adoption of the Mediterranean multi-annual plan in 2019 can be seen as a significant achievement, with this being the first in the region. The plan establishes actions to reduce fishing pressures in the region.³⁰⁸ The nascent nature of the multiannual plan means that impacts cannot yet be analysed, yet the plan is seen as a step in the right direction, despite criticisms from NGOs (in consultations) of its ambition. Finally, the implementation of technical measures has been shown to improve fishing selectivity (which can ultimately decrease unwanted catches, and potentially positively impact biodiversity if only targeted species are landed- within MSY) for some fish stocks in certain regions.³⁰⁹

Finally, the implementation of the IAS Regulation is an important EU policy intervention to controlling and eradicating (priority) IAS, and to manage their pathways.³¹⁰ The formation of the European Alien Species Information Network (EASIN) to provide validated data in a standardised manner is a tool to allow IAS knowledge to be collated in order to inform decision making processes.³¹¹

4.2.3 EQ 3 (EQ 3.1-3.3) Where the Strategy has failed to achieve one of its objectives, what have been the contributing causes?

Evaluation question 3 seeks to identify the key implementation gaps or challenges, and explain what have been the barriers and root causes of these failures, at both EU and Member State level. Due to many of these issues being specific to certain areas of the Strategy, this section presents a Target-by-Target overview of the main contributing factors.

Headline Target and cross-cutting issues

On the launch of the Strategy, it was criticised by the European Habitats Forum³¹² as being well intentioned but lacking the power to halt biodiversity loss, on the grounds that the targets and actions lacked ambition, many of the targets were not measurable, there was no target for financing, there was a lack of concrete milestones, there was no clear definition of responsibilities at EU, Commission and Member State level, and that many EU data systems were inadequate. Similarly, Langhout (2019) argued that many targets and actions were not specific enough, responsibilities were not clearly assigned, there was a lack of reporting/tracking of implementation, actions were insufficiently ambitious or poorly defined, limited added value of some targets to existing commitments, lack of finance and expenditure tracking, as well as failures in other EU policies.³¹³

³⁰⁶ EC COM (2020) 248 final, Towards more sustainable fishing in the EU: state of play and orientations for 2021

³⁰⁷ EC SWD (2020) 112 final, Towards more sustainable fishing in the EU: state of play and orientations for 2021

³⁰⁸ EC SWD (2020) 112 final, Towards more sustainable fishing in the EU: state of play and orientations for 2021

³⁰⁹ STECF (2020) Review of technical measures (part 1) (STECF-20-02).

³¹⁰ Carboneras et al., (2017) A prioritised list of invasive alien species to assist the effective implementation of EU legislation

³¹¹ Groom et al., (2017) Seven Recommendations to Make Your Invasive Alien Species Data More Useful

³¹² “European Habitats Forum (2011) European Habitats Forum (EHF) Detailed Response to the EU Biodiversity Strategy” <http://www.efnecp.org/download/EHF-EU-Biodiversity-Strategy.pdf>

³¹³ Langhout, W. (2019). The EU Biodiversity Strategy: progress report 2011-2018. Langhout Ecologisch Advies. https://biodiversity.europa.eu/networks/LanghoutAdvies_2019_AssessmentReport20112018_EU_biodiversity_strategy_2020.pdf

A key barrier to achieving the Headline Target, and indeed subsequent Targets, of the Strategy noted by multiple stakeholders is the lack of legally binding legislation to incentivise Member States and stakeholders into (an excerpt from the Germany case study in Appendix C is given in Box 4-28 below) actions which could progress the Strategy intentions. To illustrate, during consultations an NGO stated *“the Strategy is an important anchor point but not central because it is not a legislative tool”* reflecting previous points throughout this report that indicate the benefits of having a centralised framework and targets to work towards, yet indicating that stronger incentives are required to progress objectives further. Another stakeholder expanded on this, stating *“if member states do not implement these targets, nothing happens. There is a lack of ownership in other sectors, as they do not feel the commitment to stop biodiversity loss.”* This not only applies to the Headline Target, but is also found to be a barrier to the uptake of restoration activities (Target 2) outlined below.

Box 4-28 Reasons for failure to reach biodiversity targets from German perspective (excerpt from Germany case study, Appendix C)

The lack of legally binding targets in the EU Biodiversity Strategy 2020 meant that the Länder were not obliged to engage and commit resources. Legally binding targets are crucial to ensure implementation. Without a legally binding component they are considered optional and are unlikely to receive political attention and sufficient funding.³¹⁴

In addition, a lack of private sector engagement in tackling biodiversity loss (despite progress made through the Business@Biodiversity Platform) is regarded a significant untapped resource potential to reduce pressures on biodiversity resulting from business activities.³¹⁵ A lack of awareness and understanding of natural capital and nature-related financial risk is regarded as an obstacle to greater private sector engagement.³¹⁶

Funding issues were identified throughout multiple case studies in Appendix C, relating to insufficient targeting of biodiversity funding (Finland, Spain, Italy, Romania), insufficient funding for tackling invasive alien species (Germany), insufficient integration and allocation of sectoral funds to biodiversity activities (Finland, Germany), and a lack of political will to finance biodiversity activities (Germany).

As noted under evaluation question 1 Target 1, significant data gaps exist in relation to biodiversity assessments. This can also be attributed to funding gaps and the lack of effective and sustainable monitoring systems.³¹⁷ Without the expansion of such systems, data gaps will persist and stakeholders will be unable to accurately track progress towards agreed targets.³¹⁸

Finally, despite the launch of the Pollinators Initiative by the Commission in 2018, the EU does not have a legal framework for the protection and restoration of wild insect pollinators- despite the wide ranging benefits derived from, and human dependence on pollinator services.³¹⁹ Additionally, EU biodiversity and agriculture policies do not include specific, direct requirements for the protection of pollinators,³²⁰

³¹⁴ Per. Comm. Interviews with NABU, BUND, BfN and management authority Schleswig-Holstein

³¹⁵ Rayment et al., (2018) Valuing biodiversity and reversing its decline by 2030, IEEP Policy Paper.

³¹⁶ Dasgupta et al., (2021) The Economics of Biodiversity: The Dasgupta Review

³¹⁷ Rayment et al., (2018) Valuing biodiversity and reversing its decline by 2030, IEEP Policy Paper.

³¹⁸ Kühl et al., (2020) Effective biodiversity monitoring needs a culture of integration. *One Earth*, 3(4), 462-474.

³¹⁹ Dasgupta et al., (2021) The Economics of Biodiversity: The Dasgupta Review

³²⁰ ECA (2020) Protection of wild pollinators in the EU – Commission initiatives have not borne fruit, Special Report No.15- European Court of Auditors.

despite recent studies indicating (that up to 75% of) insect biomass has declined over the past 30 years in parts of Europe.³²¹

Target 1 Fully implement the Birds and Habitats Directive

The Fitness Check of the Birds and Habitats Directive identified a range of factors which hindered the progress towards the achievement of objectives, as outlined in Figure 4-14 below.

Figure 4-14 Main factors considered by stakeholders to hinder the implementation of the Nature Directives. Factors ranked based on the percentage of respondents who listed each issue as a barrier, in descending order.



Source: Adapted from EC SWD (2016) 472 final, *Fitness Check of the EU Nature Legislation (Birds and Habitats Directives)*, pp 38-39.

Furthermore, the Fitness Check found that the failure to implement site conservation measure, insufficient targeting of funding, and effective management of Natura 2000 were key hindrances to the effectiveness of the Nature Directives.³²²

As a result of the Fitness Check, the European Commission has developed an 'Action Plan for nature, people and the economy'. The Action Plan established priorities for: improving guidance and knowledge and ensuring better coherence with broader socioeconomic objectives; building political ownership; strengthening investment in Natura 2000 and improving synergies with EU funding instruments; and, better communication and outreach, engaging citizens, stakeholders and communities. As such, the Action Plan builds upon the findings and seeks to work towards addressing filling implementation gaps.³²³

A number of issues which have hindered the effectiveness of Natura 2000 sites were also identified in the European Court of Auditors 2017 report, including: insufficient management of the Natura 2000 network by Member States, lack of cooperation and coordination between responsible authorities (at various governance levels and between various stakeholder groups); a lack of structures in place to

³²¹ Hallmann et al., (2017) More than 75 percent decline over 27 years in total flying insect biomass in protected areas. *PloS one*, 12(10); Wagner et al., (2021) Insect decline in the Anthropocene: Death by a thousand cuts. *Proceedings of the National Academy of Sciences*, 118(2); Montgomery et al., (2020) Is the insect apocalypse upon us? How to find out. *Biological Conservation*, 241.

³²² EC SWD (2016) 472 final, *Fitness Check of the EU Nature Legislation (Birds and Habitats Directives)*

³²³ EC COM (2017) 198 final, *An Action Plan for nature, people and the economy*

ensure cross-border cooperation and subsequent habitat connectivity; inadequately defined conservation measures; insufficient assessment of projects which impact Natura 2000 sites; and, inadequate funding and monitoring of Natura 2000 sites.³²⁴

Box 4-29 Coordination, capacity and funding issues hinder Romanian protected area management (excerpt from Romania case study, Appendix C)

The National Agency for Protected Natural Areas (ANANP) was created to address the issues of coordination and administrative capacity that Romania faces. A stakeholder in interviews noted that the agency has very low technical and financial capacity, due to the generally low budget allocations for the sector. The change in responsibility was also criticised due to the fact that the previous custodians (i.e. especially NGOs) of the protected areas had delivered good results. As a result of this change, 530 protected areas (at least 60% of the total) remained unmanaged, ANANP lacking the capacity to ensure the implementation of conservation measures in the territory. Recent infringement proceedings related to the management of Natura 2000 sites indicate the deficiency of the system.

Coordination and cooperation between relevant stakeholders has been noted as problematic in numerous Member States, despite such Member States having structures in place to manage their respective Natura 2000 networks.³²⁵ For example, instances exist of Member States not having regional/local management bodies, whilst information exchange between key Natura 2000 actors limited awareness of potential counterproductive (or duplication of) measures between stakeholder groups.³²⁶ An NGO interviewee stated that the large proportion of Natura 2000 areas which are privately owned can lead to difficulties in ensuring their participation in, for example, LIFE projects - where *“There are almost no projects run by landowners or with an important part on private sector, apart from the quarries and specific activities”*. Furthermore the lack of public participation in the implementation and management of Natura 2000 sites is noted as a key barrier to its effective functioning.³²⁷

Cross border cooperation is often found to encounter communication issues due to language barriers, a lack of administrative structures in place progress issues, and a lack of clear policy direction by Member States to guide cross-border issues.³²⁸ These issues limit the efficiency of nature management in habitats which encompass multiple countries, whilst also negatively impacting the possibility for economic development through joint tourism, the opportunities to resolve land use conflicts, address emergency issues (such as forest fires and flooding) and reduce negative environmental pressures.³²⁹

Inadequately defined conservation objectives and subsequent measures are regularly noted in Member States Natura 2000 management plans.³³⁰ Without clearly linking conservation measures to specific objectives, their effectiveness can be brought into question. Furthermore, this can lead to a missed opportunity on collecting key data needs within Natura 2000 sites. In marine Natura 2000 sites, less than 40% are estimated to have management plans,³³¹ also contributing to data deficiencies. An NGO

³²⁴ ECA (2017) Special Report No.1- More efforts needed to implement the Natura 2000 network to its full potential

³²⁵ ECA (2017) Special Report No.1- More efforts needed to implement the Natura 2000 network to its full potential

³²⁶ ECA (2017) Special Report No.1- More efforts needed to implement the Natura 2000 network to its full potential

³²⁷ Blicharska et al., (2016) Contribution of social science to large scale biodiversity conservation: A review of research about the Natura 2000 network

³²⁸ WUR et al., (2017) Natura 2000 and Spatial Planning.

³²⁹ WUR et al., (2017) Natura 2000 and Spatial Planning.

³³⁰ EEA (2020) The Natura 2000 protected areas network- Management effectiveness in the EU's Natura 2000 network of protected areas. Briefing No 11/2020

³³¹ Mazaris et al., (2018) Gaps and challenges of the European network of protected sites in the marine realm. *ICES Journal of Marine Science*, 75(1), 190-198.

interviewee stated that in relation to marine Natura 2000 *“there is progress in appearance only because the surface of Natura 2000 areas designated has increased but there is no management. This is dangerous because it leads to greenwashing and discredits the whole concept of MPAs.”*

Under Article 6(3) of the Habitats Directive projects likely to inflict changes on Natura 2000 sites must be assessed to ensure they don't infringe on conservation objectives. Although Member States have established systems to analyse such projects, the assessments have been found to not comprehensively analyse habitats and species impacts,³³² thus potentially undermining Natura 2000 objectives. Furthermore, a significant portion of assessments do not consider the cumulative impacts of projects-meaning the damaging impacts could be undetected.³³³

In order for biodiversity protection and conservation to be effectively implemented, funding is required to be delivered from a combination of sources (EU, Member State and private sources). Both EU and national funding for Natura 2000 have been found to be insufficient and that available resources are not fully exploited in the most effective manner and for the most effective purposes, despite the Birds and Habitats Directives increasing the availability of some EU funds (such as the LIFE programme, CAP, EMFF and the Cohesion Funds) for conservation purposes. Such funding limitations also impact the monitoring of Natura 2000,³³⁴ thus undermining their overall effectiveness. The lack of funding also links to the outlined barriers in Figure 4-14, where the lack of political support can directly correlate with respective funding levels and effective implementation of objectives.³³⁵

In relation to the ecological effectiveness of the N2000 network, the EEA State of Nature 2020 Report outlines four key factors which limit the impacts of Natura 2000, including: the selection of sites; management and monitoring practices; lack of coherence with other policy domains; consideration of global and local challenges, particularly in the long-term.³³⁶ Inefficient site selection has been noted for various sites, often linking sites to economic rather than environmental objectives.³³⁷ The absence of reliable data or communication of existing data has led to bottlenecks of the use of data by decision makers, hindering the development of integrative approaches to addresses conflicts and trade-offs of various actors and policies.³³⁸ Finally, the lack of time-bound conservation objectives within Natura 2000 management plans³³⁹ could raise doubts about the ability of management to integrate adaptive approaches to align with potential climate change impacts. This is further undermined by the absence of a time-bound target to achieve favourable conservation status.

In regards to unintended consequences, the legal protection system of the Nature Directives has been found to positively influence non targeted species and habitats beyond Natura 2000.³⁴⁰ Studies have shown that this so called 'umbrella effect' from Natura 2000 provides significant added value to non-

³³² EEA (2020) The Natura 2000 protected areas network- Management effectiveness in the EU's Natura 2000 network of protected areas. Briefing No 11/2020

³³³ EEA (2020) The Natura 2000 protected areas network- Management effectiveness in the EU's Natura 2000 network of protected areas. Briefing No 11/2020

³³⁴ EC SWD (2016) 472 final, Fitness Check of the EU Nature Legislation (Birds and Habitats Directives)

³³⁵ EC SWD (2016) 472 final, Fitness Check of the EU Nature Legislation (Birds and Habitats Directives)

³³⁶ EEA (2020) State of nature in the EU- Results from reporting under the nature directives 2013-2018.

³³⁷ EEA (2020) State of nature in the EU- Results from reporting under the nature directives 2013-2018.

³³⁸ EEA (2020) State of nature in the EU- Results from reporting under the nature directives 2013-2018.

³³⁹ ECA (2017) Special Report No.1- More efforts needed to implement the Natura 2000 network to its full potential

³⁴⁰ Milieu et al (2016) Evaluation study to support the Fitness Check of the Birds and Habitats Directives, final report March 2016.

annex species, particularly birds and butterflies.³⁴¹ NGOs have noted that the Nature Directives have led to improved governance and conservation practices in many non-EU countries, predominantly due to the Nature Directives' impact on the Bern Convention.³⁴²

Target 2 Maintain and restore ecosystems and their services

A range of issues are noted as contributing to the lack of restoration activities in the EU (the limited restoration activity is outlined under EQ.1). To meet the objectives of Target 2, Member States have deployed various approaches ranging from the implementation of RPFs (as noted in earlier sections, only NL and DE), the development of national restoration strategies (as noted in case study for ES), the integration of restoration targets within biodiversity or other national strategy policy documents (as noted in the case studies for GR, LT, BG, SK) or the development of restoration-dedicated working groups (as noted in the case study for FI). The absence of significant progress in the development of RPFs is clearly a key barrier to the development of restoration activities. Such frameworks aimed at improving the quality, scale and consistency of ecosystem restoration, whilst also defining areas of intervention which can be used to target EU funds. Particularly on the latter point, parallels can be drawn to the PAFs which were developed in relation to Target 1. Here, Member States were obliged under Article 8(4) of the Habitats Directive to develop PAFs, whereas no obligation is placed on the development of RPFs under any legislation. This could point as a contributing factor to the contrasting/lack of approaches developed by Member States, and the lack of political priority for restoration activities, which is often noted as a key barrier (as noted in the Germany case study, outlined in Box 4-30 below).^{343,344,345}

Box 4-30 Barriers to restoration in Germany (excerpt from Germany Case Study, Appendix C)

Germany lacked a focused drive under a national framework for restoration at the national level, and there is a lack of information on progress. In the opinion of interviewees, existing initiatives did not occur because of the Strategy but rather alongside it. The major weakness is the lack of legally binding targets for the restoration of ecosystems³⁴⁶. There has been a lack of promotion of green infrastructure in rural areas under the National Green Infrastructure Concept, because in contrast to the urban area, no dedicated funding programme was developed.

Under Target 2, the European Commission offered to assist Member States in the development of their RPFs, however Member States concluded that these activities should be implemented nationally without EU coordination.³⁴⁷ As such, no coherent approach to restoration, nor the integration of restoration requirements into sectoral policies have taken place,³⁴⁸ which can ultimately lead to a deficiency in

³⁴¹ Van der Sluis et al., How much biodiversity is in Natura 2000? The "Umbrella Effect" of the European Natura 2000 protected area network, Technical Report.

³⁴² Milieu et al (2016) Evaluation study to support the Fitness Check of the Birds and Habitats Directives, final report March 2016.

³⁴³ Fisher et al., (2019). What is hampering the effectiveness of existing approaches that aim to restore biodiversity and ecosystem function and services? A report of the EKLIPSE project.

³⁴⁴ Cortina-Segarra, et al., (2021) Barriers to ecological restoration in Europe: expert perspectives. *Restoration Ecology*.

³⁴⁵ Eftic et al., 2017, Technical support in relation to the promotion of ecosystem restoration in the context of the EU biodiversity Strategy to 2020

³⁴⁶ Pers. Comm. Interviews with NABU, BUND and BfN

³⁴⁷ Cortina-Segarra, et al., (2021) Barriers to ecological restoration in Europe: expert perspectives. *Restoration Ecology*.

³⁴⁸ UNEP-WCMC, IEEP, Trinomics (2019) EU Conference on Biodiversity and Ecosystem Services: A common agenda to 2020 and beyond. Available at:

https://ec.europa.eu/environment/nature/biodiversity/strategy_2020/pdf/EU%20Biodiversity%20Conference%202019%20report%2020190912.pdf

coordinated action.³⁴⁹ This holds not only at national level, but also at EU-level, where despite the reference to ecosystem restoration taking place in various policy field, these often lack the requirement for actors to implement actions.³⁵⁰ This is also relevant for GI-related actions, where despite examples of good practice existing throughout Europe,³⁵¹ evidence suggests that there is often confusion about which governance level is responsible for the various components of GI planning, implementation and monitoring.³⁵² Studies have shown that this lack of coordinated, cross-sectoral action can lead to the continuation of subsidies which can lead to further ecosystem degradation, and ineffective/inefficient/inadequate funding which hinders the implementation of beneficial restoration policies (through the insufficient compensation for degraded ecosystems, hindering the implementation of integrated land use plans, and the low number of implemented stakeholder collaboration platforms).³⁵³ As noted throughout this study (particularly in the efficiency and relevance sections), the absence of legally binding legislation to ensure Member States implement (restoration) consistent and effective activities is often regarded as a key barrier to a number of Strategy Targets, including Target 2.

These issues are further exacerbated by uncertainty surrounding the Target itself. The ambiguity of the 15% target (the ecosystems it is referring to),³⁵⁴ how to measure the achievement of the objective,³⁵⁵ the unclarity of what restoration activities comprise of,³⁵⁶ and the absence of baseline information to define what ‘degraded’ ecosystems are.³⁵⁷ The last factor can be particularly pertinent, as this not only can create stakeholder conflicts over defining an ecosystem as degraded, it can lead to difficulties in prioritising cost-effective restoration actions and policies.³⁵⁸

Finally, funding is commonly cited as a key barrier to restoration.^{359, 360} Despite a range of instruments, both public and private existing, they are commonly inefficiently utilised.^{361, 362} This links to the aforementioned points, where coordination issues and lack of political will can limit funding availability and limit its effectiveness to address cross-sectoral, multistakeholder issues.

³⁴⁹ Cortina-Segarra, et al., (2021) Barriers to ecological restoration in Europe: expert perspectives. *Restoration Ecology*.

³⁵⁰ Eftec et al., 2017, Technical support in relation to the promotion of ecosystem restoration in the context of the EU biodiversity Strategy to 2020

³⁵¹ EC SWD (2019) 184 final, Review of progress on implementation of the EU green infrastructure strategy.

³⁵² Civic and Jones-Walters (2015) Implementing Green Infrastructure and Ecological Networks in Europe: Lessons Learned and Future Perspectives

³⁵³ Fisher et al., (2019). What is hampering the effectiveness of existing approaches that aim to restore biodiversity and ecosystem function and services? A report of the EKLIPSE project.

³⁵⁴ Tucker et al., (2013) Estimation of the financing needs to implement Target 2 of the EU Biodiversity Strategy. Report to the European Commission. Institute for European Environmental Policy

³⁵⁵ ECA (2020) Biodiversity on farmland: CAP contribution has not halted the decline, Special Report No.13.

³⁵⁶ Tucker et al., (2013) Estimation of the financing needs to implement Target 2 of the EU Biodiversity Strategy. Report to the European Commission. Institute for European Environmental Policy

³⁵⁷ Cortina-Segarra, et al., (2021) Barriers to ecological restoration in Europe: expert perspectives. *Restoration Ecology*.

³⁵⁸ Eftec et al., 2017, Technical support in relation to the promotion of ecosystem restoration in the context of the EU biodiversity Strategy to 2020

³⁵⁹ Eftec et al., 2017, Technical support in relation to the promotion of ecosystem restoration in the context of the EU biodiversity Strategy to 2020

³⁶⁰ Cortina-Segarra, et al., (2021) Barriers to ecological restoration in Europe: expert perspectives. *Restoration Ecology*.

³⁶¹ Eftec et al., 2017, Technical support in relation to the promotion of ecosystem restoration in the context of the EU biodiversity Strategy to 2020

³⁶² Cortina-Segarra, et al., (2021) Barriers to ecological restoration in Europe: expert perspectives. *Restoration Ecology*.

Target 3A Agriculture

Cross-compliance is a link between CAP payments and the respect of EU legislative rules, in particular for biodiversity. When a farmer does not comply with these rules, CAP payments received may be reduced in proportion of the severity of the infringement.³⁶³ However, penalties for infringements if farmers do not abide by such measures are considered too low to act as a sufficient deterrent.³⁶⁴ Furthermore, penalties applied to farmers for not meeting cross-compliance requirements for exceeding pollution thresholds are not estimated based on the cost of environmental damage caused. As such, the polluter-pays-principle is not fully recognised.³⁶⁵

GAEC measures implemented by Member States are not monitored in relation to their adequacy to achieve environmental objectives. Monitoring of GAECs is completed from a legal perspective, meaning that MS variations in GAEC requirements are often not taken into consideration.³⁶⁶ This can lead to significant differences in the effectiveness of similar GAEC measures in Member States, with Member States able to adjust GAEC (and/or SMR) standards applied to farmers.³⁶⁷

As noted under EQ 1.1- 1.3, the impact of greening measures under the CAP have been limited. The lack of a fully developed intervention logic for greening measures has resulted in a lack of clearly defined targets and linkage to subsequent budgetary lines. As a result, the budget allocation to greening measures is not based on the delivery of environmental objectives, whilst the measures (as currently implemented) are unlikely to benefit the environment.³⁶⁸ This is largely because of the perceived administrative burden bias of farmers to choose less effective measures- highlighted by the relatively high uptake of EFA options that offer limited environmental improvements.³⁶⁹

Box 4-31 Effectiveness of greening measures in Germany and Romania (excerpt from Germany and Romania case studies, Appendix C)

There is evidence pointing to the effectiveness of the greening measures in Germany, which are regarded as having supported conventional agricultural practices that have little to no additional biodiversity benefits. A review of the EFA options selected by farmers in the first two years concluded that the conservation effect of the EFAs has been limited largely because farmers have the option of selecting types of EFAs that are easy to implement but that have little to no impact on biodiversity, and farmers have a low risk of incurring penalties.³⁷⁰ The ecological focus areas obligation has increased the conservation relevant area only by about 1% of farmland.^{371,372}

³⁶³ ECA (2020) Special Report No.13, Biodiversity on farmland: CAP contribution has not halted the decline, Replies of the Commission

³⁶⁴ Milieu et al (2016) Evaluation study to support the Fitness Check of the Birds and Habitats Directives, final report March 2016.

³⁶⁵ ECA (2014) Integration of EU water policy objectives with the CAP: a partial success

³⁶⁶ ECA (2014) Integration of EU water policy objectives with the CAP: a partial success

³⁶⁷ ECA (2020), Special Report No.13, Biodiversity on farmland: CAP contribution has not halted the decline, Replies of the Commission

³⁶⁸ ECA (2017) Greening: a more complex income support scheme, not yet environmentally effective

³⁶⁹ Pe'er et al (2017). Is the CAP fit for purpose? An evidence-based fitness check assessment.

³⁷⁰ Zinngrebe, et al., (2017) The EU's ecological focus areas - How experts explain farmers' choices in Germany, Land Use Policy, 65, pp. 93-108.

³⁷¹ BfN (2017) Agrar-Report 2017: Biologische Vielfalt in der Agrarlandschaft, Bonn, Germany: Bundesamt für Naturschutz. Available at: https://www.bfn.de/fileadmin/BfN/landwirtschaft/Dokumente/BfN-Agrar-Report_2017.pdf.

³⁷² Schoof et al., (2019) Grünlandschutz in Deutschland: Treiber der Biodiversität, Einfluss von Agrarumwelt- und Klimamaßnahmen, Ordnungsrecht, Molkereiwirtschaft und Auswirkungen der Klima- und Energiepolitik, Bonn: Bundesamt für Naturschutz. Available at: https://www.hs-rottenburg.net/fileadmin/user_upload/Forschung/Forschungsprojekte/Management/GAPGRUEN/BfN_Skript_539.pdf.

Similarly, in Romania relevant authorities (notably the Ministry of Agriculture and Rural Development) have taken a ‘line of least resistance’ regarding the implementation of ‘greening’ (of direct payments to farmers) in Romania and simply followed the main text of Articles 43-46 of Regulation (EU) No 1307/2013.³⁷⁴ This can be explained by the complexity and late approval of the ‘greening package’, and lack of institutional capacity of the relevant authorities. Opportunities for tailoring greening practices to suit the specific agronomic context of arable production in Romania (particularly in the lowland plain areas) and the challenges of climate change (e.g. water deficits, soil desertification) have been overlooked.³⁷⁵

Finally, the insufficient application and coverage of sustainable farming systems and the conservation of semi-natural farmlands has limited any positive biodiversity impacts.³⁷⁶ Inadequate designation of environmentally sensitive permanent grasslands throughout Europe also increases the vulnerability of such habitats to conventional farming practices which threaten biodiversity.³⁷⁷

Target 3B Forestry

In the majority of Member States, national forest legislation requires forest holdings to develop forest management plans or equivalent instruments to establish rural development support. Member States have been shown to establish significant variances in the thresholds required for the eligibility of such management plans or equivalent instruments, ranging from plans required for all forests to requiring plans only for forests larger than 100 hectares.³⁷⁸ As such, there is the potential for significant gaps in the coverage of management plans by Member States and the consequent availability of rural development funding. In targeted interviews, a business association stakeholder stated that the Strategy “did not take into account the diverse structure of forest ownership” when developing the Target 3B, meaning that Member States’ threshold variances are inevitable. Furthermore, biodiversity conservation measures are found to be lacking within forest management plans, particularly restoration activities, which are found to be rarely included in management plans.³⁷⁹ Overall, forest management plans commonly lack a holistic approach to biodiversity conservation and restoration³⁸⁰ which further undermines alleviating pressures stemming from competing policy objectives (bioenergy, bioeconomy, rural development, and water).³⁸¹

Box 4-32 Obstacles to achieving Target 3B in Greece (excerpt from Greece case study, Appendix C)

Although almost all Greek forests are covered by a management plan, many are old and outdated.³⁸² These plans are based on sustainable practices, but rarely integrate biodiversity restoration measures if they are not protected under the Natura 2000 network. In addition, evidence indicates that there is a low uptake of rural

³⁷³ EU (2013), Regulation (EU) No 1307/2013 of the European Parliament and of the Council of 17 December 2013 establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy and repealing Council Regulation (EC) No 637/2008 and Council Regulation (EC) No 73/2009

³⁷⁴ Redman, M, and Barbu, R. (2017). Evaluation study of the payment for agricultural practices beneficial for the climate and the environment (“greening” of direct payments). Case study on Romania

³⁷⁵ Redman, M, and Barbu, R. (2017). Evaluation study of the payment for agricultural practices beneficial for the climate and the environment (“greening” of direct payments). Case study on Romania

³⁷⁶ Pe’er et al (2017). Is the CAP fit for purpose? An evidence-based fitness check assessment.

³⁷⁷ EEA (2020) State of nature in the EU- Results from reporting under the nature directives 2013-2018.

³⁷⁸ Kantor Management Consultants (2015) Synthesis of ex-ante evaluations of rural development programmes 2014-2020, Final report.

³⁷⁹ NEPCon (2018) Study on Implementing Sustainable Forest Management According to the EU Biodiversity Strategy and the EU Bioeconomy Strategy, Final Report.

³⁸⁰ NEPCon (2018) Study on Implementing Sustainable Forest Management According to the EU Biodiversity Strategy and the EU Bioeconomy Strategy, Final Report.

³⁸¹ Lazdinis, Angelstam and Pölzl (2019) Towards sustainable forest management in the European Union through polycentric forest governance and an integrated landscape approach. *Landscape Ecology*, 34(7), 1737-1749.

³⁸² Source: Stakeholder interview

development measures and a low number of LIFE projects that target biodiversity in Greek forests. In terms of financing mechanisms to finance the maintenance and restoration of forests, payments for ecosystem services or other innovative mechanisms have not been deployed at any significant level.

Target 4 Ensure the sustainable use of fisheries resources

A key barrier to progressing towards Target 4 has been the challenges in implementing the landing obligation.³⁸³ Despite the landing obligation representing a fundamental paradigm shift in fisheries management towards ecosystem-based approaches,³⁸⁴ monitoring of discard approaches by Member States are not uniform,³⁸⁵ with the validity of discard estimates provided by fishers often deemed inaccurate.³⁸⁶ Furthermore, the lack of preparation by fishers to comply fully with the regulation has hindered progress,³⁸⁷ due to the insufficient knowledge to effectively and efficiently implement the obligation, in addition to the relatively short phasing in period (2015-2019).³⁸⁸ Such issues relate to the prohibitive costs of targeted fishing practices and the required logistics and markets to deal with unwanted catches (despite support offered under the EMFF 2014-2020 to contribute to the improvement of the selectivity of fishing gears and help support fishers in switching to lower-impact fishing practices).³⁸⁹ This is further exacerbated by the lack of coordinated and comprehensive approach to the implementation of the Landing Obligation, agreement on best practice, largely due to the lack of common understanding of how to apply and monitor the regulation,³⁹⁰ and lack of implementation of selectivity measures.³⁹¹

A lack of data is noted throughout literature as being a barrier to the implementation of sustainable fisheries management practices. The European Red List for marine habitats classified a large proportion of the habitats (49% in the EU28 and 53% in the EU28+) as Data Deficient (i.e. insufficient quantified data on trends to determine the status of habitats),³⁹² whereas NGO studies have found that EU-level data on marine protected area management practices are lacking, resulting in comparable data stemming from such management plans not being available.³⁹³ It should be noted here that EU legislation does not require marine protected areas to develop management plans.

Catch limits set by fisheries ministers are in certain instances established beyond catch limits estimated by scientific evidence.³⁹⁴ The lack of transparency in the establishment of catch limits by ministers undermine scientific advice on catch limits,³⁹⁵ with economic and political concerns jeopardising

³⁸³ Aranda et al., (2019) EU fisheries policy - latest developments and future challenges

³⁸⁴ Aranda et al., (2019) EU fisheries policy - latest developments and future challenges

³⁸⁵ STECF (2019) Evaluation of Member States' Annual Reports on the Landing Obligation (STECF-Adhoc- 20-02), Scientific, Technical and Economic Committee for Fisheries

³⁸⁶ Uhlmann, Ulrich and Kennelly (2019) The European Landing Obligation: Reducing Discards in Complex, Multi-Species and Multi-Jurisdictional Fisheries (p. 431); EC COM (2019) 274 final, The State of Play of the Common Fisheries Policy and Consultation on the Fishing Opportunities for 2020

³⁸⁷ WWF (2018) Facing up to the Landing Obligation. A challenge for European Fisheries.

³⁸⁸ Karp et al., (2019) Strategies used throughout the world to manage fisheries discards-Lessons for implementation of the EU Landing Obligation. In The European Landing Obligation (pp. 3-26)

³⁸⁹ WWF (2018) Facing up to the Landing Obligation. A challenge for European Fisheries.

³⁹⁰ MINOUW (2019) The Landing Obligation: what are the barriers to success? Available at: <http://minouw-project.eu/the-landing-obligation-what-are-the-barriers-to-success/>

³⁹¹ Rihan (2018) Research for the PECH Committee- Landing obligation and choke species in multispecies and mixed fisheries- The North Western Waters, European Parliament.

³⁹² Gubbay et al. (2016) European Red List of Habitats. Part 1. Marine habitats

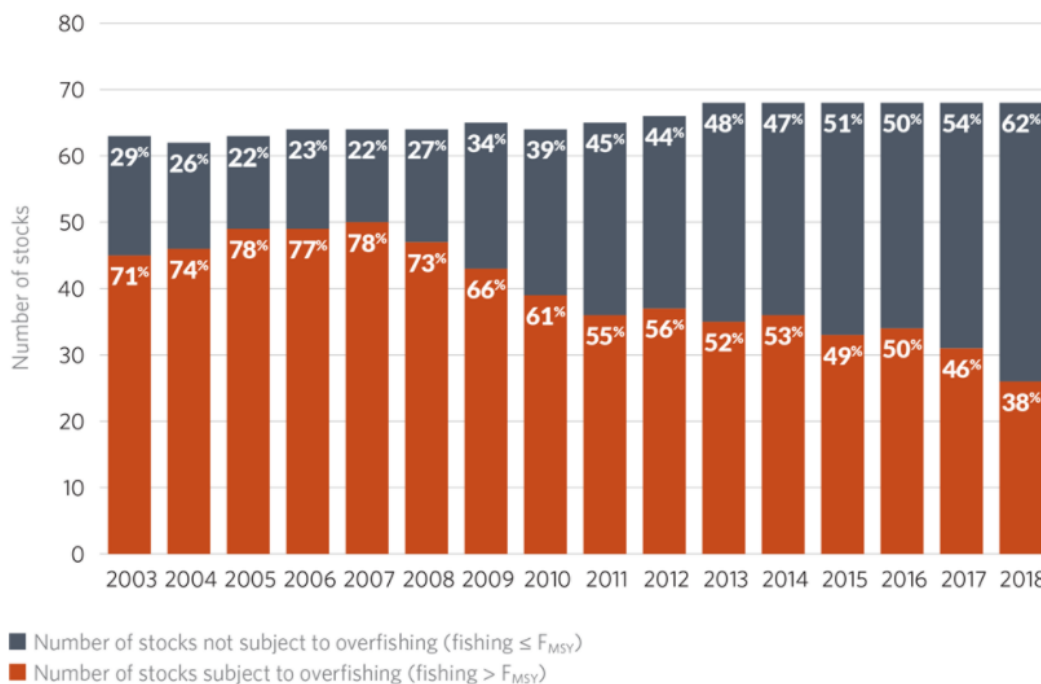
³⁹³ WWF (2019) Protecting Our Ocean- Europe's challenge to meet the 2020 deadlines

³⁹⁴ The Pew Charitable Trusts (2020) EU Fisheries Management Still Not in Line With Scientific Advice Despite 2020 Deadline. Available at: <https://www.pewtrusts.org/en/research-and-analysis/articles/2020/09/02/eu-fisheries-management-still-not-in-line-with-scientific-advice-despite-2020-deadline>

³⁹⁵ The Pew Charitable Trusts (2020) EU Fisheries Management Still Not in Line With Scientific Advice Despite 2020 Deadline. Available at: <https://www.pewtrusts.org/en/research-and-analysis/articles/2020/09/02/eu-fisheries-management-still-not-in-line-with-scientific-advice-despite-2020-deadline>

sustainable fish stock management.³⁹⁶ This results in, as stated in the STECF (2019) report, “many stocks remain overfished and/or outside safe biological limits, and that progress achieved until 2017 seems too slow to ensure that all stocks will be rebuilt and managed according to FMSY by 2020.”³⁹⁷

Figure 4-15 North-East Atlantic Stocks Subject to Overfishing



Source: Taken from: The Pew Charitable Trusts (2020) EU Fisheries Management Still Not in Line With Scientific Advice Despite 2020 Deadline. Available at: <https://www.pewtrusts.org/en/research-and-analysis/articles/2020/09/02/eu-fisheries-management-still-not-in-line-with-scientific-advice-despite-2020-deadline>; data based on STECF (2020) Monitoring the performance of the Common Fisheries Policy (STECF-Adhoc-20-01), Scientific, Technical and Economic Committee for Fisheries.

Target 5 Combat invasive alien species

The predominant hindrances to progressing Target 5 objectives relates to the knowledge gaps that surround various aspects of invasive alien species. For instance, data on the impacts of interregional flows and global trade on invasive alien species is lacking.³⁹⁸ Such data gaps can be particularly problematic as it can lead to assigning a ‘lower consequence’ of risk in species assessments,^{399, 400} possibly underestimating actions to required to tackle certain invasive species and thus making it challenging to include such species in the Union List.

Box 4-33 Barriers to invasive alien species management in Bulgaria (excerpt from Bulgaria Case Study, Appendix C)

³⁹⁶ Khalilian et al., (2010) Designed for failure: A critique of the Common Fisheries Policy of the European Union, Marine Policy, 34(6), 1178-1182.

³⁹⁷ STECF (2019) Monitoring the performance of the Common Fisheries Policy (STECF-Adhoc-19-01), Scientific, Technical and Economic Committee for Fisheries

³⁹⁸ IPBES (2018) Summary for Policymakers of the IPBES regional assessment report on Biodiversity and Ecosystem Services for Europe and Central Asia.

³⁹⁹ Verbrugge, et al., (2019) Lessons learned from rapid environmental risk assessments for prioritization of alien species using expert panels. Journal of environmental management, 249.

⁴⁰⁰ Roy et al., (2019) Developing a list of invasive alien species likely to threaten biodiversity and ecosystems in the European Union. Global Change Biology, 25(3), 1032-1048.

Although Bulgaria has made advances in achieving target 5 of the Strategy, the identification of IAS is still not recognised as a priority, which brings about reduced control (survey results). An expert from the Bulgarian Academy of Science expressed the opinion that while the early warning of the presence of IAS might be considered more advanced, the quick response to handling the species is a challenge, because currently there is no clear division of responsibilities nor a sound procedure for registering invasive alien species. Another issue to be noted is the strict expertise needed for managing the IAS and the lack of capacity in the regional structures of the Ministry of Environment and Water, currently managing the actions related to IAS.

A key component to managing the risks posed by invasive alien species is high public awareness and consequent behaviours to minimise invasive alien species spread.^{401, 402} Public awareness in certain regions of the EU is low,⁴⁰³ resulting in challenges ensuring that responsible behaviours are enacted.

Finally, the absence of dedicated financial mechanisms and the initial scope of the Union List (in addition to the rate at which species can be introduced on the List) are perceived to be the main reasons hindering progress towards controlling, eradicating and managing invasive species.⁴⁰⁴

Target 6 Help avert global biodiversity loss

Progress to Target 6 has been uneven and assessments clearly indicate that the loss of biodiversity and ecosystem services continues globally. Progress on tackling harmful subsidies has been hampered in the absence of a systematic inventory of harmful subsidies, ultimately exacerbating not only biodiversity loss,⁴⁰⁵ but other forms of environmental degradation.⁴⁰⁶

EU contributions to the conservation and sustainable use of biodiversity through various funding mechanisms (as highlighted under the EQ 1 Target 6 analysis) funding has greatly increased.⁴⁰⁷ While individual projects showing positive results/outcomes have significantly increased, their impact remains difficult to assess more generally due to lack of accurate indicators to track specific biodiversity impacts at national, regional or local levels, to difficulties of attribution and to the fact that despite positive local impacts and foundational work, projects financed to date often do not have the critical mass to reverse the heavy trends of biodiversity loss.⁴⁰⁸

EU Free Trade Agreements impacts are often assessed through Social Impact Assessments (SIA), yet details on the means of the assessment are often not specified and left to be determined by individual SIA coordinators.⁴⁰⁹ A key shortcoming in the application of SIAs includes a lack of detail on guidance /

⁴⁰¹ Genovesi et al., (2014) EU adopts innovative legislation on invasive species: a step towards a global response to biological invasions? *Biological Invasions*, 17(5), 1307-1311.

⁴⁰² IASEG (2019) Minutes of the 4th Meeting of the Invasive Alien Species Expert Group (IASEG). Available at: <https://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupMeetingDoc&docid=42289>

⁴⁰³ Genovesi et al., (2014) EU adopts innovative legislation on invasive species: a step towards a global response to biological invasions? *Biological Invasions*, 17(5), 1307-1311.

⁴⁰⁴ Genovesi et al., (2014) EU adopts innovative legislation on invasive species: a step towards a global response to biological invasions? *Biological Invasions*, 17(5), 1307-1311.

⁴⁰⁵ European Habitats Forum, 2019, The Implementation of the EU 2020 Biodiversity Strategy and recommendations for the post 2020 Biodiversity Strategy.

⁴⁰⁶ Langhout, (2019) The EU Biodiversity Strategy Progress report 2011 - 2018

⁴⁰⁷ EC SWD (2018) Investing in Sustainable Development- The EU at the forefront in implementing the Addis Ababa Action Agenda. Available at: https://ec.europa.eu/international-partnerships/system/files/investing-in-sustainable-dev-report-april-2018_en.pdf

⁴⁰⁸ Stepping and Meijer (2018), The Challenges of Assessing the Effectiveness of Biodiversity-Related Development Aid. *Tropical Conservation Science* Volume 11: 1-11.

⁴⁰⁹ Kuik et al., (2018) Trade Liberalisation and Biodiversity: Scoping Study: Methodologies and Indicators to Assess the Impact of Trade Liberalisation on Biodiversity (Ecosystems and Ecosystem Services). European Commission, DG Environment.

clarification on the minimum resources to be spent and tools (qualitative/quantitative) to be used to ascertain impacts. As such, inconsistencies arise between individual assessments carried out- ultimately resulting in difficulties assessing their effectiveness at averting biodiversity loss.⁴¹⁰ A Commission has contracted a study to develop a methodology to strengthen the assessment of biodiversity impacts in Trade Agreements.

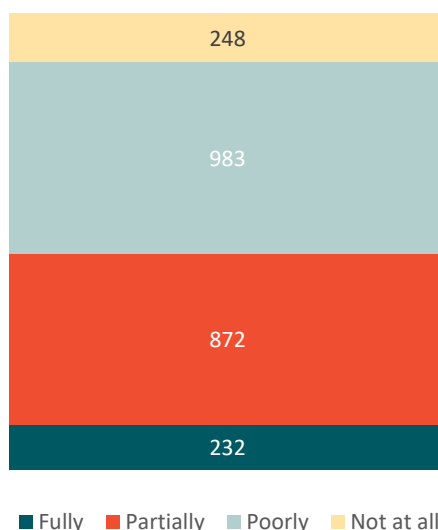
4.2.4 EQ 4 To what extent have stakeholders been actively engaged in the strategy's implementation?

Evaluation Question 10 gives an overview of stakeholder engagement during the development of the Strategy, whilst examples of stakeholders who could be considered to be not engaged with the implementation of the Strategy are given in Evaluation Question 3. Contrasting views from stakeholders on their engagement throughout the implementation of the Strategy were identified in literature and throughout consultation activities as part of this study. Multiple NGO stakeholders noted in interviews that the Strategy has provided a platform for a broad range of stakeholder views to be represented, through the likes of the Coordination Group for Biodiversity and Nature (CGBN), Business@Biodiversity Platform and various working groups, yet multiple interviewees noted the continued 'silo approaches' of communication between DG's can hinder holistic approaches to biodiversity policy. As one NGO interviewee noted in relation to the CGBN group: *"...it was extremely useful for coordination amongst ourselves (NGOs) but in terms of breaking silos and reaching out to other administrations that did not really happen. Even when the Commission were making the presentations DG ENV and AGRI spoke separately. Having a proper governance mechanisms with a whole of government approach could be something to take to 2030"*.

As part of the OPC, stakeholders were asked to reflect on the extent to which the Common Implementation Framework (CIF) of the Strategy ensured "Effective engagement of stakeholders in the design and implementation of EU biodiversity policy". As shown in Figure 4-15 below, the majority of stakeholders answered that the CIF had only partially (n=872, 37%) or poorly (n=983, 42%) engaged stakeholders. Few stakeholders provided an elaboration on their answers when prompted to do so, yet 10 stakeholders (3 environmental organisations, 2 EU citizens, 3 public authorities, 2 NGOs) noted that framework did not succeed in effective integrated implementation in particular at national/regional levels.

Figure 4-16 OPC responses to the question : "To what extent has the common implementation framework ensured effective engagement of stakeholders in the design and implementation of EU biodiversity policy?"
Number of responses outlined within each bar.

⁴¹⁰ Kuik et al., (2018) Trade Liberalisation and Biodiversity: Scoping Study: Methodologies and Indicators to Assess the Impact of Trade Liberalisation on Biodiversity (Ecosystems and Ecosystem Services). European Commission, DG Environment.



Beyond the OPC, such stakeholder concerns were also reflected in relation to Natura 2000 implementation, where a lack of participatory approaches at the local/site-level have been identified as a concern to Natura 2000 implementation,⁴¹¹ site-management decisions related to the Nature Directives,⁴¹² determining and prioritizing environmental measures in agriculture practices,⁴¹³ and the management of forests.⁴¹⁴ This was further corroborated during interviews, where a stakeholder (environmental organization) stated: *“The Strategy has increased the role of Europe at the global policy arena. At the national level, the strategy showed the general direction of the biodiversity policy and showed the action needed. However, there is a disconnect between the strategy and local action. The Strategy actually does not mention at all the need for local action. Contrary to the 2030 plan where local action seem to be the main driver combating biodiversity loss. To strengthen biodiversity work on the ground, the local governments should have role both in the implementation and have a say in the developments.”*

⁴¹¹ Blicharska et al., (2016) Contribution of social science to large scale biodiversity conservation: A review of research about the Natura 2000 network. *Biological Conservation*, 199, 110-122.

⁴¹² EC SWD (2016) 472 final, Fitness Check of the EU Nature Legislation.

⁴¹³ Alliance Environnement et al., (2019) Evaluation of the impact of the CAP on habitats, landscapes, biodiversity

⁴¹⁴ Soldi and Cavallini (2018) Sustainable Forest Management in Regions. Available at: <https://cor.europa.eu/en/engage/studies/Documents/sustainable-forest-management.pdf>

5 Analysis of efficiency

5.1 Introduction

The efficiency question explores whether the costs incurred at EU and Member State level by the implementation of the Strategy were proportionate to the benefits it generated. To examine the efficiency of the Strategy, the analysis focuses on three main evaluation questions, as presented in the evaluation matrix of this study:

To what extent has the Strategy been cost-effective? (EQ 5)

Was the Strategy the most appropriate instrument to achieve the EU biodiversity targets for 2020? (EQ 6)

What have been the socio-economic impacts of the Strategy? (EQ 7)

The work under each of these questions focused on the analysis of the relevant literature and was complemented by stakeholder input through interviews. This section presents the main results of this analysis.

5.2 Analysis of the evaluation questions

5.2.1 EQ 5 - *To what extent has the Strategy been cost-effective?*

According to the Better Regulation Guidelines⁴¹⁵, the question on how efficient an EU intervention has been “*should provide evidence on the actual costs and benefits, making clear what can be linked to the EU intervention and what cannot.*” However, several of the Strategy’s targets and actions aim at stimulating the implementation of existing legislation and the exact effect of the Strategy on the implementation of these commitments cannot be independently identified. In these cases, the actual costs and benefits that arose from the implementation of the Strategy cannot be estimated. For instance, Target 1 aims at the full implementation of the Nature Directives. Evidence shows a positive benefit-cost ratio of the Directives’ measures; however, due to the nature of actions within Target 1 and the lack of primary research exploring the attribution of changes over time to the Strategy, it is unclear how much the Strategy itself stimulated the implementation of any of these measures. Therefore, the analysis of whether the Strategy has been cost-effective focuses on the cost-effectiveness of the components of the targets and on the extent that these components were implemented to give rise to actual costs and benefits. The analysis also presents evidence where available about the Strategy’s influence on the emergence of these costs and benefits.

Cost-effectiveness refers to the relationship between the resources used to deliver on the targets of the Strategy (or burdens and costs, including opportunity costs) and the benefits generated by their implementation. The relevant sub-questions for examining the cost-effectiveness of the components of the Strategy are:

1. What are the costs incurred in delivering the Strategy? (EQ 5.1);
2. What are the benefits produced by the Strategy and how do they compare to the costs? (EQ 5.2);
3. How timely and efficient is the process for reporting and monitoring? (EQ 5.3);
4. Are there any factors that could have improved cost-effectiveness? (EQ 5.4).

⁴¹⁵ <https://ec.europa.eu/info/sites/info/files/better-regulation-guidelines.pdf>

As each target of the Strategy requires a different set of measures, tools, and actions, these questions are examined separately for each target.

Target 1

Since the target aimed at stimulating the full implementation of the Nature Directives, the analysis of the cost-effectiveness of Target 1 focuses on these Directives. Earlier studies have estimated the direct costs of maintaining the Natura 2000 network to be at least €5.8 billion per year across the EU for 2011 (including UK - excluding Croatia).⁴¹⁶ On top of this expenditure, additional costs emerge as administrative burden of compliance with the Directives, cost of damages caused by protected species (e.g. large carnivores), and opportunity costs of alternative developments of the protected areas. According to an ongoing study on the assessment of the financing costs of the Natura 2000 network based on the PAFs submitted by Member States, the current EU and national funding allocations to actions and sub-measures relevant for Natura 2000 in EU27 during the period 2014 - 2020 is around €25.5 billion, acknowledging data challenges in this area.⁴¹⁷ This indicates that the financing needs of the network were probably not covered by the realized funding, which is potentially one of the reasons of the limited progress towards achieving this Target 1 as observed under the Effectiveness analysis. The Fitness Check of the EU Nature Legislation also concluded to a similar result, as the availability of funding is the most important factor that affects the implementation of the Directive.⁴¹⁸ As regards the actions under this target, some (Action 1B, 1D, 3A, 3B, 3C, 4A) gave rise to additional costs, but these are considered minimal.

The benefits generated by the Natura 2000 network range from various ecosystem services to rural development benefits. The most comprehensive analysis of these benefits to date has been undertaken by ten Brink et al. (2011) who estimated that the total benefits of the network for 2011 range between €200 and €300 billion per year across the EU (including UK - excluding Croatia).⁴¹⁹ While much of the evidence on costs relates to the costs of measures required to implement the Directives, most evidence on benefits relates to the overall benefits of the Natura 2000 sites and species protected. As such, the benefits are not directly related to the outcomes of these measures, but they can clearly indicate the cost-effectiveness of actions that aim at maintaining or enhancing their provision. However, one of the major drivers of the delivery of these benefits by the Natura 2000 network is access to funding,⁴²⁰ which implies that many of these benefits have not emerged. As shown above, there are significant variances of magnitude in regards to the estimates of the costs and benefits of implementation of the Nature Directives (and by extension Target 1), yet the evidence overwhelmingly indicates that independently of the level of their implementation the benefits far exceed the costs. Finally, the establishment of Marine Protected Areas and subsequent conservation measures can also contribute to Natura 2000 objectives.⁴²¹ Studies have highlighted that Marine Protected Areas benefits can outweigh

⁴¹⁶ Gantioler et al., (2010). Costs and Socio-Economic Benefits associated with the Natura 2000 Network. Final report to the European Commission

⁴¹⁷ N2K Group and IEEP (in prep.) Strengthening investments in Natura 2000 and improving synergies with EU funding instruments. Contract Number: 07.0202/2018/775371/SER/ENV.D.3. Estimates of the aggregated financing costs of Natura 2000 from the Prioritised Action Frameworks 2021-2027.

⁴¹⁸ Milieu, IEEP, ICF (2016). Evaluation study to support the Fitness Check of the Birds and Habitats Directives, final report March 2016

⁴¹⁹ ten Brink et al. (2011). Estimating the Overall Economic Value of the Benefits provided by the Natura 2000 Network. Final Report to the European Commission

⁴²⁰ Tucker et al., (2019). Study on identifying the drivers of successful implementation of the Birds and Habitats Directives

⁴²¹ Approximately 7% of Marine Protected Areas are designated Natura 2000 sites- from, ICF, IEEP, PML (2018) Study on the Economic Benefits of MPAs

costs when incorporating societal welfare aspects, yet a lack of evaluations on the economic impacts of Marine Protected Areas in the EU exists.⁴²² Evaluation Question 7 presents further information on this.

With regard to the third sub-question related to the efficiency of reporting and monitoring under Target 1, the analysis focuses on the requirements of the Birds and Habitats Directives, since there are no additional requirements placed by the Strategy. The reporting and monitoring requirements of the Directives have increased the availability, quality, and standardisation of information.⁴²³ However, evidence from the Fitness Check of the EU Nature Legislation⁴²⁴ suggests that the Directives give rise to administrative burdens, which in some cases are significant. In general, however, these burdens are to a large extent necessary to implement the Directives and relatively small compared to their benefits⁴²⁵ (this is discussed further below under best practice). Moreover, unnecessary administrative burdens result mainly from national or regional implementation approaches rather than the Directives themselves.

Overall, evidence shows that the Nature Directives can generate substantial benefits through species and habitats protection and restoration, which can be many times greater than their implementation costs. This means that if Target 1 was fully implemented, the generated benefits could be expected to outweigh the relevant costs. However, progress towards achieving Target 1 has been limited (see Effectiveness), which implies that not all of these benefits have been generated. Consultation for this study has found support from Member State representatives that the Strategy prompted additional action at Member State level in relation to expansion of the Natura 2000 network. As mentioned in some of the Member State Case Studies and by several interviewed stakeholders, the Strategy did motivate action under this target, in particular in relation to expansion of the Natura 2000 network. As such, while it can be inferred that the Strategy contributed to these investments, the outcome is unverifiable and the exact amount cannot be estimated. Since also in some cases the Strategy did stimulate the implementation of the Directives, it can be inferred that **Target 1 produced overall cost-effective results.**

Target 2

The main source on cost estimates of Target 2 upon which several other studies build is Tucker et al. (2013)⁴²⁶. The study uses a detailed methodology and estimates the financing needs of one-off costs of restoration and maintenance of 15% of degraded ecosystems in addition to existing and expected measures. This is estimated at around €9.6 billion per year. Additional cost for maintaining conditions of all ecosystems was found to be between €618 and €1,660 million per year. However, this constitutes an estimated cost of what would be required for the full implementation of this target, not the cost actually incurred as a result of the realized actions. Since the current restoration activity is significantly below what would be required to fulfil Target 2, the realized total expenditure during the 2010-2020 period is significantly lower. Eftec et al. (2017)⁴²⁷ estimated that the costs of current activity under Target 2 in 2016 ranges between €4.8 million and €33.1 million; however, this estimation is

⁴²² ICF, IEEP, PML (2018) Study on the Economic Benefits of MPAs

⁴²³ Rayment et al. (2017). Support to the Fitness Check of monitoring and reporting obligations arising from EU environmental legislation

⁴²⁴ Milieu, IEEP, ICF (2016). Evaluation study to support the Fitness Check of the Birds and Habitats Directives, final report March 2016

⁴²⁵ EC SWD (2017) 230 final. Fitness Check of Reporting and Monitoring of EU Environment Policy (2017)

⁴²⁶ Tucker et al. (2013). Estimation of the financing needs to implement Target 2 of the EU Biodiversity Strategy

⁴²⁷ Eftec et al., 2017, Technical support in relation to the promotion of ecosystem restoration in the context of the EU biodiversity Strategy to 2020

highly uncertain and assumes the lowest unit cost restoration options included in the Tucker et al. (2013) study. UNEP-WCMC, FFI and ELP (2020)⁴²⁸ has compiled a database of over 400 ecosystem restoration projects in Europe⁴²⁹. According to this database, between 2010 and 2020 about €1.25 billion has been committed to these 400 projects (with restoration activities encompassing the restoration of ecosystems, conserving biodiversity within such ecosystems, or the targeting of specific ecosystem services to achieve restoration goals), restoring 11.6 million hectares of degraded terrestrial (85%) and freshwater and marine (15%) ecosystems across Europe.⁴³⁰ However, the database could not be used to provide a comprehensive estimation of investments under Target 2 as it does not include all restoration projects that took place in the EU in this period and it includes investments that took place in Natura 2000 sites, which risks double counting investments here and under the Nature Directives (Target 1). In terms of the actions of Target 2, MAES has generated minimal costs, as it is essentially a research project. In addition, Green Infrastructure received around €915 million per year by public EU funds between 2014 and 2020.⁴³¹

The benefits of the ecosystem restoration that took place under Target 2 cannot be easily monetised due to lack of systematically collated evidence on the restoration undertaken in the EU. Eftec et al. (2017) estimated the total economic activity associated with the current level of implementation to be between €11.5 and €79.5 million. Although these costs and benefits estimates are highly uncertain, they indicate that restoration activity in general generate higher benefits than costs. The cost-effectiveness of restoration activities is contextual as it depends on several factors (e.g. the type of ecosystem being restored, competing uses of the site, restoration approaches, etc.) and thus, it requires careful planning and long term management to ensure long-term provision of benefits. There are many examples in the literature that show the positive benefit cost ratio Vallecillo et al. (2018)⁴³² and Vallecillo et al. (2019)⁴³³ have shown the immense value of ecosystem services, such as crop pollination, carbon sequestration, outdoor recreation and flood protection. For instance, the value of the crop pollination service was estimated at more than €3 billion across the EU in 2006 and of outdoor recreation was conservatively estimated at €50 billion in the EU in 2012 (Vallecillo et al., 2018). Restoration of ecosystem can enhance the provision of these benefits. For example, restoring 46% of the world's degraded forests (the Bonn Challenge⁴³⁴) would generate between 7 and 30 times in benefits every euro spent.⁴³⁵

Although it is not always clear to what extent specific restoration activities generate greater benefits than cost, it is in general accepted that restoring and enhancing ecosystem services and maintaining the intrinsic value of ecosystems is a worthwhile investment, particularly for some specific ecosystems (e.g. inland and coastal wetlands, grasslands, and forests).

⁴²⁸ UNEP-WCMC, FFI and ELP (2020). Funding Ecosystem Restoration in Europe: A summary of funding trends and recommendations to inform practitioners, policymakers and funders. 24pp

⁴²⁹ Europe was defined as the 51 countries, territories and independent states within Europe, as defined by the Endangered Landscapes Programme.

⁴³⁰ A searchable database of all the projects analysed is available online at www.restorationfunders.com

⁴³¹ Trinomics et al., (2016). Supporting the Implementation of Green Infrastructure. Final Report

⁴³² Vallecillo et al., (2018). Ecosystem services accounting: Part I - Outdoor recreation and crop pollination, Publications Office of the European Union, Luxembourg

⁴³³ Vallecillo et al., (2019). Ecosystem services accounting. Part II-Pilot accounts for crop and timber provision, global climate regulation and flood control, Publications Office of the European Union, Luxembourg

⁴³⁴ <https://www.bonnchallenge.org/>

⁴³⁵ OECD (2019). Biodiversity: Finance and the Economic and Business Case for Action, report prepared for the G7 Environment Ministers' Meeting, 5-6 May 2019

In relation to specific actions against Target 2 of the Strategy, they were largely targeted at addressing key information gaps in relation to ecosystem services and developing strategic frameworks at EU, national and sub-national levels, aimed at addressing the overall target. It is not possible based on available evidence to establish the causal link from these actions to impacts on the ground, however it is likely that these supporting actions increased the effectiveness and efficiency of actions on the ground. However, as the specific restoration actions that were undertaken under Target 2 could not be identified, the cost-effectiveness of this target remains unclear. In addition, the limited restoration action in the EU and the deterioration of ecosystems and their services is exacerbated, hampering the delivery of net benefits.

Target 3

Since all of the Target 3A measures are implemented under the CAP, the analysis focuses mostly on it. The total costs and benefits provided by greening CAP have not been comprehensively studied in the literature. Although strong quantitative estimates are absent, some sources have indicated that CAP is inefficient in aspects of its environmental component. The European Court of Auditors has indicated that most direct payments under CAP do not enhance or maintain biodiversity in farmland.⁴³⁶ The same report mentions that about €66 billion has been spent on farmland biodiversity but the impact of CAP direct payments is limited or unknown. Pe'er et al. (2017) found that the CAP is inefficient in environmental investments versus benefits and that the benefits from the greening of CAP have not been realized.⁴³⁷ The same study indicated that the largest biodiversity-related investments within the CAP are made into the least effective measures from a biodiversity perspective. Moreover, a study for the European Commission that examined the efficiency of the CAP biodiversity-related instruments and measures concluded that they have not been optimised in a number of ways. As one example, within Member States' expenditure for Priority 4 of Rural Development budgets (Ecosystems related to agriculture and forestry), expenditure on Areas of Natural or other specific Constraint (ANC) (in most cases without any conditions to limit agricultural practices) was broadly equivalent to expenditure on much more biodiversity targeted Agri-environment-climate measures (AECM), and more than double the expenditure on organic farming.⁴³⁸ Quoting the report directly:

“The efficiency with which the CAP has delivered biodiversity benefits has not been optimal because greater benefits could have been secured for the available budget had Member States allocated more of their funding to the measures which deliver benefits for biodiversity most effectively, such as the AECM and Natura 2000 measures, rather than to other measures such as ANC.”

The biodiversity benefit/cost ratio of the CAP greening instruments were also found by the same study to be reduced in Member States where greening permanent grassland obligations were limited to only a small portion of grasslands requiring protection (within and outside Natura 2000 areas) and where farmers were allowed to earn green payments by Ecological Focus Area (EFA) options of little value to biodiversity, such as catch crops and N-fixing crops. However, the same study found the administrative costs of the biodiversity instruments to be proportionate, given to the complexity of some measures.

Analysis suggests the cost-effectiveness of implementation in relation to Target 3a (maximising agricultural areas that are covered by biodiversity-related measures under the CAP) For example, the

⁴³⁶ ECA (2020) Special Report 13/2020: Biodiversity on farmland: CAP contribution has not halted the decline

⁴³⁷ Pe'er et al., (2017). Is the CAP Fit for purpose? An evidence-based fitness-check assessment

⁴³⁸ Alliance Environment et al., (2019). Evaluation of the impact of the CAP on habitats, landscapes, biodiversity. Final Report

efficiency of AEEM payments is improved where their benefits cause the lowest cost to the farmer; the efficiency of organic farming is improved where it ensures high biodiversity benefits or low cost of obtaining biodiversity benefits; and EFA measures can be cost-effective when they bring higher benefits to biodiversity (e.g. fallow and landscape features as opposed to catch crops and N-fixing crops) and where these measures provide at a low cost to the farmer additional biodiversity protection (than, say, cross-compliance).⁴³⁹

The main costs associated with the implementation of Target 3b refer to the development and implementation of management plans for forests that are not already covered by one (Action 11a) and the update of existing ones to integrate biodiversity-related measures (Action 12). The cost of developing and implementing Forest Management Plans, the cornerstone requirement of this Target, as well as the estimation of the benefits they have generated could not be found in the literature and the stakeholder interviews and the Member State case studies did not provide much information on this. In general, funding for forestry-related actions were mostly realised through the Member States' Rural Development Plans (RDPs). Between 2014 and 2020, 90% of the RDPs developed by Member States included at least one forest-related measure, which totalled €8.2 billion of public expenditure (EAFRD + national/regional co-financing).⁴⁴⁰ However, this was not solely invested in biodiversity-related activities. In terms of Action 11b, in addition to the RDPs, which devoted 1% of total RDP budget to payment for ecosystem services (PES),⁴⁴¹ the Natural Capital Financing Facility leveraged up to €150 million for forestry projects on PES, green infrastructure, innovative pro-biodiversity and adaptation investment, and biodiversity offsets.⁴⁴² However, EEA (2016) indicated that PES for forest ecosystems have contributed only a minor amount to the income of forest owners.⁴⁴³

Target 4

This target focuses on maintaining and restoring fish stocks and achieving Good Environmental Status, which is mainly contributed through the Common Fisheries Policy (CFP) and the Marine Strategy Framework Directive (MSFD). Therefore, the efficiency question refers mostly to the cost-effectiveness of achieving biodiversity-related objectives of the CFP and MSFD. There is no concrete quantitative evidence in the literature on the costs and benefits of biodiversity action undertaken under the CFP and MSFD. The 2020 annual economic report on the EU fishing fleet showed that the EU fleet maintained the high levels of net profits, totalling €1 billion in 2018, which is mainly a result of the use of sustainable fishing methods.⁴⁴⁴ The benefits of the MSFD are related to the maintenance of marine biodiversity and ecosystems and a series of socio-economic benefits which are discussed under EQ 7. The funding allocated to biodiversity through the European Maritime and Fisheries Fund (EMFF) is estimated at around €199 million in 2015, €134 million in 2016, €136 million in 2017,⁴⁴⁵ €90 million in 2018⁴⁴⁶ and €128 million in 2019.⁴⁴⁷ The funding allocated here only includes funding directed to

⁴³⁹ Alliance Environment et al., (2019). Evaluation of the impact of the CAP on habitats, landscapes, biodiversity. Final Report

⁴⁴⁰ EC (2018). Progress in the implementation of the EU Forest Strategy.

⁴⁴¹ Alliance Environment (2017). Evaluation study of the forestry measures under Rural Development. Final report

⁴⁴² EFI, BOKU, Alterra, UNI Freiburg, ALU-FR (2019) Study on the progress in implementing the EU Forest Strategy. Final Report

⁴⁴³ EEA (2016) European forest ecosystems – State and Trends. EEA Report No 5/2016

⁴⁴⁴ STECF (2020) The 2019 Annual Economic Report on the EU Fishing Fleet (STECF 20-06), Scientific, Technical and Economic Committee for Fisheries.

⁴⁴⁵ EY and Biotope (2017). Study on biodiversity financing and tracking biodiversity-related expenditures in the EU budget.

⁴⁴⁶ EC (2019) FAME SU, EMFF implementation report 2018

⁴⁴⁷ EC (2020) FAME SU, EMFF implementation report 2019

measures implemented under Article 40(1)(b-g,i), which relate to the protection and restoration of marine biodiversity. When including broader measures which have the potential to contribute to biodiversity, the figures are significantly higher.

The benefits provided by healthy fish stocks and oceans are immeasurable. EU and international studies have shown that investments in protection of marine biodiversity can generate high economic returns in enhanced yields, higher quality fish products, and tourism.⁴⁴⁸ However, as stated above, a comprehensive overview of the costs and benefits of actions related to Target 4 is not present throughout literature.

Target 5

The costs of implementing Target 5 are those that arise from the Invasive Species Regulation, which was estimated in the accompanying Impact Assessment to be around €1.43 billion per year.⁴⁴⁹ Most Member States were not able to give in their reports under Article 24 of the IAS Regulation in 2019 any concrete estimations of the costs incurred from the application of the Regulation. Main reason was that costs are rarely attributed to exclusively IAS-related projects but are often integrated together with other objectives and procedures (e.g. official controls under Article 15 of the IAS Regulation are undertaken by competent authorities for the plant and health official controls). Costs of tackling IAS through regulation include costs to the EU and national governments of the intervention itself, direct costs to affected parties in responding to the regulation, and indirect costs (opportunity costs) to those whose activities might be impeded by the intervention.

The benefits of tackling IAS can be indicated by the avoided cost of damage from IAS. IAS, among others, can harm ecosystems, cause health problems, damage infrastructure, and cause agricultural losses. These damages were estimated to cost the EU at least €12 billion per year in 2009.⁴⁵⁰ It is considered, however, to be an underestimation of the current value, as it refers to a situation more than a decade ago and the IAS problem has steadily grown since then. On the other hand, the Regulation has not reached a level of implementation that can cause significant mitigation of these damages. The evidence suggests that the net benefits in controlling IAS will be increasing as the Regulation implementation (including expansion of Union list) advances. However, action to date has focused on creating the framework to tackle IAS and **most of these costs and benefits are therefore yet to be seen.**

It is notable that the literature on cost-effectiveness of IAS management suggests that the cost-effectiveness of preventative measures and early intervention far exceed the cost-effectiveness of IAS management once an invasive species has become established.⁴⁵¹ As such, the boost to IAS preparedness and the additional expenditure by Member States in response to the IAS Regulation is likely to be highly cost-effective expenditure.

⁴⁴⁸ ICF, IEEP, PML (2018). Study on the economic benefits of marine protected areas. Literature review analysis.

⁴⁴⁹ EC SWD (2013) 321 final Impact Assessment Accompanying the Proposal for a Council and European Parliament Regulation on the prevention and management of the introduction and spread of invasive alien species.

⁴⁵⁰ Kettunen et al., (2009) Technical support to EU strategy on invasive species (IAS) - Assessment of the impacts of IAS in Europe and the EU. Institute for European Environmental Policy (IEEP)

⁴⁵¹ Arthur, Summerson, & Mazur, (2015) A comparison of the costs and effectiveness of prevention, eradication, containment and asset protection of invasive marine pest incursions ABARES report to client prepared for the Biosecurity Animal Division of the Department of Agriculture, Canberra, June. CC BY 3.0.

Target 6

As noted in the Effectiveness section, financing from the EC, Member States and private sources for Target 6 has increased significantly since 2010. However, estimates of the scale of benefit delivered from this expenditure, and the scale of attribution to the Strategy are not possible based on available evidence, making assessment of the cost-effectiveness of implementation of Target 6 challenging.

Based on available evidence, it is possible to collate some data on expenditures within the EU from different sources. Over the past decade, the EU has supported many biodiversity-related initiatives outside of its borders. Between 2011 and 2015, the EU invested more than €1 billion in such projects and had earmarked €1 billion more for the period 2014-2020.⁴⁵² The EU is committed to the fight against wildlife trafficking as well. Through its Action Plan Against Wildlife Trafficking, the EU has spent around €340 million on projects implementing wildlife trafficking-related actions in countries in Africa, Asia, and South America.⁴⁵³ The precise information on cost-benefit analysis of implementing of the Nagoya Protocol is not available. However, the High-Level Panel on Resource Mobilization estimated that the resources required for building and developing capacity for the Nagoya Protocol ranges between US\$55 million and US\$313 million (between around €47 and €270 million in 2020 prices).⁴⁵⁴ This is an estimate of one-off investments over 2013 to 2020 without any estimates for recurring costs and refers to 197 countries.

It is not possible to estimate the benefits for the EU-27 resulting from this international biodiversity action. Scientific literature indicates that the global value of crop pollination, water purification, flood protection and carbon sequestration reach up to US\$125-140 trillion (€108-121 trillion). The global cost of inaction has been estimated at around US\$4-20 trillion (€3.5-17.5 trillion) per year in ecosystem services from 1997 to 2011.⁴⁵⁵

5.2.2 EQ 6 - Was the Strategy the most appropriate instrument to achieve the EU biodiversity targets to 2020?

In considering the most appropriate instrument to achieve the 2020 targets, a number of potential policy instruments could be considered. These instruments can be broadly divided into three main categories - namely i) regulatory instruments; ii) market-based and financing instruments, and iii) voluntary instruments.⁴⁵⁶ The Strategy constitutes a largely non-binding communication from which few legal obligations arise directly for the Commission, for the Member States or for other stakeholders. As a result, in most cases there are no legal penalties arising from not meeting the targets and actions of the Strategy. As such the Strategy can be considered largely a voluntary instrument, as it mostly focuses on political will, and the benefits of information development and dissemination.

Several literature sources as well as consulted stakeholders recognise the non-binding nature of the targets and actions as an important shortcoming of the Strategy. In addition, the Parliament has adopted a resolution in January 2020 calling upon the Commission to “move away from voluntary commitments and to propose an ambitious and inclusive Strategy that sets legally (and, consequently, enforceable) binding targets for the EU and its Member States”. Therefore, this question examines

⁴⁵² EC (n.d.). European Union support for sustainable use and conservation of nature in developing countries. Available at: https://ec.europa.eu/international-partnerships/topics/ecosystems-and-biodiversity_en

⁴⁵³ EC (2018). Progress report on the implementation of the EU Action Plan against Wildlife Trafficking. SWD(2018) 452 final

⁴⁵⁴ CBD (2014). CBD Technical Series No. 78: Progress toward the Aichi Biodiversity Targets: An Assessment of Biodiversity Trends, Policy Scenarios and Key Actions, Secretariat of the Convention on Biological Diversity.

⁴⁵⁵ OECD (2019). Biodiversity: Finance and the Economic and Business Case for Action, report prepared for the G7 Environment Ministers' Meeting, 5-6 May 2019

⁴⁵⁶ EEA (2005). Market-based instruments for environmental policy in Europe, EEA Technical Report, No. 8/2005.

whether alternative policy tools (such as regulatory instruments) or financing instruments (including those which are currently used to a limited extent) would have the potential to more fully deliver on the targets in a cost-effective manner. More specifically, the analysis focuses on the following evaluation sub-questions:

1. What types of alternative instruments could have been considered for implementation? (EQ 6.1);
2. What would have been the pros and cons of alternative options, compared to the Strategy? (EQ 6.2).

The two broad types of instruments examined under this question are regulatory instruments, such as directives and regulation, and market-based instruments. Market-based and financing instruments include Payments for Ecosystem Services, environmental fiscal instruments (Ecological Fiscal Transfer, environmental taxes, fees and charges) and marketed products for biodiversity conservation. Some of these tools are already implemented to a different degree by some MS; however, their implementation is not widespread. Moreover, Payments of Ecosystem Services are explicitly mentioned in the Strategy (Action 11b), but this relates only to forestry and their use remains marginal. The objective of the analysis is not to select the most appropriate instrument, but rather examine their attributes and through this assess whether a different policy mix could have benefited the implementation of the Strategy. The analysis assesses their strengths and weaknesses as well as their potential of being widely adopted by EU and national authorities.

Legislative and regulatory instruments to influence actors' behaviour, so called 'command and control' measures, can be deployed for environmental policies. As the 'command and control' name suggests, regulatory instruments rely less on the cooperation and willingness of stakeholders than do market-based instruments. Instead, they ensure that actors comply with the prescribed rules even if they do not wish to do so. Regulatory instruments are used to denote a range of laws and regulations, but can be broadly of two kinds; prohibitive (i.e. they forbid certain kinds of behaviour) and prescriptive (i.e. they require certain types of behaviour).

The literature review showed that regulatory instruments are the main tool for environmental policy and have been widely used at EU level. Their use entails some clear advantages compared to voluntary or market-based instruments. A positive element that derives from their compulsory legal nature is that they can achieve a high level of compliance and equitable implementation among actors.⁴⁵⁷ As regulatory instruments set specific requirements to be achieved, stakeholders are forced to act towards the prescribed direction. For instance, as mentioned in the Fitness Check of the Nature Directives, which are an example of legally binding instruments, the Directives introduced higher standards of site protection in Germany and many other Member States, which would probably not have been introduced if it was not for the legally binding requirements.⁴⁵⁸ Moreover, such regulatory instruments enable enforcement of implementation across the EU by initiating infringement proceedings against Member States when certain requirements are not met. For instance, as mentioned by several interviewed stakeholders from Greece, the cases of the Court of Justice against Greece for non-compliance with Articles of the Directives, has stimulated a more effective implementation of the Directives. This has

⁴⁵⁷ Bouwma et al., (2015) Policy instruments and modes of governance in environmental policies of the European Union: Past, present and future

⁴⁵⁸ Milieu, IEEP, ICF (2016). Evaluation study to support the Fitness Check of the Birds and Habitats Directives, final report March 2016

also been the case for all other Member States. An additional advantage is that regulatory approaches increase predictability of governmental action and estimation of ex-ante results.⁴⁵⁹

A main disadvantage of regulatory instruments is that they may represent a less cost-effective option than some alternatives in some contexts, and have a more rigid approach that cannot be easily adjusted to accommodate changes.⁴⁶⁰ The costs imposed by the regulatory instruments are borne by all those who are regulated, without considering the marginal abatement costs of different the actors, which could lead to a less efficient (higher total costs) solution to an environmental problem. Since regulatory instruments provide a static setting, which requires equal implementation by all actors, they can also often result in a less cost-effective result than what could have been otherwise realised through other means, such as market-based instruments. It is noted that EU Directives allow for a certain flexibility in implementation (allowing Member States to develop their own means of implementation), and that EU regulatory process allows for periodic review and update of regulatory instruments to minimise this downside. In addition, some regulatory approaches that aim for a specific outcome may not encourage increased ambition among stakeholders beyond that outcome. However, regulations could also cause a shift of behaviour and increase action of stakeholders under the new norm.

Market-based instruments include a wide range of tools that do not aim at imposing a certain behaviour, but rather affecting individual action by using economic (dis)incentives. They are a means to implement the Polluter Pays Principle (as set out in the Treaty). Available evidence suggests a widespread failure to properly charge for pollution in the EU⁴⁶¹.

Public funding incentives through EU funds, such as ‘greening’ incentives through the CAP, are also included in this category. These instruments can be both binding and non-binding. Payments for Ecosystems Services (PES) are a popular instrument for financing biodiversity to overcome ‘market failure’ of existing markets to environmental harms from actions such as agriculture and forestry, and have been applied in both EU and non-EU countries. Most PES schemes in the EU are financed by public bodies, typically through the CAP, and are implemented at mostly local and regional level.⁴⁶² However, there were PES programmes identified that do not only address agricultural areas, targeting peatlands, grasslands, and floodplains. Most PES at global and EU level are input-based, meaning they remunerate management actions and not ecosystem services provision per se.

Other novel economic instruments that, through pricing and taxing measures, can contribute to biodiversity conservation include Ecological Fiscal Transfer (EFT), environmental taxes, and environmental fees and charges (usually complementing legislation, rarely alone). EFTs redistribute tax revenue among government levels for achieving conservation objectives based on ecological indicators.⁴⁶³ Depending on the context of the EFT, local governments can be compensated for

⁴⁵⁹ Bouwma, I. M. et al. (2015) Policy instruments and modes of governance in environmental policies of the European Union: Past, present and future

⁴⁶⁰ EEA (2005). Market-based instruments for environmental policy in Europe, EEA Technical Report, No. 8/2005

⁴⁶¹ See for example the proceedings of the green taxation conference (4 February 2021) https://ec.europa.eu/environment/events/conference-green-taxation-build-fairer-more-resilient-economies_en#:~:text=The%20conference%20E2%80%9CGreen%20Taxation%20to,online%20on%204%20February%2021.&text=The%20conference%20will%20be%20of,in%20business%20and%20civil%20society

⁴⁶² Illes et al. (2017). Innovative mechanisms for financing biodiversity conservation

⁴⁶³ Kettunen and Illes (eds.) (2017). Opportunities for innovative biodiversity financing in the EU: ecological fiscal transfers (EFT), tax reliefs, marketed products, and fees and charges

conservation expenditures, opportunity costs, and spill-over benefits based on their performance against these ecological indicators. EFTs have not been widely used in the EU. Environmental taxes, user fees and charges, on the other hand, have been very popular, but their implementation can be further widened. These instruments could generate substantial amount of revenues; however, their effectiveness depends on whether they are directly earmarked for biodiversity conservation/restoration activities.⁴⁶⁴ Greening taxation by increasing application of environmental taxes while reducing other more distorting taxes could increase the delivery of a better environment at a lower cost, especially in the context of the green post-Covid recovery.⁴⁶⁵ There are numerous calls made at the EU level for a sustainable fiscal reform, including the European Green Deal⁴⁶⁶.

Different market-based instruments give rise to different pros and cons, which are well-documented in the relevant literature.⁴⁶⁷ In general, market-based instruments have the potential to correct market failures for public goods for which markets do not exist. However, managing these market failures is a complex process, which, if not comprehensively planned, may not generate the intended benefits.⁴⁶⁸ Since these instruments focus on only the affected stakeholders and do not impose certain behaviours on everyone, they exhibit a higher level of acceptance of conservation policies than using regulatory approaches.⁴⁶⁹ These instruments are considered in general less costly due to the lower transaction costs involved. In particular, EFT increase efficiency as it can reimburse public actors that usually do not receive any compensation for their biodiversity conservation and can compensate for spatial spill-over effects from protected areas.⁴⁷⁰

On the other hand, market-based instruments can increase complexity of legislation with funds, allocation rules, and other mechanisms.⁴⁷¹ They also require the development of a coordination programme to collect or distribute the funds which is an additional cost. In terms of non-binding market-based instruments, they may exhibit a lower level of effectiveness in achieving biodiversity-related objectives than regulatory instruments. As shown by the current use of PES in the EU, it has often been a challenge to convince actors (e.g. farmers, companies, organisations etc) to get involved and use these instruments, reflecting the challenges associated with developing new markets for environmental goods and services.⁴⁷²

Overall, there is a general agreement in the literature that the MBIs examined above are probably not sufficient to bridge the current biodiversity financing gap by themselves.⁴⁷³ Moreover, it is unlikely that the uptake of market-based instruments alone would be able to bridge the existing financing gap for biodiversity. It is recognised that MBIs are usually underpinned by strong regulatory measures and where appropriate can be used to achieve the sought-after regulatory outcomes at lower cost by encouraging trading and other efficiencies provided by markets. They can (and often are) also

⁴⁶⁴ Illes et al. (2017). Innovative mechanisms for financing biodiversity conservation

⁴⁶⁵ EC (n.d.). Environment. Environmental Economics. Available at:

<https://ec.europa.eu/environment/enveco/mbi.htm>

⁴⁶⁶ EC (2019). The European Green Deal. COM/2019/640 final

⁴⁶⁷ See EC (n.d.). Environment. Environmental Economics. The use of market-based instruments. Available at:

<https://ec.europa.eu/environment/enveco/taxation/index.htm>

⁴⁶⁸ Bouwma et al., (2015) Policy instruments and modes of governance in environmental policies of the European Union: Past, present and future

⁴⁶⁹ Kettunen and Illes (eds.) (2017). Opportunities for innovative biodiversity financing in the EU: ecological fiscal transfers (EFT), tax reliefs, marketed products, and fees and charges

⁴⁷⁰ *ibid*

⁴⁷¹ *ibid*

⁴⁷² Illes et al. (2017). Innovative mechanisms for financing biodiversity conservation

⁴⁷³ *ibid*

implemented at national level and may therefore be effective options used in compatibility with regulatory options such as Directives at EU level.⁴⁷⁴ Therefore, only a comprehensive policy mix that utilises a wide range of instruments could have the potential to improve the ecological- and cost-effectiveness of the overall implementation of the Strategy.

According to SOER 2020⁴⁷⁵, there are significantly fewer binding targets for biodiversity than for other environment areas, such as climate change, air pollution, waste, and chemicals, which makes prospects for biodiversity enhancement in Europe rather uncertain. As mentioned in the report, when biodiversity policy objectives and targets are not met, there is a tendency to reiterate them and extend the timeframe for their achievement. SOER 2020 points to six key areas for bold action one of which is the development of systemic policy frameworks with binding targets to mobilise and guide actions across actors and levels.

As this evaluation of the Strategy has shown, the lack of legislative teeth of the Strategy itself has been one of the major drivers of its limited implementation. In most cases where Strategy targets relate to regulatory instruments, it is indirectly through an existing regulatory tool (such as the Nature directives) with additional voluntary measures (such as increased knowledge development or information sharing) to support outcomes. It was frequently identified in consultation that the absence of a dedicated funding instrument was a key weakness of the Strategy.

Therefore, in line with SOER's 2020 observation, it is appreciated that binding targets would have benefited the level of implementation for the Strategy. This effect is reflected in Target 5 of the Strategy on IAS, which included binding requirements that have been to a large extent implemented, and in Target 2 on restoration, which did not include an implementation framework and action remained insignificant. For the operationalisation of these binding targets, the Strategy could have considered a number of regulatory and market-based instruments. Several stakeholders mentioned in consultation that regulatory instruments should have had a greater role in the targets of the Strategy, as they would increase compliance and would have better reflected the urgency of tackling biodiversity loss. Greater utilisation of the large range of MBIs (including reverse-auctions, revolving funds, cap-and-trade markets) as a complementary tool could increase the uptake and efficiency of biodiversity-related measures.

It is a clear conclusion of this study that a reliance on voluntary instruments was a significant cause of the Strategy's failures in effectiveness and cost-effectiveness.

5.2.3 EQ 7 - What have been the socio-economic impacts of the Strategy?

This question refers to the socio-economic impacts, either positive or negative, in terms of changes in income and employment of the affected stakeholders, of the implementation of the Strategy. In this question, it is again difficult to discern the effect of the Strategy in the generation of these impacts. Therefore, the analysis focuses on the socio-economic impacts emerged through the components of the Strategy's targets, keeping in mind that some of these would anyway appear even without the implementation of the Strategy. The relevant sub-questions that will guide the analysis are:

⁴⁷⁴ Kettunen et al., (2017) Integration approach to EU biodiversity financing: evaluation of results and analysis of options for the future.

⁴⁷⁵ EEA (2019). The European Environment - state and outlook 2020 (SOER 2020). Knowledge for transition to a sustainable future.

1. What significant positive and/or negative long-term and/or short-term socio-economic impacts has the Strategy implementation had (including the sharing of costs entailed as well as benefits arisen for different stakeholders)?
2. What have the main socio-economic impacts been, within the EU and globally, of any identified failure to achieve the EU biodiversity targets?

EQ 7.1 What significant positive and/or negative long-term and/or short-term socio-economic impacts has the Strategy implementation had?

As the socio-economic impacts of the Strategy significantly differ depending on the Target examined, the analysis examines each of the Strategy's targets separately.

Target 1

The socio-economic impacts of implementing Target 1 refer to the implementation of the Birds and Habitats Directives. Both the recent Fitness Check of the Nature Directives and dedicated studies include adequate information for examining the employment and income generation derived by the Directives. While conservation activities can often have a short-term positive⁴⁷⁶ socio-economic impact generating income and jobs in the conservation sector, they also bring long-term impacts, generating jobs and income in other sectors, like tourism and recreation.

The Fitness Check⁴⁷⁷ indicated that the flexible system⁴⁷⁸ of protection of Natura 2000 has had a positive impact on socio-economic activities, generating business opportunities and income generation. According to the stakeholder consultation undertaken as part of the fitness check, 85% of Europeans think that the role of Natura 2000 in stimulating local socio-economic development (e.g. via agri and ecotourism and nature-related leisure activities) is very or somewhat important. Evidence show that Natura 2000 sites have generated thousands of jobs across Europe through conservation measures, sustainable production, and other activities. Mutafoğlu et al. (2016) estimated that Natura2000 sites support directly or indirectly around 52,000 jobs.⁴⁷⁹ According to GHK (2011), the EU employment impact of investing €1 billion in the Natura 2000 network in 2010 could generate nearly 30 thousand direct, indirect, and induced job positions (FTE).⁴⁸⁰ The Natura 2000 network has a significant contribution in supporting jobs in tourism and recreation. It has been estimated that Natura 2000 sites receive between 1.2 and 2.2 billion visitor days per year, which in 2006 gave rise to estimated total spending of between €50 and €90 billion.⁴⁸¹ The employment generated by this, was estimated by the same study at up to 4.5 million FTE in 2006. Moreover, the relevant literature has shown that bird species richness play a central role in human well-being. For instance, a recent study showed that bird species richness is positively associated with life satisfaction across Europe, indicating that the effect of species richness on life-satisfaction is of similar magnitude to that of income.⁴⁸²

⁴⁷⁶ Acknowledging that short-term impacts can also negatively effect actors socio-economically, such the displacement/limitation of fishery activities following the designation of marine protected areas

⁴⁷⁷ Milieu, IEEP, ICF (2016). Evaluation study to support the Fitness Check of the Birds and Habitats Directives, final report March 2016

⁴⁷⁸ Referring to Natura 2000 allowing socio-economic activities to take place within designated sites, provided they can be implemented in harmony with biodiversity objectives.

⁴⁷⁹ Mutafoğlu et al., (2016). Natura 2000 and Jobs: Scoping Study. Brussels.

⁴⁸⁰ GHK (2011). Evaluating the Potential for Green Jobs in the next Multi-annual Financial Framework

⁴⁸¹ BIO Intelligence (2011). Estimating the economic value of the benefits provided by the tourism/recreation and Employment supported by Natura 2000

⁴⁸² Methorst et al., (2021). The importance of species diversity for human well-being in Europe. Ecological Economics, 181, 106917

Nevertheless, some negative socio-economic impacts have resulted from the Nature Directives, with a focus on the Natura 2000 sites, from restricted economic development. Economic operators active in the Natura 2000 sometimes claim that the approach taken by the Directives is too restrictive and may present undue burden on the pursuit of economic activities.⁴⁸³ As one example, according to a stakeholder, there are Member States that have extensively restricted the development of aquaculture in Natura 2000 marine sites, which has created serious bottlenecks for the development of the sector in the EU. The stakeholder mentioned the Commission's effort to tackle this issue by publishing guidelines on how to install aquaculture in such areas; however, this document has not reached the lower levels of administration in many Member States, which are the authorities that issue permits for such developments. Other examples are the Danube delta, where a large Natura 2000 area has been established, including the settlement areas, and the local population bears greater restrictions in structural developments, mostly constructing buildings and wind turbines.⁴⁸⁴ Or in Poland where a path of a planned highway, selected for economic reasons, had to be changed due to the fact that it passed through several Natura 2000 sites.⁴⁸⁵

Overall, the socio-economic benefits that are provided by the implementation of the Nature Directives are significant in terms of income and jobs generation. While there are many examples where the Directives have imposed costs or restrictions on businesses and economic development, these often result from poor implementation approaches (for example, Gantioler et al., (2010) estimated that approximately €2.1 billion annual costs (36% of total costs) for implementing the Natura 2000 network were compensation for opportunity costs- including compensation to business owners).⁴⁸⁶ Overall, the evidence suggests that despite some negative impacts, the costs of implementation are reasonable and outweighed by the benefits, although they do impact some stakeholders more than others.

Target 2

The restoration target and deployment of green infrastructure contribute to a range of socio-economic benefits linked to improved air and water quality, flood control, noise reduction, recreation and social opportunities, and health. As shown in the relevant literature, restoration of forest, wetlands and other ecosystems has brought millions of euros in savings across the EU due to lower water retention and purification costs;^{487, 488} national parks can generate substantial employment both within the park and indirectly in the tourism sector in the broader region;⁴⁸⁹ and urban green infrastructure can generate multiple benefits in the form of enhanced health and well-being⁴⁹⁰.

There is a general consensus in the literature that the expenditure for achieving the Target 2 objectives can generate thousands of jobs across Europe. However, the literature is very limited in relation to the actual number of jobs and other socio-economic impacts of the Target 2 expenditures. ICF et al. (2012)

⁴⁸³ Milieu, IEEP, ICF (2016). Evaluation study to support the Fitness Check of the Birds and Habitats Directives, final report March 2016

⁴⁸⁴ Ecological Institute, UCL Centre for Law and the Environment (2015). The implementation of the Natura 2000, Habitats Directive 92/43/ECC and Birds Directive 79/409/ECC (Preparation for ex-post territorial impact assessment)

⁴⁸⁵ idem

⁴⁸⁶ Milieu, IEEP, ICF (2016). Evaluation study to support the Fitness Check of the Birds and Habitats Directives, final report March 2016

⁴⁸⁷ EEA (2016). European forest ecosystems. State and trends. EEA Report No 6/2016.

⁴⁸⁸ Siuta and Nedelciu, (2016) Report on Socio-Economic Benefits of Wetland Restoration in Central and Eastern Europe. A publication by CEEweb for Biodiversity, Budapest, Hungary.

⁴⁸⁹ Nunes et al. (2011). The Social Dimension of Biodiversity Policy: Final Report

⁴⁹⁰ EEA (2020). Healthy environment, healthy lives: how the environment influences health and well-being in Europe. EEA Report No 21/2019

estimated that 110,000 direct FTE jobs each year can be supported by investment needed to achieve Target 2 (15% restoration).⁴⁹¹ In a more conservative estimate, Eftic et al. (2017) found that the additional investments required by the Strategy with regard to ecosystem restoration (€506 to €1,750 million per year) would result in 15,000 to 50,000 FTE.⁴⁹² However, very little of the required investment to meet Target 2 materialised and thus most of these jobs were not created. The exact amount of job creation from the actual level of implementation of Target 2 has not been analysed in the literature.

The negative socio-economic impacts potentially emerging due to the implementation of Target 2 and its accompanying actions have not been examined by the relevant literature. However, sources have identified that there are considerable opportunity costs of biodiversity- and ecosystem-related action within the EU. Ecologic et al. (2011) estimated that the foregone economic benefits from alternative activities or uses of a resource on a particular site due to species and habitats conservation action can reach up to about 60% of the total costs. According to this study, at the EU level, in 2011, this amount reached almost €1.7 billion.⁴⁹³ These mainly relate to income forgone due to constraints on land management.

Target 3

The question of the socio-economic benefits produced by Target 3, mainly relates to agricultural and forestry employment and income generation through sustainable agricultural and forestry practices. Income and jobs have been created by the CAP, which has provided payments to farmers and foresters to protect or restore species and/or habitats through agri-environment climate and other RDP measures. According to a study undertaken for the EC, investing €1 billion per annum in agri-environment measures could create 6,600 additional jobs (FTE).⁴⁹⁴ In addition to the socio-economic effects of the CAP, the organic agricultural and income generation are still quite limited compared to conventional agricultural and forestry practices; however, there is a clear upward trend, which is expected to continue increasing. The value of the organic retail market in the EU was €34.2 billion in 2017, with retail sales growth of 10.8% between 2016 and 2017.⁴⁹⁵ The number of organic agricultural producers has also been increasing in EU27, reaching 292,175 in 2016, a 15% since 2013.⁴⁹⁶ Eurostat's analysis suggests the organic sector's production and economic importance can be expected to continue growing across the EU. While the direct socio-economic impact of Target 3b

The direct socio-economic impacts of Target 3B and the accompanying actions are limited. Developing Forest Management Plans creates jobs for foresters and forestry technicians, but this is marginal compared to the indirect socio-economic benefits derived from healthy forests. In 2015, the extended Forest-Based Industries (F-BI) value chains supported 3.6 million jobs with a turnover of EUR 640 billion (added value EUR 200 billion) in the green economy.⁴⁹⁷ In addition, according to the report on the

⁴⁹¹ ICF et al., (2012). The EU biodiversity objectives and the labour market: benefits and identification of skill gaps in the current workforce

⁴⁹² Eftic, et al., (2017). Promotion of ecosystem restoration in the context of the EU biodiversity Strategy to 2020

⁴⁹³ Ecologic et al. (2011)., Taking into account opportunity costs when assessing costs of biodiversity and ecosystem action

⁴⁹⁴ ICF et al., (2012). The EU biodiversity objectives and the labour market: benefits and identification of skill gaps in the current workforce

⁴⁹⁵ Eurostat (2019). Sustainable development in the European Union. Monitoring report on progress towards the SDGs in an EU context. 2019 edition.

⁴⁹⁶ Eurostat (2020). Organic operators by status of the registration process (from 2012 onwards). Database. Available at: https://ec.europa.eu/eurostat/databrowser/view/org_cotyp/default/table?lang=en

⁴⁹⁷ EC (2018). Progress in the implementation of the EU Forest Strategy.

progress in the implementation of the Forestry Strategy, forests constitute an important source of income both for many of the owners of the estimated 16 million private forests (some 60% of the EU forest area) but also for publicly owned forests. They contribute to rural development and can have a central role in local economies for their tourism opportunities as well as the timber and forest goods they provide (for example, timber provision is calculated at providing €10,820/km² in the EU in 2012, whereas forest services such as climate regulation, flood control and nature-based recreation provide an estimated €34,860/km²).⁴⁹⁸ These examples illustrate the type and scale of socio-economic impact of sustainably managed forests, although an estimate of the direct socio-economic impact of the Strategy cannot be provided based on available evidence.

A few studies have looked at the negative socio-economic impacts potentially emerging due to the implementation of Target 3A and 3B and their accompanying actions. These studies have mainly referred to conflicts between biodiversity-related measures in farmlands and farm income. Alliance Environment (2019) pointed out that crop diversification under CAP greening limits farmers' ability to choose which crops to produce that may lead to lower farm income.⁴⁹⁹ The permanent grassland ratio requirement could potentially also lower farmers' income, depending on national circumstances. The same study has also identified that certain geese species, whose numbers have been increasing, can cause crop production losses when flocks overwinter or have a migration stage in agricultural or coastal wetlands and lakes. While a direct estimate of negative socio-economic impacts of the Strategy on Target 3 cannot be provided based on available evidence, it can be expected that limited progress on this target has similarly limited socio-economic impacts.

Target 4

Fisheries play a crucial role for employment and economic activity in several EU regions - in some European coastal communities the fishing sector accounts for as many as half the local jobs.⁵⁰⁰ The economic performance of the EU fleet continued to register record-high net profits of €1.4 billion in 2018. Healthier fish stocks result in better economic performance of the EU fleet.⁵⁰¹ Total employment in the EU fleet in full time equivalents (FTE) has been decreasing on average 1.2% per year since 2008, partly due to the decrease in the fleet's capacity. However, the average FTE wage has been increasing by 2.5% per year.⁵⁰²

In regards to Marine Protected Areas, the total socio-economic benefits go beyond food provision, including tourism, coastal security, climate mitigation, and research. Coastal and marine nature-based tourism employs over 3 million people and generates more than €180 billion per year in gross value added in the EU.⁵⁰³ MPAs in southern Europe generate an estimated €640 thousand per MPA in income to industries that provide services to non-resident recreational users.⁵⁰⁴

⁴⁹⁸ Vallecillo et al., (2019) **How ecosystem services are changing: an accounting application at the EU level**

⁴⁹⁹ Alliance Environnement et al., (2019) Evaluation of the impact of the CAP on habitats, landscapes, biodiversity.

⁵⁰⁰ EC (n.d.) Oceans and fisheries- employment. Available at: https://ec.europa.eu/oceans-and-fisheries/facts-and-figures/facts-and-figures-common-fisheries-policy/employment_en

⁵⁰¹ EC COM (2020) 248 final, Towards more sustainable fishing in the EU: state of play and orientations for 2021

⁵⁰² EC COM (2020) 248 final, Towards more sustainable fishing in the EU: state of play and orientations for 2021

⁵⁰³ Russi et al., (2016). Socio-Economic Benefits of the EU Marine Protected Areas. Report prepared by IEEP for DG Environment

⁵⁰⁴ Russi et al., (2016). Socio-Economic Benefits of the EU Marine Protected Areas. Report prepared by IEEP for DG Environment

Overall, restoring fish populations and maintaining marine ecosystems can have substantial socio-economic benefits in income and jobs due to both increasing fish harvest in the longer-term and generating locally more tourism and recreation opportunities. The negative socio-economic impacts potentially emerging due to the implementation of Target 4 and its accompanying actions have not been comprehensively examined by the relevant literature. These mainly refer to MPAs and fishing-related restrictions, which give rise to short run opportunity costs, mainly loss of fishing opportunities. However, it should be noted that the costs and benefits of MPAs vary significantly depending on the context of their implementation.⁵⁰⁵

Target 5

There is little literature focusing on socio-economic benefits directly identified as a result of tackling IAS in Europe, in terms of income and employment generation. There are indeed negative socio-economic impacts avoided; however, these are captured in Evaluation Question 5 and are not examined here. Some employment opportunities will be created due to direct field activities for removal of invasive species and administration positions. These have been estimated by ICF (2012) to be between 520 and 2,520 FTE staff annually.⁵⁰⁶

The negative socio-economic impacts of actions that tackle IAS have not been comprehensively studied in the literature. The IAS Regulation itself gives due consideration to socio-economic aspects when deciding whether to include an IAS on the Union list or not. There are few cases where IAS may represent a valuable resource for local communities. Targeting these species may result in loss of jobs and income. Cases of positive effect of IAS are:

- the red swamp crayfish *Procambarus clarkii* in Spain, where it reached up to 3000 tonnes of annual catch, contributing to several hundred local fishermen's income.⁵⁰⁷ The species is on the Union list and the activity continues in the framework of article 19 management measures (commercial activity);

- The American mink *Neovison vison* which was introduced for fur farming and continues to be used in the fur industry in several Member States, in particular in Denmark which is the biggest mink producer in the world. The species was considered for inclusion on the Union list. The continuation of the fur farming would be possible under Article 9 authorisation system. The resulting administrative burden though was deemed too high and the species was not listed;

- The water hyacinth *Eichhornia crassipes* was a popular aquatic plant providing significant annual revenues to the horticultural sector (wholesale and retail) in several countries mostly in Northern Europe. On the other hand, it is highly invasive in the Mediterranean region. The decision to list the species was based on the estimation that any future invasions avoided, and related management costs would be much more significant than the lost income for horticultural trade.

Target 6

Healthy ecosystems are of vital importance for sustainable development and poverty eradication. The International Labour Organization has attempted to quantify global employment that is dependent on

⁵⁰⁵ ICF, IEEP and PML (2018) Study on the economic benefits of MPAs.

⁵⁰⁶ ICF et al. (2012). The EU biodiversity objectives and the labour market: benefits and identification of skill gaps in the current workforce

⁵⁰⁷ EEA (2012). The impacts of invasive alien species in Europe. EEA Technical report. No 16/2012

ecosystem services. According to their estimation, about 40% of the total world employment was sustained by industries that are directly or heavily dependent on ecosystem services.⁵⁰⁸ The share of the employment that relies on ecosystem services varies significantly among regions, with Africa and Asia having the highest shares at 59% and 47% respectively. Ecosystem degradation in these regions damages human health and well-being and economic activity, increasing the vulnerability of their populations, which are largely composed of farmers, fishermen, and rural communities.

Actions under Target 6 also have some socio-economic implications. The reduction of the indirect drivers of biodiversity loss (Action 17), which is mainly related to the mitigation of the ecological footprint of the European consumption patterns, could have a potential effect on the economic activity of Member States. However, this would happen in the case that EU policies would bring a measurable reduction in the consumption of (unsustainable) goods and services. As efforts under Actions 17a-c remained quite limited, they did not produce considerable negative or positive socio-economic impacts. In terms of the mobilization of additional resources for global biodiversity conservation (Action 18), it has created jobs and income for companies and organizations outside of the EU, including in restoration and species protection activities (including fighting wildlife trade) and tackling of illegal, unreported and unregulated fishing. However, the job and growth impacts of biodiversity-related development cooperation and international partnerships have not been comprehensively estimated in the literature. Finally, while the Nagoya Protocol (Action 20) aimed to contribute to a more equitable access to and the benefit-sharing of genetic resources, its effectiveness has been disputed by a number of third countries.

EQ 7.2 What have the main socio-economic impacts been, within the EU and globally, of any identified failure to achieve the EU biodiversity targets?

The Strategy has not fully achieved any of its Targets. This means that not only that the full benefits provided by the Strategy's targets and actions do not materialise, but also natural capital and ecosystem services further deteriorate due to worsening ecosystem degradation and biodiversity loss. For instance, a study estimated that the failure of meeting the objectives of the Nature Directives can cost up to €10.5 to €15.7 billion per year in 2018 Euro prices.⁵⁰⁹ The socio-economic implications of this failure to achieve the Strategy's targets cannot be estimated precisely. The loss of jobs and income due to biodiversity loss and ecosystem degradation cannot be easily determined and there is no relevant indication in the literature. Other socio-economic impacts, such as health impacts, social vulnerability, and safety, can also emerge due to the failure to protect biodiversity and ecosystems. Human induced biodiversity loss is one of the main drivers of outbreaks of infectious diseases.⁵¹⁰ Such diseases can have a profound negative impact on the global population and economy. For instance, the recent Covid-19 pandemic that erupted in the end of 2019, has led to a tragic global death toll and catastrophic socioeconomic repercussions, which are yet to be seen in their entirety and will affect humanity and the global economy for several years to come. Although this pandemic cannot be linked to the failure of achieving the targets of the Strategy, it is very likely that not averting global biodiversity loss will give rise to more pandemics like this in the future.⁵¹¹

⁵⁰⁸ ILO(2018). World Employment and Social Outlook 2018: Greening with jobs

⁵⁰⁹ COWI, Eunomia, Consulting Ltd (2019). Study: The costs of not implementing EU environmental law. Final Report

⁵¹⁰ Loh et al. (2015), "Targeting Transmission Pathways for Emerging Zoonotic Disease Surveillance and Control", Vector-borne and Zoonotic Diseases, Vol. 15/7

⁵¹¹ Dasgupta et al., (2021) The Economics of Biodiversity: The Dasgupta Review

6 Analysis of relevance

6.1 Introduction

This section examines whether the Strategy addresses the needs, goals and priorities of the EU and its citizens and stakeholders with respect to biodiversity. It also examines whether these needs and priorities have changed or evolved since the Strategy was introduced, and if so whether the Strategy has remained relevant and flexible enough to deal with these evolving needs. The evaluation examines three questions on relevance:

Evaluation Question 8 - To what extent did the targets of the Strategy correspond to the current needs of the EU with regard to biodiversity over the period 2011 to 2020?

Evaluation Question 9 - Was the Strategy been flexible enough to respond to new or emerging issues?

Evaluation Question 10 - How relevant was the Strategy for addressing the needs and interests of different stakeholders and for EU citizens?

6.2 Analysis of the evaluation questions

6.2.1 EQ 8 - To what extent did the targets of the Strategy correspond to the needs of the EU with regard to biodiversity over the period 2011 to 2020?

There is a strong (though not comprehensive) evidence base regarding the status and trends in biodiversity to support an assessment of relevance to needs. Very few reviews, critiques or evaluations have directly addressed the question, and those available often represent the views and judgements of stakeholder interests, such as NGOs. To answer the question, it was therefore necessary to analyse and draw inferences from the factual evidence available, as well as to draw on the views and experiences of stakeholders at EU and Member State level.

The Strategy was underpinned by a strong evidence base and clear links were made between needs and the Strategy's targets. The 2010 Biodiversity Baseline⁵¹², as well as other sources detailed in the Impact Assessment⁵¹³ provided detailed evidence of the status and trends in biodiversity. The Impact Assessment articulated the links between these needs and the Strategy's targets.

The Strategy and its targets were widely recognised by experts and stakeholders as being relevant to the EU's needs with respect to biodiversity, as evidenced by the literature review, stakeholder interviews and national case studies.

However, the Strategy's targets and actions were not comprehensive, and halting biodiversity loss relies also on implementation of wider EU policy. The six targets did not address all drivers of biodiversity loss, and depend on wider action through implementation of other EU environmental and sectoral policies (for example for climate action, implementation of WFD and MSFD, pollution control and chemicals legislation, resource efficiency, agriculture and fisheries). This was recognised in Section 3.6 of the Strategy. The targets also need to be complemented by broader action to address

⁵¹² EEA (2010) EU 2010 Biodiversity Baseline. <https://www.eea.europa.eu/publications/eu-2010-biodiversity-baseline>

⁵¹³ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011SC0540&from=EN>

challenges of funding, governance, partnerships and mainstreaming of biodiversity into wider policies, as recognised in Section 4 of the Strategy.

The six Strategy targets and actions within them generally corresponded well to the EU's needs with respect to biodiversity, but were not comprehensive:

Target 1. The fitness check of the EU Nature Directives⁵¹⁴ confirmed their relevance in addressing all types of pressures facing protected species and habitats, while recognising that there are also challenges in avoiding or mitigating the effects of more diffuse threats such as pollution and climate change outside protected sites. The need to avoid damage and deterioration of sites, and negative impacts on species remains, and the Directives provide a framework to address emerging problems. The target focused on European rather than national protected areas, as these are the focus of EU responsibility and influence;

Target 2 aligned with international commitments under the CBD Aichi targets. The need for the No Net Loss initiative was evidenced by ongoing losses of biodiversity outside the Natura 2000 network through development pressures⁵¹⁵, which continued through the life of the Strategy⁵¹⁶. The literature, which includes the review of implementation of the Green Infrastructure Strategy⁵¹⁷ and a range of 3rd party reviews and analyses, does not question the relevance of the target but highlights limited progress in implementation;

Target 3 focused on integration of biodiversity into the management of agriculture and forestry, which is widely recognised as being important to halt biodiversity decline. The actions were not comprehensive - for example there was no direct mention of pesticides or other pressures - which are recognised to have negative effects on biodiversity in the EU⁵¹⁸;

Target 4 focused on the sustainability of fisheries and addressed an important need with respect to biodiversity conservation. As well as achieving maximum sustainable yield by 2015, the target also specified that fisheries management should have no significant adverse impacts on other stocks, species and ecosystems. The target itself did not address the management of the wider marine environment and did not refer directly to other drivers of marine biodiversity loss, which include pollution, marine litter, climate change and extraction⁵¹⁹. Nevertheless section 3.6 and Action 14b of the Strategy recognise the importance of implementation of the MSFD in achieving good ecological status in marine ecosystems and halting biodiversity loss. Action 14b stated that the Commission and Member States would support the implementation of the Marine Strategy Framework Directive, and that this “could include ... promoting the involvement of the

⁵¹⁴ EC SWD (2016) 472 final Fitness Check of EU Nature Legislation (Birds and Habitat Directives).

⁵¹⁵ IEEP (2014) Policy Options for a No Net Loss Initiative.

<https://ec.europa.eu/environment/nature/biodiversity/nnl/pdf/Policy%20Options.pdf>

⁵¹⁶ IEEP (2020) Guidance on achieving no net loss or net gain of biodiversity and ecosystem services.

<https://ec.europa.eu/environment/nature/biodiversity/nnl/pdf/NNL%20Guidance%20-%20July%202020%20-%20Final.pdf>

⁵¹⁷ European Commission (2019) Review of progress on implementation of the EU green infrastructure strategy. Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, European Commission, Brussels.

⁵¹⁸ Geiger et al., (2010) Persistent negative effects of pesticides on biodiversity and biological control potential on European farmland. *Basic and Applied Ecology* 11 (2010) 97-105

⁵¹⁹ https://ec.europa.eu/environment/marine/good-environmental-status/descriptor-1/index_en.htm#:~:text=The%20key%20pressures%20on%20marine,damage%20to%20the%20sea%20floor.&text=Change%20in%20species%20composition%20can,sea%20floor%20within%20the%20ecosystem.

sector in alternative activities such as eco-tourism, monitoring and managing marine biodiversity, and combating marine litter”;

Target 5 recognised IAS as a significant threat to biodiversity in the EU, and provided a broad framework for addressing the problem at EU level;

Target 6 recognised the importance of EU action in addressing global biodiversity loss and included wide-ranging actions to achieve this. The Strategy was relevant in focusing on the main areas of action in which the EU can influence biodiversity internationally.

Stakeholder consultations revealed criticism related to a perceived insufficient emphasis given to some ecosystems (e.g. fresh water) in the Strategy and its targets - e.g. while targets deal explicitly with agriculture and forestry, fresh water was less prominent and addressed through cross cutting targets (as well as depending on implementation of existing legislation such as WFD)⁵²⁰.

The EU and national stakeholder interviews found broad agreement that the Strategy and its targets were relevant to biodiversity needs, while identifying a range of issues that stakeholders believed could have been given greater prominence (including climate change; cultural heritage and landscapes; the role of business sectors other than agriculture, forestry and fisheries; water abstraction; consumer demand and green investment).

The Strategy and its targets were also criticised as inadequate and insufficiently ambitious due to their non-binding nature and inability to address wider challenges identified at the time of the Strategy. Reasons for failure to meet the previous 2010 target to halt biodiversity loss were set out in the Impact Assessment, and included insufficient integration across other sectoral policies, incomplete implementation of existing legislation and policy gaps, funding shortcomings, an inadequate policy framework and governance structure, and limited awareness about biodiversity. Though the Strategy mentioned these factors, most of them were not addressed by specific targets or actions. The IA recognised that the level of ambition was also a factor and that targets were constrained by feasibility (for example, in relation to the number of species and habitats that could realistically be returned to favourable conservation status within the timescale of the Strategy, and the inability to earmark CAP funds for biodiversity).

The overall needs of the EU with respect to biodiversity have not changed since the Strategy was published. Some issues have grown in prominence, but these generally fit with the overall framework provided by the Strategy and its targets.

The conservation status of species, habitats and ecosystems remains poor in the EU and globally and the key threats and pressures are the same (habitat loss, pollution, over-exploitation, invasive alien species, climate change, EU global footprint). The overall picture is of continuing challenges across the board rather than new emerging issues;

Some issues and pressures have increased in prominence since the Strategy was published - e.g. the decline of pollinators, the problem of plastics in the marine environment, the need to integrate action on climate change and biodiversity, as well as the links between human health and biodiversity. These largely add to the list of pressures on biodiversity and complement the targets and actions of the Strategy;

⁵²⁰ European Habitats Forum (2019) position on 'The implementation of the EU 2020 Biodiversity Strategy and recommendations for the post 2020 Biodiversity Strategy'. https://d2ouvy59p0dg6k.cloudfront.net/downloads/ehf_paper_post_2020_eu_biodiversity_strategy_may2019.pdf; AlterNet & EKLIPSE (2019) Key messages ALTER-NET & EKLIPSE conference 'The EU Biodiversity Strategy Beyond 2020'. <http://www.alter-net.info/outputs/alter-net-eklipse-conf-2019>

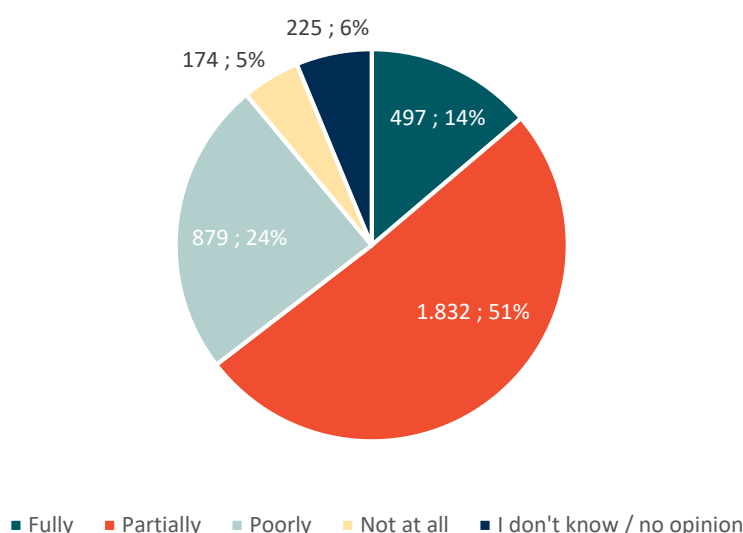
The national case studies largely found that the Strategy and its targets were (and continued to remain) relevant but that there was often a gap between strategic targets and implementation on the ground in the Member States. This was because many of the targets and actions were broad and not supported by binding commitments to action.

Reviews and evaluations (including mid-term evaluation of EU BS and evaluations relevant to specific targets) largely found that the Strategy and its targets remained a relevant framework over the 2011 to 2020 period but highlighted a lack of progress in implementation. The EU 6th report to the CBD⁵²¹ set out the (continuing) rationale for each target, identifying barriers to implementation rather than questioning relevance to needs.

The evaluation to support the Nature Directives Fitness Check⁵²² found that the Directives are largely relevant to needs and fit for purpose, while the main challenges relate to implementation. Critiques by NGOs⁵²³ also focus on a lack of implementation, suggesting that the Strategy and its targets and actions continued to provide a relevant agenda. International reviews⁵²⁴ confirmed relevance of the Strategy and its targets to the international agenda and Aichi targets but highlighted gaps in implementation.

The majority (51%) of respondents to the Open Public Consultation expressed the view that the Strategy had partially responded to the main biodiversity needs and issues in the EU, with 24% expressing the view that it had addressed these needs and issues poorly, 14% fully and 5% that it had not addressed them at all (as shown in the figure below). It is not clear to what extent these views reflect opinions about the relevance of the Strategy and to what extent they reflect views about implementation.

Figure 6-1 Views of respondents to the Open Public Consultation as to how well the Strategy addressed biodiversity needs (number of responses and % of total number)



⁵²¹ EU (2019) 6th National report to the CBD. <https://chm.cbd.int/database/record?documentID=243509>

⁵²² Milieu, IEEP and ICF, Evaluation Study to support the Fitness Check of the Birds and Habitats Directives, March 2016.

https://ec.europa.eu/environment/nature/legislation/fitness_check/docs/study_evaluation_support_fitness_check_nature_directives.pdf

⁵²³ For example <https://www.birdlife.org/europe-and-central-asia/news/eu-biodiversity-strategy-2015-%E2%80%93-making-balance> and EHF(2019) *op. cit.*

⁵²⁴ IPBES (2018) The IPBES regional assessment report on biodiversity and ecosystem services for Europe and Central Asia. https://www.ipbes.net/system/tdf/2018_eca_full_report_book_v5_pages_0.pdf?file=1&type=node&id=29180

As well as implementation, reviewers highlighted the failure of the Strategy to influence action for biodiversity more widely. While not questioning the relevance of the targets to biodiversity needs, the IPBES regional assessment argued that many of the reasons for failure to meet the 2010 target remained (inadequate governance, funding, integration, awareness; short termism and failure to change the system). Rayment et al (2018)⁵²⁵ argued that more needed to be done to integrate biodiversity across society and the economy and called for a step change in approach, commitment and action. The European Habitats Forum (2019) pointed to a lack of wider ownership and mainstreaming with other sectors and policies, a finance gap, a claimed “continuation of perverse subsidies”, lack of overall political will and inability to build awareness and mobilise a wider popular movement, as well as gaps in implementation of existing EU legislation. The EHF statement did not evidence these claims in detail but presented them as an agreed assessment of its members. For example, no details of environmentally harmful subsidies were provided, although the statement claimed that “the CAP still incentivizes large-scale industrial farming.”⁵²⁶

The critiques summarised in the previous paragraph therefore questioned whether the targets and actions were sufficient to halt biodiversity loss, and whether, collectively, they went far enough in addressing the wider pressures and challenges facing biodiversity. There are links to Question 6 on efficiency, which asks whether a Strategy without binding commitments was the most appropriate instrument to achieve the EU biodiversity targets to 2020.

The European Environment Agency in SOER (2020)⁵²⁷ summarised the situation: “*The broad framework of EU biodiversity policy remains highly relevant and is fit for purpose but the challenge is urgent and interlinked with the climate crisis. Targets will not be met without more effective implementation and funding of existing measures in all European environmental policies, as well as greater policy coherence with respect to biodiversity in agricultural and other sectoral policies. The wider application of ecosystem-based and adaptive management in combination with increased public awareness of society’s dependency on biodiversity and nature are important steps forward.*”

6.2.2 EQ 9 - Was the Strategy flexible enough to respond to new or emerging issues?

Overall, there is much evidence of the trends and pressures affecting biodiversity in the EU and globally, much of which reinforces evidence of the needs identified when the Strategy was formulated. Most reviews and evaluations, as well as interviews with EU and national stakeholders, conclude that the main challenges affecting biodiversity for the EU remain as they were when the Strategy was published and have yet to be adequately addressed. Much of the focus was therefore on implementing existing targets and actions rather than addressing new ones. The mid-term evaluation found that the main challenges remained, and that the challenge was to implement existing targets and actions rather than respond to new or emerging issues. Nothing in the review suggested a need to respond to changing needs. There remains much to do to implement action under the existing targets and to address needs

⁵²⁵ Rayment et al., (2018) Valuing biodiversity and reversing its decline by 2030, IEEP policy paper. <https://ieep.eu/uploads/articles/attachments/947eb8aa-1694-41b1-8037-a4f16a7d2ace/Think%202030%20Biodiversity.pdf?v=63710011292>

⁵²⁶ A detailed review by the OECD (2020) found a wide range of subsidies damaging to biodiversity in the EU Member States to different degrees across different sectors, but also noted that effects are often complex and indirect. OECD (2020) Developing guidance to identify and assess subsidies harmful to biodiversity at national level. Working Party on Biodiversity, Water and Ecosystems. Special session, 15 December 2020

⁵²⁷ EEA (2019) The European environment — state and outlook 2020: knowledge for transition to a sustainable Europe. European Environment Agency, Copenhagen.

already identified and remaining. The targets and actions were found to be generally sufficiently broad to provide an ongoing agenda for action. Similarly, analyses such as that by the European Habitats Forum (2019) stressed the continued relevance of the targets and actions and highlighted failures of implementation rather than problems in responding to new issues.

As noted in the answer to the previous question, some issues have risen in prominence in the biodiversity agenda since 2011. These include:

The impact of the decline of pollinators on biodiversity, ecosystem health and agriculture and the importance of addressing this issue⁵²⁸. This has focused greater attention on the impact of pesticides on biodiversity⁵²⁹. A new EU pollinators initiative⁵³⁰ was introduced in 2018, setting strategic objectives and a set of actions to be taken by the EU and its Member States to address the decline in pollinators in the EU and contribute to global conservation efforts;

The threat of plastics for marine biodiversity, which has led to EU action, such as through the MSFD, and the Strategy for Plastics adopted by the Commission on 16th January 2018⁵³¹;

The links between biodiversity and climate change. While the Strategy made numerous mentions of climate change and its links to biodiversity, these were not prominent in the Strategy's targets and actions. Evidence of the strength of these linkages and the need to address climate and biodiversity priorities concurrently and urgently has developed further since 2010, as reflected in the Lima Declaration on Biodiversity and Climate Change⁵³²;

The links between biodiversity and public health were hardly mentioned in the Strategy, although it recognised the importance of biodiversity to human wellbeing. It is now understood that contact with nature makes an important contribution to physical and mental health, that there are co-benefits for public health and biodiversity of improving the quality of and access to green space, and that nature-based prescribing can deliver health benefits and reduce the costs of ill-health⁵³³. These links have been emphasised further in the current COVID-19 crisis, in which inequalities in public health and access to green space have been highlighted during lockdown⁵³⁴;

Technological developments with impacts on biodiversity not mentioned in the Strategy include synthetic biology and deep-sea mining for rare minerals. Synthetic biology could have potential benefits for biodiversity (e.g. control of IAS, sustainable control of pests and diseases, bioremediation) as well as negative impacts (transfer of genetic material to wild populations, toxic effects, introduction of new pests and diseases⁵³⁵). There is increasing interest in deep sea mining of rare minerals, which could have major impacts on biodiversity⁵³⁶;

Some issues such as effects of agro-chemicals, veterinary medicines and antibiotics are still incompletely understood and suggest an ongoing need for horizon scanning to identify and

⁵²⁸ EEA (2019) State of the Environment Report 2020 and EHF (2019) *op. cit.*

⁵²⁹ Brühl and Zaller (2019) Biodiversity Decline as a Consequence of an Inappropriate Environmental Risk Assessment of Pesticides.

⁵³⁰ https://ec.europa.eu/environment/nature/conservation/species/pollinators/policy_en.htm

⁵³¹ <https://ec.europa.eu/environment/circular-economy/pdf/plastics-strategy-brochure.pdf>

⁵³² <https://www.cbd.int/doc/publications/cbd-ts-89-en.pdf>

⁵³³ ten Brink et al (2016) The Health and Social Benefits of Nature and Biodiversity Protection.

⁵³⁴ https://www.researchgate.net/publication/304374192_The_Health_and_Social_Benefits_of_Nature_and_Biodiversity_Protection

⁵³⁵ <https://www.sei.org/perspectives/covid19-value-of-green-space-in-cities/>

⁵³⁶ https://ec.europa.eu/environment/integration/research/newsalert/pdf/synthetic_biology_biodiversity_FB15_en.pdf

⁵³⁷ Heffernan (2019) Seabed mining is coming - bringing mineral riches and fears of epic extinctions. Nature..

understand new and emerging issues (Rayment et al, 2018). This suggests the need for continuing flexibility in policy frameworks and vigilance to new issues and challenges.

The Strategy was broad in its scope and called for wide ranging efforts to address the decline of biodiversity and ecosystems, which went beyond the six targets and 20 actions specified. It extended to other issues and challenges, such as the implementation of wider environmental legislation and sectoral policies, and challenges relating to governance, finance, public awareness and engagement. While the targets and actions helped to emphasise priorities and guide actions and resources, they did not preclude additional actions, as evidenced by new actions that have taken place since 2011, including the Pollinators initiative, Nature Action Plan and Plastics Strategy.

Individual targets of the Strategy were seen to provide a broad and flexible basis for further action. Some reviews found that this provided a helpful framework for future action; some critics also argued that the targets were too broad and insufficiently specific. For example:

For Target 1, the Fitness Check of the EU Nature Directives concluded that their objectives remain valid, that they continue to provide a relevant policy framework, and are sufficiently flexible to adapt to technical and scientific progress. While there have been some developments in scientific knowledge and terminology (e.g. around natural capital and ecosystem services), the Directives provide a broad enough framework to address these;

Target 2 provided a broad framework that enabled subsequent work to develop, e.g. on green infrastructure, nature-based solutions and the ecosystem approach. IPBES (2018) found that the Strategy represented an important step towards mainstreaming the concept of ecosystem services and associated metrics into different policies and highlighted the role of Action 5 (MAES) towards integrating ecosystem services into decision making. Langhout (2019) was critical that the target was insufficiently specific regarding the definition of degraded ecosystems and their restoration, and the lack of supporting actions or commitment to allocate financial resources for implementation;

Target 4 provided a broad framework for addressing fisheries impacts, in line with action under the CFP and MSFD. It did not cover wider pressures on marine biodiversity, though actions to address these through the MSFD and Plastics Strategy are consistent with the Strategy as a whole;

Target 5 provided a broad policy framework to guide EU action on IAS, including actions to prevent the establishment of new IAS as well as to deal with existing IAS in the EU.

Targets 3 and 6 provided broad and flexible frameworks, and were criticised more for their lack of specificity and impetus for action rather than their flexibility (e.g. Langhout, 2019).

Therefore, far from being inflexible, the Strategy was criticised more for being too broad and flexible, and lacking specificity and precisely defined obligations. Langhout (2019) argued that the targets and actions of the Strategy were not specific enough and that in many cases specific responsibilities for actions were not defined. For example, 11 actions were the responsibility of the Commission and the Member States together, without providing a further division of activities. Similar criticisms were made by EHF (2011) at the time the Strategy was launched, who argued that many of the targets were not measurable, there was no target for financing, there was a lack of concrete milestones, and there was no clear definition of responsibilities at EU, Commission and Member State level.

6.2.3 EQ 10 - How relevant was the Strategy for addressing the needs and interests of different stakeholders and for EU citizens?

The Strategy and its impact assessment emphasised that halting loss of biodiversity and ecosystem services is important for EU citizens and the economy. They identified a range of different stakeholder groups affected by the Strategy, and recognised the important role of different stakeholders, sectors and groups in implementation. The needs of different stakeholder groups are summarised in Table 6-1.

Table 6-1 Summary of stakeholder needs per target

Target	Stakeholders affected and their needs	References
Overall target to halt loss of biodiversity, ecosystems and their services	EU citizens, businesses and employees depend on biodiversity and ecosystem services. The value of services to business (e.g. pollination for agriculture) is increasingly understood. Biodiversity and green infrastructure offer opportunities for innovation, e.g. genetic diversity for medical and cosmetics sectors. Lower income groups tend to be more dependent on ecosystem services, and vulnerable to their loss, especially globally. Biodiversity Strategy and its targets create opportunities for job creation and skills development. Member States, local and regional authorities, businesses, planners, civil society, outermost regions and overseas territories, neighbouring and candidate countries all identified as important partners in Strategy, as well as sectors (including agriculture, forestry, fisheries, transport, energy).	Strategy, impact assessment, online public consultation report EU Biodiversity Objectives and the Labour Market ⁵³⁷
Target 1 - Nature Directives	EU citizens benefit from nature and the ability to visit nature sites for recreation. This contributes to mental and physical health and wellbeing. There was a large public response to the Nature Directives Fitness Check. Sectors (e.g. property, energy, transport, ports and shipping) face costs and administrative burdens resulting from nature laws; business and employment opportunities may be restricted locally. Other sectors (e.g. tourism, water, local produce) and economy as a whole benefit from protection of nature and ecosystem services. Protected areas offer employment opportunities for rural communities.	Evaluation to support the fitness check of the EU Nature Directives
Target 2 - Ecosystems and their services, restoration, green infrastructure, no net loss	Ecosystems, biodiversity and green infrastructure are important to a range of citizens and stakeholders, both in their own right and through links with agriculture, water, urban, climate, natural hazard prevention, health, transport energy and other sectors and policies. They can benefit city dwellers and create jobs and development opportunities. Land managers, including farmers, foresters, conservationists and contractors play an important role in ecosystem restoration. Developers, energy and transport companies incur costs and administrative burdens through GI investments and no net loss initiatives. Scientists play a key role in mapping and assessment of ecosystems and their services. Ecosystems provide a range of provisioning services (food, timber, freshwater), regulating services (e.g. regulation of climate, air and water quality, natural hazards) and cultural services (e.g. aesthetic, spiritual, education, tourism, recreation values) which benefit a wide range of stakeholders directly and indirectly, depend on the extent and condition of ecosystems and are enhanced by ecosystem restoration.	Strategy and IA Green Infrastructure Strategy and Review of implementation Reports and consultation on No Net Loss initiative
Target 3 - Agriculture and Forestry	Farmers and foresters are partners in delivery of targets, affected by actions which influence management practices, costs and incentives. Interest groups include landowners, farmers, foresters, farm and forest workers,	Strategy and IA Representations by farming and forestry groups.

⁵³⁷ Jurado E, Rayment M, Bonneau M, McConville AJ and Tucker G (2012) The EU biodiversity objectives and the labour market: benefits and identification of skill gaps in the current workforce.

Target	Stakeholders affected and their needs	References
	state forest companies, supply chains, processing and marketing businesses and rural communities. They may benefit from new employment/business opportunities and are affected by costs/ restrictions.	Alliance Environnement (2020) evaluation of impacts of CAP on biodiversity, habitats and landscapes European Forest Institute et al (2019) Study on Progress in Implementing EU Forest Strategy
Target 4 - Fisheries	Fishermen - livelihoods depend on sustainability of fisheries, affected by EU rules designed to achieve maximum sustainable yield. They may face short term restrictions designed to achieve long term improvements in catches and sustainability. Supply chain businesses, aquaculture, fish processors and consumers also depend on the sustainability of fish stocks and the supply and affordability of fish. Regional fisheries management organisations and third countries are identified as important stakeholders, with roles in implementing the Strategy and its actions, and are affected by changes in fisheries policies and management. Tourists, marine leisure users and the wider public benefit from the quality of the marine environment and marine biodiversity.	Strategy and IA WWF (2018) report on CFP implementation ⁵³⁸ , EC annual communications on the state-of-play with CFP implementation and fishing opportunities
Target 5 - Invasive Alien Species	Economy and a range of sectors (e.g. horticulture, forestry, pets and aquarium trade, marine transport) as well as national and local authorities will benefit from action to tackle IAS, estimated to cause EUR 12.5 billion worth of damage each year in the EU; same actors will also bear the costs of action.	Strategy and IA Documentation regarding IAS regulation and its implementation.
Target 6 - International biodiversity loss	All countries (including parties to CBD and other conventions) have a shared interest in efforts to halt global biodiversity loss, depend on ecosystem services, and partner with the EU in global conservation efforts. EU and foreign businesses (including manufacturers, traders and retailers) as partners in sustainable production and reduction of biodiversity footprint. EU consumers as partners in sustainable consumption and reduction of biodiversity footprint. International development bodies and NGOs as partners in enhancing aid for biodiversity and reducing biodiversity impacts. EU businesses using genetic resources (especially pharmaceutical/ cosmetic companies) face costs from ABS measures but also benefit from access to resources. Citizens and businesses involved in EU external action projects, including those receiving EU international development assistance; all citizens depend on ecosystem services.	Strategy and IA EC (2018) report on implementing external actions ⁵³⁹ , COWI (2018) report on global deforestation agenda ⁵⁴⁰ , IA on EU ABS Regulation ⁵⁴¹

⁵³⁸ http://d2ouvy59p0dg6k.cloudfront.net/downloads/wwfepo_cfpcorecardreport_dec2018.pdf

⁵³⁹ European Commission (2018) Annual Report on the implementation of the European Union's instruments for financing external actions in 2017. Staff working document

⁵⁴⁰ https://ec.europa.eu/environment/forests/pdf/feasibility_study_deforestation_kh0218321enn_interventions.pdf

⁵⁴¹ https://eur-lex.europa.eu/resource.html?uri=cellar:7ad11d44-b4ea-4684-a519-268a2fc4c0bc.0001.02/DOC_1&format=PDF

There was extensive consultation with stakeholders in the development of the Strategy. This included EU institutions, Member States and civil society (including NGOs, sector representatives and the public at large), through a number of events (Annex 2 of impact assessment), as well as an online public consultation which received 2905 responses (64% originated from citizens, 12% from NGOs and 6% from private business). According to the Commission⁵⁴², this ensured a transparent decision-making process and helped to build interest and support for the Strategy amongst a wide range of different sectors of society, which was considered vital for successful implementation. A Common Implementation Framework was defined, with different aspects of implementation guided by relevant working groups, which included relevant stakeholder interests (e.g. Working Group on No Net Loss of Ecosystems and their Services).

A study by Jurado et al (2012) found that implementation would create new jobs and have implications for the skills of millions of people. The Strategy (and particularly Targets 1 and 2) had the potential to create many thousands of skilled new jobs in the EU (through biodiversity conservation work) and would have implications for skills development in many millions more jobs. A detailed typology of jobs concerned directly and indirectly with biodiversity was provided.

Consultation submissions by stakeholder groups representing farming, forestry, fisheries and industry (e.g. public consultation to support the Strategy, consultation on evaluation roadmap, consultations relevant to specific targets such as Nature Directives fitness check) suggested that they saw themselves as partners in delivering the Strategy and relevant targets, while also expressing general concerns about the need to balance biodiversity with socio-economic and sectoral commercial objectives.

Subsequent reviews and evaluations also demonstrated the relevance of Strategy targets to citizens and stakeholders. For example:

The fitness check of EU nature directives emphasised the importance to citizens of protecting biodiversity and wider relevance to sustainable development agenda. The public consultation revealed widescale public support for the Directives. The supporting evaluation found that the Directives are largely seen by stakeholders as being relevant to the needs of EU citizens;

The review of implementation of the EU Green Infrastructure Strategy⁵⁴³ confirmed its continuing relevance to a range of stakeholders, sectors and agendas;

Progress on the no net loss initiative was affected by a public consultation⁵⁴⁴ which revealed widespread opposition by respondents to EU action on biodiversity offsetting.

Interviews with EU and national stakeholders confirmed the relevance of the Strategy to a range of stakeholders needs. However, some groups representing farming, forestry, fishing and business interests argued that the Strategy took too little account of the business needs alongside those of biodiversity. On the other hand, some NGOs and government representatives argued that these sectors are dependent on the sustainable management of natural resources, and that more rigorous efforts are needed to integrate biodiversity considerations into sectoral policies. Some of the country case studies (such as those in Bulgaria and Slovakia) highlighted the need for greater public awareness and engagement in order to meet biodiversity targets.

⁵⁴² <https://ec.europa.eu/environment/nature/info/pubs/docs/brochures/2020%20Biod%20brochure%20final%20lowres.pdf>

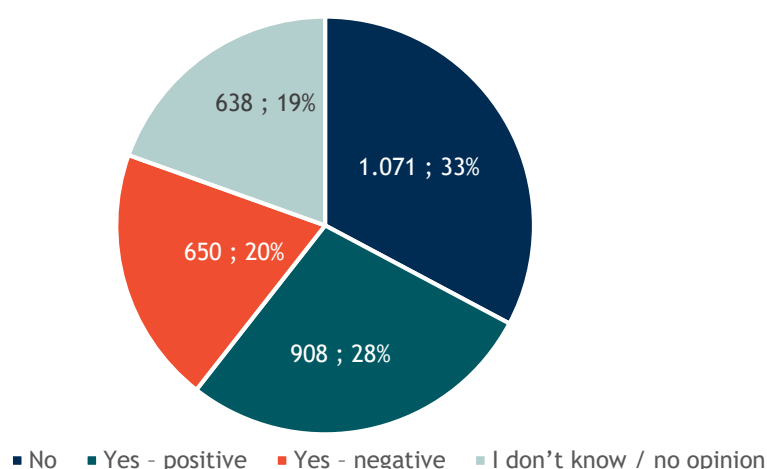
⁵⁴³ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52019DC0236&qid=1562053537296&from=EN>

⁵⁴⁴ https://ec.europa.eu/environment/consultations/nnl_en.htm

There is very little evidence regarding whether stakeholder needs have been met in practice. However, we might infer that a failure to meet the targets of the Strategy is likely to mean that stakeholder needs have not been fully addressed. The mid-term review said little about whether stakeholder needs have been met but found that there had been considerable progress in establishing partnerships and engaging stakeholders and civil society, mentioning the roles of the EU Business and Biodiversity Platform, the Biodiversity and Ecosystem Services in Territories of European Overseas (BEST) preparatory action and the EU's role in the supporting the Economics of Ecosystems and Biodiversity (TEEB) initiative as well as the Convention on Biological Diversity and other conventions. Some critics have pointed to a failure to engage a broad enough range of stakeholders in action to halt biodiversity loss as a key failing of the Strategy. This might suggest that too few stakeholders and citizens saw the Strategy as being relevant to their needs.

The Open Public Consultation conducted to inform the evaluation revealed mixed views among respondents about whether the Strategy had impacted on their sector, field of activity or living area. The largest number of respondents (33%) expressed the view that it had not, with 28% suggesting positive impacts, 20% negative impacts, and 19% expressing no opinion (see Figure below). These views are likely to reflect progress in implementation as well as the relevance to stakeholder needs.

Figure 6-2 Views of respondents to the Open Public Consultation regarding significant impacts on their sector, field of activity or living area_



Rayment et al (2018) argued the need for a broader and deeper shared societal recognition of the value of biodiversity to our development and well-being, suggesting that a much stronger social movement is needed to halt biodiversity loss, and that wider buy-in from decision makers and stakeholders across the economy and society is needed to secure the resources and commitment required to halt biodiversity decline. The European Habitats Forum (2019) argued the need to build capacity for local communities and civil society to ensure proper decision making and implementation and stressed the health and social dimension and everyone's Right to Nature, suggesting these require greater emphasis. In the ALTER-NET & Eclipse conference (2019) it was argued that there is a need to step up stakeholder engagement and participation and promote shared responsibility. Similarly, IPBES (2018) emphasised the importance of engaging people more effectively to deliver the changes needed to halt biodiversity loss.

Stakeholders continue to argue that taking action for biodiversity is relevant to their needs and that further EU action is required. For example, a recent paper by the University of Cambridge Institute for Sustainability Leadership⁵⁴⁵, part of the Business for Nature coalition, stressed the importance to business of protecting biodiversity and natural capital, and argued for government action, through the Strategy and other initiatives, to address market failures.

⁵⁴⁵<https://www.cisl.cam.ac.uk/resources/publication-pdfs/cisl-briefing-on-eu-biodiversity-strategy.pdf>

7 Analysis of coherence

7.1 Introduction

Evaluating the coherence of legislation, policies and strategies means assessing if they are logical and consistent with each other and with other legislation and relevant policies (European Commission, 2015a). This asks whether (1) synergies between the policy and biodiversity Strategy are recognised and promoted; and (2) potential conflicts or negative impacts are identified and addressed. We interpreted coherence in this assessment as including:

- The extent to which the Strategy does not contradict other interventions with similar or different objectives at the EU and national levels (=either neutral or complementary);
- The extent to which other policies include safeguards to prevent negative impacts on the achievement of the Strategy's objectives (=safeguarded or proofed);
- The extent to which an intervention incorporates aspects of the objectives of the other strategy and creates synergies by aiming to achieve co-benefits across policy objectives (=mainstreamed).

We assess these aspects of coherence at both the level of the policy documents and the level of policy implementation, i.e. recognising that coherence might be observed at 3 levels - (a) overall objectives (b) rules and eligibility conditions and (c) implementation in practice. The public consultation responses were included where appropriate⁵⁴⁶.

7.2 Analysis of the evaluation questions

7.2.1 EQ 11- To what extent is the EU Biodiversity Strategy coherent with the Europe 2020 Strategy for smart, sustainable and inclusive growth?

There is good evidence to answer this question about the potential for synergies, but less evidence on what the Strategy has contributed to sustainable growth. Examples from stakeholders were used to assess the coherence or policy conflicts between the Europe 2020 flagship initiatives and the Strategy targets and actions at the implementation level.

The strategies refer to each other; however, they do not make explicit how the joint priorities can be realized, and therefore did not provide sufficient incentives for synergies. Europe 2020 defined sustainable growth, one of its main goals, as growth which prevents biodiversity loss, and the EU Strategy for Resource Efficiency mentioned the role of biodiversity in resource efficiency, eco-innovation, job creation. The Strategy declared that it is an integral part of the Europe 2020 Strategy, particularly the resource efficient Europe flagship initiative, and Target 6 Action 17a referred to taking measures under the Flagship to reduce biodiversity impacts of EU consumption patterns. The aim to contribute to the shift towards a resource-efficient economy while safeguarding biodiversity was introduced into the 2014-2020 LIFE programme. However, the Europe 2020 Strategy included few policy drivers on biodiversity, and the Europe 2020 policy flagship policies did not mainstream biodiversity. Although the Strategy identified several needs that are clearly related to the flagship initiatives, including biodiversity related skills and jobs, digital infrastructure and tools, innovation, and trade agreements, these were not reflected in the priorities set by the flagship initiatives. For example, the

⁵⁴⁶ The responses have been collated excluding responses to organised campaigns, however including many responses from the Polish forestry sector which could not be isolated but may bias the responses on some issues.

industrial initiative made no reference to the need for ecosystem restoration across the EU, the reliance of EU industries on ecosystem services, the need to balance demands on land between industry, agriculture, and urban, or ecological limits to the expansion of exploration and extraction. The EU Trade Strategy to 2020 did not explicitly mention any biodiversity aspects, in contrast to the EU Trade Policy Strategy adopted in 2021 which explicitly recognises the need to further integrate biodiversity into EU trade agreements and their implementation. The headline indicators presented in the 2019 edition of the Indicators to support the Europe 2020 Strategy⁵⁴⁷ made no reference to biodiversity, ecosystem services, or resource efficiency.

The Strategy had potential to achieve the objectives of Europe 2020 by creating jobs, contributing to rural development, promoting innovation, and increasing social inclusion (as identified in Evaluation Question 7). The main points of complementary coherence between the Resource Efficiency flagship and the Strategy were that both strategies aimed to:

promote measures to **better value and account for natural capital and ecosystem services**: using innovative financial and market-based instruments such as the natural capital financing facility and payments for ecosystem services, mapping the state of ecosystems and their services, and encouraging businesses to assess their dependency on ecosystem services⁵⁴⁸. The impact assessment of the Biodiversity Strategy highlighted a need to **develop payments for public goods** to mitigate opportunity costs and restrictions in economic benefits from establishment and maintenance of protected areas, and the restoration of land used for agriculture or forestry.

eliminate environmentally harmful subsidies and promote the implementation of demand and supply side measures to reduce the environmental impact of production and consumption patterns;

promote green infrastructure; the resource efficiency flagship advises the building sector to *'ensure sufficient and connected green spaces as part of green infrastructures'*. There is strong evidence of the health and social benefits of nature and how this influences poverty and social exclusion⁵⁴⁹;

support **research for innovative solutions** to the preservation of ecosystem services and biodiversity⁵⁵⁰. Green infrastructure and no net loss initiatives had potential to create investment opportunities for businesses and biodiversity-positive investments that would promote innovation. For example, innovation needed for green roofs, wildlife crossings and porous paving, new planning approaches, and new organization methods.

In practice, the policy instruments and funding streams of the Europe 2020 strategy were used in some ways to advance biodiversity objectives, though it is not possible to attribute these directly to the effect of the Strategy. For example:

- EU funding programmes for research and innovation promoted synergies: Horizon 2020 funding for the EU Research and Innovation policy agenda on Nature-Based Solutions (NBS) and Re-

⁵⁴⁷ <https://ec.europa.eu/eurostat/web/products-statistical-books/-/KS-04-19-559>

⁵⁴⁸ p.12 EC(2011) 571 and actions 5 and 11b of the EU Biodiversity Strategy

⁵⁴⁹ ten Brink et al., (2016) The Health and Social Benefits of Nature and Biodiversity Protection. A report for the European Commission (ENV.B.3/ETU/2014/0039), Institute for European Environmental Policy

⁵⁵⁰ Innovation Union states that 'Progress in many applied sciences depends on the long-term availability and diversity of natural assets. Genetic diversity, for example, is a main source of innovation for the medical and cosmetics industries, while the innovation potential of ecosystem restoration and green infrastructure is largely untapped.' (p.3 COM(2011) 244)

Naturing Cities aimed to ‘Innovate with nature’ for more sustainable and resilient societies, projects resulted in quite large-scale actions by cities such as Leipzig⁵⁵¹;

- Ireland has successfully used funding under the European Innovation Partnership for Agriculture to pilot results-based approaches to agri-environment schemes, improving engagement and effectiveness of schemes to protect Hen Harrier, Freshwater Pearl Mussel, and other species and habitats;⁵⁵²
- ERASMUS+ projects such as ‘Changeons l’image de la Chauve-Souris et Agissons pour la préserver’, ‘National Parks’, ‘Placements in Environmental and Traditional Skills’, improved education and skills and raised awareness about nature values in schools and among students.
- As part of the initiative ‘Children and Youth Publications’ DG Environment published a book ‘Together!’ on the importance of biodiversity and Natura 2000 sites.

The Strategy contributed to the Europe 2020 strategy objectives for example through:

Training for judges and prosecutors on key provisions of the EU nature legislation, contributing to the goals of improving skills;

Job creation through ecosystem restoration. For example, the Swedish Environment Protection Agency estimated job creation under the Swedish environmental objectives at 1360 jobs. The Emscher Redevelopment Plan, one of the largest ecosystem restoration projects in Germany, was predicted to create 55,892 jobs in the region of Nordrhein-Westfalen in the period 2012-2020, and 101,687 jobs in Germany as a whole (RWI 2013 cited in Mutafoglu et al., 2017)⁵⁵³;

Building knowledge base and digital tools for using biodiversity information and increasing involvement of citizens in biodiversity monitoring, through creation of a dedicated ICT tool as part of the Biodiversity Information System for Europe, citizen science initiatives, which rely heavily on digital tools and access, training through TRAIN for Mapping and Assessment of Ecosystem Services (MAES), EUROSTAT grants.

The public consultation responses to the question ‘To what extent has the EU Biodiversity Strategy to 2020 contributed to the objectives of the following EU policies’ relevant to the Europe 2020 Strategy revealed a very mixed response with a quarter to a third of responses either ‘partly’ or ‘poorly’ and most of the rest as ‘I don’t know / no opinion’.

Table 7-1 OPC responses to the question “To what extent has the EU Biodiversity Strategy to 2020 contributed to the objectives of the following EU policies?”

	Fully	Partially	Poorly	Not at all	I don't know/ no opinion
Business and industry (n=2820)	4%	26%	26%	10%	35%
Circular economy (n=2807)	4%	28%	29%	7%	31%
Education and training (n=2813)	7%	36%	30%	6%	22%
Investment (n=2796)	4%	30%	23%	7%	36%
Public health (n=2803)	3%	22%	33%	14%	28%
Research and innovation (n=2957)	5%	32%	33%	5%	25%
Trade (n=2787)	4%	23%	26%	10%	38%

⁵⁵¹ Dushkova & Haase (2020) Not Simply Green: Nature-Based Solutions as a Concept and Practical Approach for Sustainability Studies and Planning Agendas in Cities. Land 2020, 9(1) 19; <https://www.mdpi.com/2073-445X/9/1/19>

⁵⁵² <https://www.nationalruralnetwork.ie/eip-agri/>

⁵⁵³ Mutafoglu et al., (2016) Natura 2000 and Jobs: Scoping Study. Brussels. April 2017

The public consultation responses to the question ‘*To what extent have the EU biodiversity targets to 2020 been integrated in the design and implementation of the following EU policies?*’ revealed similar positive responses for the same policy areas:

Table 7-2 OPC responses to the question “To what extent have the EU biodiversity targets to 2020 been integrated in the design and implementation of the following EU policies?”

	Fully	Partially	Poorly	Not at all	I don't know / no opinion
Banking and finance (n=2939)	5%	17%	19%	12%	45%
Business and industry (n=2930)	5%	24%	29%	10%	33%
Circular economy (n=2883)	5%	26%	28%	7%	34%
Education and training (n=2942)	9%	36%	27%	6%	22%
Investment (n=2878)	7%	29%	24%	7%	33%
Research and innovation (n=2899)	7%	36%	26%	4%	27%
Trade and investment (n=2877)	5%	22%	25%	12%	36%

The case studies revealed examples of incoherence with the Europe 2020 strategy objectives:

Spain: The farmers and ranchers association notes that insufficient incentives or aids have been granted to farmers and ranchers who exercise sustainable management in protected natural areas. The regional forest association notes that lack of economic viability has led to the abandonment of large agricultural and forest areas (20% of total surface area) which has increased the risk of wildfires and natural disasters;

Finland: A recent evaluation of Finland’s biodiversity strategy and action plan reports that the removal of financial subsidies harmful for biodiversity has progressed slowly noting that “economic growth has meant using natural resources to an accelerating extent, and it has not been possible to decouple increasing material well-being from the decline in biodiversity”⁵⁵⁴.

7.2.2 EQ 12 - To what extent does the Strategy support other EU environmental policy objectives, for example, in relation to clean air and water, the marine environment, the transition to a circular economy, sustainable production and consumption, soil protection, sustainable land use and management, waste management, and the sustainable use of resources? What are the synergies or overlaps?

There is a minimal evidence gap regarding the achievement of the EU environmental objectives, as these are reported in a series of EU reports from the European Commission and the EEA, plus consultancy reports carried out for the EU, accompanied by IPBES international assessments, and independent (NGO and other) reports on state of progress (see Appendix E). It is more difficult to draw conclusions with respect to how much the Strategy contributed to achieving these environmental objectives, because of the evidence gap with respect to the amount of ecosystem restoration undertaken because of the Strategy, and outcomes of the action targets on sustainable consumption, harmful subsidies etc.

⁵⁵⁴ Auvinen et al. (2020) *Impact Assessment of the Implementation of National Strategy and Action plan for the Conservation and Sustainable use of Biodiversity in Finland (2012-2020)*. Publications of the Government’s analysis, assessment and research activities 2020:36. <http://urn.fi/URN:ISBN:978-952-287-915-8>

In summary, the Strategy targets and actions had the potential to contribute in many ways to the key EU environmental policy objectives. At the same time, failures to make progress on the EU environmental policy objectives caused significant pressures on biodiversity and hindered the achievement of the Strategy headline target. Overall, the Strategy and the other environmental objectives are closely linked and mutually supportive. The Biodiversity Strategy targets depended on the implementation of environmental legislation and other sectoral legislation. But in practice the failure to implement, enforce, and monitor the environmental legislation fully has been a significant factor in the failure to fully achieve the Biodiversity Strategy targets. Because the level of achievement of the ecosystem restoration target was so low, it is unlikely that the Strategy contributed much to progress on the EU environmental objectives.

Overall, some progress has been made in reaching the EU's environmental policy objectives to 2020, for clean air, climate, freshwater, marine environment, and fish stocks, reducing land take, and recycling of waste, but not enough to reach targets to halt biodiversity loss. The climate change mitigation target has been met but was not sufficiently ambitious to have a large impact. A more stringent target has now been set. Waste generation and animal product consumption continue to increase.

The failure to fully achieve the environmental objectives is likely to have hindered the aim to halt biodiversity loss because:

- Climate change is already causing species range shifts and reductions in species populations and threatening habitats such as the boreal forests and increase in invasive alien species and pests and diseases and will continue to have a major impact;
- Eutrophication and nutrient pollution through air and water is degrading conservation status of freshwater habitats, forests, grasslands, and wetlands, with loss of sensitive species from some areas, and is threatening or preventing adequate restoration;
- Water stress is threatening wetlands including carbon rich habitats and alluvial forests;
- Pressures on marine ecosystems, including overfishing, pollution, seabed disturbances, invasive alien species, acidification and climate change are continuing to threaten fish stocks and seabed habitats;
- Continued land take and soil sealing cause habitat fragmentation and loss;
- Failure to adequately reduce waste, increase resource efficiency and address consumption continues to degrade ecosystems, cause pollution and indirectly continues pressures from intensive agriculture and forestry.

The Strategy targets had considerable potential to contribute to achieving these objectives, particularly through:

- Ecosystem restoration of wetlands, freshwater habitats, and marine habitats - leading to carbon sequestration, better water quality and quantity, better marine environmental status;
- Green infrastructure in cities and along transport networks - leading to improved air quality (through reduced methane emissions and increased capture of particle matter);
- Green infrastructure planning at the landscape level, resulting in reduced land take and increased water quality and quantity due to riparian buffer zones, soil protection in farmland and forest, and carbon sequestration and storage in organic soils, forests, and other woody elements (hedges, trees, scrub, etc);
- Target 4 actions to conserve and manage fish stocks and improve the marine environment.

The evidence for synergies between the Strategy actions and the EU environmental objectives is primarily at the local level, for example:

- In Germany, a study published in 2014 estimated the benefits of ecosystem restoration (nature-based solutions) for climate change mitigation and water purification.⁵⁵⁵ The study estimated that if the actions and targets in the German biodiversity Strategy for sustainable land use were achieved by 2020 on an area of 8.8 million ha, it could reduce nitrogen surplus by an average of 20kgN/ha (and so avoid water purification costs of 382.3 million Euros) and provide climate mitigation benefits ranging from 89 million Euros to 1.25 bn Euros (based on avoided damage costs of 70 Euro per t CO₂ eq). The results of the study indicated that the implementation of the ecosystem restoration would lead to significant financial costs, but the benefits would exceed the financial costs of measures;
- In Greece, the restoration of water relevant ecosystems (such as the old oxbow lakes system with canals in Medzibodrožie) has resulted in multiple benefits, fulfilled Water Framework Directive requirements, and provided climate change adaptation measures.⁵⁵⁶

The public consultation responses to the question ‘*To what extent has the EU Biodiversity Strategy to 2020 contributed to the objectives of the following EU policies*’ relevant to the Europe 2020 Strategy revealed a stronger positive response to the air quality and climate action objectives. This may be influenced by the large proportion of responses received from the Polish forestry sector, as these are environmental objectives widely associated with forests.

Table 7-3 OPC results to the question “To what extent has the EU Biodiversity Strategy to 2020 contributed to the objectives of the following EU policies”

	Fully	Partially	Poorly	Not at all	I don't know/ no opinion
Air quality (n=3048)	6%	39%	33%	7%	16%
Circular economy (n=2807)	4%	28%	29%	7%	31%
Climate action (n=2869)	8%	36%	33%	7%	15%
Disaster risk reduction and management (n=2994)	4%	26%	37%	9%	24%
Marine (n=2775)	3%	18%	24%	6%	50%
Water (n=2777)	4%	28%	30%	7%	30%

7.2.3 EQ 13 - To what extent are the biodiversity targets coherent with and mainstreamed into other EU policies, in particular on agriculture, forestry, fisheries, regional and urban development, infrastructure (in particular transport, energy and environmental infrastructure, ports, and mining), tourism, climate mitigation and adaptation, research and innovation as well as trade and development cooperation?

Overall, the evidence gap is moderate, as the evidence base on the policy intentions and implementation is good; evidence of mainstreaming in the implementation of EU policies, and situations of policy incoherence, are specific to national or local contexts and sectors, and are therefore based on the national case studies and examples.

⁵⁵⁵ Wüstemann, H., Meyerhoff, J., Rühls, M., Schäfer, A., & Hartje, V. (2014). Financial costs and benefits of a program of measures to implement a National Strategy on Biological Diversity in Germany. *Land use policy*, 36, 307-318.

⁵⁵⁶ Greek case study survey results

There has been progress on biodiversity mainstreaming at the level of policy objectives and instruments at the EU level, including better biodiversity proofing of EU funds, but gaps remain at the implementation level and many of the key decisions are made at the Member State level or at regional levels of governance (see examples below). Cases of incoherence between EU policy-driven and funded projects for economic sectors, and conservation of biodiversity, ecosystem services, and ecosystem restoration are listed below.

The public consultation responses to the question ‘*To what extent have the EU biodiversity targets to 2020 been integrated in the design and implementation of the following EU policies?*’ revealed the strongest positive responses for the policy areas of climate action, the CAP, energy policy, the forest strategy, regional policy, and water policy.

Table 7-4 Responses to OPC question “To what extent have the EU biodiversity targets to 2020 been integrated in the design and implementation of the following EU policies?”

	Fully	Partially	Poorly	Not at all	I don't know / no opinion
Chemicals (n=2924)	6%	24%	27%	10%	34%
Climate action (n=2977)	9%	40%	31%	6%	14%
Common agricultural policy (n=2964)	8%	38%	30%	8%	16%
Common fisheries policy (n=2899)	5%	22%	26%	7%	40%
Development cooperation and external action (n=2871)	6%	28%	25%	7%	34%
Disaster risk reduction and management (n=2917)	6%	26%	33%	10%	26%
Energy (n=2919)	6%	37%	29%	9%	18%
Forest Strategy (n=3034)	18%	31%	26%	14%	12%
Integrated maritime policy (n=2879)	4%	19%	23%	6%	47%
Marine (n=2870)	4%	17%	25%	5%	48%
Regional policy (n=2899)	7%	31%	30%	9%	23%
Transport (n=2886)	6%	24%	27%	13%	31%
Water (n=2908)	5%	30%	31%	7%	27%

The response to the general question ‘To what extent has the EU Biodiversity Strategy to 2020 helped to ensure integration of biodiversity in other EU policies and in related EU funding instruments’ was:

Table 7-5 Responses to OPC question “To what extent has the EU Biodiversity Strategy to 2020 helped to ensure integration of biodiversity in other EU policies and in related EU funding instruments”

	Fully	Partially	Poorly	Not at all	I don't know/ no opinion
Integration of biodiversity in other EU policies and in related EU funding instruments (n=2920)	7%	32%	34%	10%	17%

To answer this question, the policy areas and sectors were divided between the three sectors directly targeted by the Strategy and that are directly dependent on natural capital for their existence - agriculture, forestry and fisheries - and the other sectors and policy areas that have the potential to have both positive (synergistic) effects and negative (damaging and conflictual) effects, depending on

the degree to which biodiversity safeguards or proofing tools are integrated and effective and co-benefits are emphasised.

Agriculture, Forestry and Fisheries

The Strategy included targets and actions directly aimed at biodiversity mainstreaming in the EU policies on agriculture, forestry, and fisheries, and the coherence of these policies with the biodiversity objective has improved since 2011. Some aspects of implementation have also improved in coherence, leading to greater synergies, but there are still elements of incoherence and even conflicts (failures of proofing and safeguarding), as well as a failure to use measures to their fullest potential to create synergies (including inadequate funding and reach of measures). All three sectors have significant pressures on biodiversity and the biodiversity indicators associated with all three sectors are still declining⁵⁵⁷, but they have a key role to play in moving towards sustainable use that is compatible with biodiversity conservation.

Agriculture: The CAP is coherent with the Strategy at the level of policy objectives and instruments, with evidence that biodiversity has been mainstreamed to a certain extent in the policy instruments addressed by the Strategy⁵⁵⁸. However, the implementation in practice in some regions prioritised other objectives to the detriment of biodiversity objectives, and measures were not always being used or funded according to their potential to support biodiversity and failing to halt biodiversity loss.

Reasons for coherence failures to maximise synergies include:

- *Member States' implementation choices and inadequate reach of the most effective options*⁵⁵⁹;
- *Greening measures* resulted on fairly limited changes in farm management practices and land use, though it halted the declining trend in fallow in MS where it was an ecological focus area (EFA) option, a practice with biodiversity benefits⁵⁶⁰. Member States that applied a very restrictive definition of environmentally sensitive grassland⁵⁶¹ failed to use the additional policy protection against conversion of such grasslands to arable⁵⁶². exemption for maize monoculture in France was not coherent with species protection of *Cricetus cricetus*, which continues to decline partly because of maize monocultures⁵⁶³;
- *Failure of CAP planning process to adequately identify the needs for biodiversity:* The mapping of CAP implementation by Member States in 2015 showed that very few of the 10 case study RDPs provided a rigorous and quantified analysis of the needs relating to the Natura 2000

⁵⁵⁷ As described in effectiveness section. In the marine realm, though there has been improvement in commercial fish stocks towards MSY, other protected species groups are declining.

⁵⁵⁸ Alliance Environnement (2019) Evaluation of the impact of the CAP on habitats, landscapes, biodiversity. Alliance Environnement (IEEP and Oréade-Brèche), Brussels.

⁵⁵⁹ Alliance Environnement (2019) *Evaluation of the impact of the CAP on habitats, landscapes, biodiversity*, Brussels: Alliance Environnement (IEEP and Oréade-Brèche).

⁵⁶⁰ Alliance Environnement and Thünen-Institut (2017) *Evaluation study of the payment for agricultural practices beneficial for the climate and the environment*, Brussels: Alliance Environnement.

⁵⁶¹ European Commission (2018) *EXECUTIVE SUMMARY OF THE EVALUATION of the Regulation (EU) No 1307/2013 of the European Parliament and of the Council of 17 December 2013 establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy and repealing Council Regulation (EC) No 637/2008 and Council Regulation (EC) No 73/2009 concerning the greening in direct payments*, Brussels: European Commission SWD (2018) 479 final)

⁵⁶² In 2018, ESPG accounted for less than 5% of all permanent grassland within Natura 2000 in Be (Wa), DK, EE, IE, LV, LU, AT, PT, FI and UK (NI).

⁵⁶³ Alliance Environnement and Thünen-Institut (2017) *Evaluation study of the payment for agricultural practices beneficial for the climate and the environment*, Brussels: Alliance Environnement.

network in relation to agriculture and forestry, whereas the Prioritized Action Frameworks (PAFs) for Natura 2000 specified a much more detailed set of needs to be addressed⁵⁶⁴;

- *Failure to allocate sufficient funding to meet needs of biodiversity conservation in agriculture:* A comparison of PAFs and RDPs in 16 case study countries or regions concluded that a rough estimate of total resources available to Natura 2000 and biodiversity conservation based on information available in some of the programmes indicates that in general the resources were not sufficient to cover the financial needs identified in the Prioritised Action Frameworks for Natura 2000 for 2014-2020⁵⁶⁵. However, it also concluded that it is difficult to know exactly the potential contribution of the programmes to Natura 2000 or biodiversity conservation, as funding allocations are usually defined at measure level in the RDPs, while Natura 2000 is often covered by sub-measures or specific operations⁵⁶⁶.

Examples of positive coherence with the CAP:

Some targeted agri-environment measures (AECM) have demonstrated benefits for biodiversity (see effectiveness).

The introduction of the melliferous fallow EFA option in 2018 was coherent with the EU Pollinators Initiative aim to tackle the decline of pollinator habitat. The ban on pesticide use on EFAs increased the biodiversity value of in-field EFA options (particularly the nitrogen-fixing crops). Appendix E provides further details of the evidence.

Forestry: CAP forest measures are generally coherent but with very limited scope: The CAP forest measures were evaluated as generally coherent with the EU biodiversity policies, but with a risk of incoherence due to Member State implementation of CAP Pillar 1 rules to exclude areas of traditional agroforestry from CAP payments⁵⁶⁷. More broadly, the impact of the CAP forest measures on mainstreaming of sustainable forest management planning for biodiversity is limited by the fact that so few Member States have programmed the measures for biodiversity objectives.

Fisheries: The fitness check of the nature directives in 2015 concluded that the current CFP legal framework is considered coherent with the Directives, addressing the inconsistencies in the previous CFP that acted as a barrier for Member States to adopt conservation measures and restrict certain fishing practices⁵⁶⁸. However, it also stated that the establishment of conservation management measures in marine Natura 2000 sites remains challenging, given the inconsistent approaches between Member States and conflicts of interest. Little progress has been made to restrict or regulate fishing in protected areas in line with conservation objectives for sensitive marine habitats and species^{569 570};

⁵⁶⁴ Ecorys, IEEP and WUR (2016) *Mapping and analysis of the implementation of the CAP*, Brussels: Final Report to the Directorate-General for Agriculture and Rural Development.

⁵⁶⁵ N2K Group (2016) *Integration of Natura 2000 and biodiversity into EU funding (EAFRD, ERDF, CF, ESF): Analysis of a selection of programmes approved for 2014-2020*, Brussels: The N2K Group.

⁵⁶⁶ N2K Group (2016) *Integration of Natura 2000 and biodiversity into EU funding (EAFRD, ERDF, CF, ESF): Analysis of a selection of programmes approved for 2014-2020*, Brussels: The N2K Group.

⁵⁶⁷ Alliance Environnement and Thünen-Institut (2017) *Evaluation study of the payment for agricultural practices beneficial for the climate and the environment*. Alliance Environnement, Brussels.

⁵⁶⁸ Milieu, IEEP and ICF (2016) *Evaluation Study to support the Fitness Check of the Birds and Habitats Directives*. Milieu Ltd, Institute for European Environmental Policy and the ICF International, Brussels.

⁵⁶⁹ N2K Group (2018) *Review of fisheries management measures in Natura 2000 sites*. Report for European Commission by N2K Group.

⁵⁷⁰ Perry, A L, Blanco, J, Fournier, N, Garcia, S and Marín, P (2020) *Unmanaged = Unprotected: Europe's marine paper parks*. Oceana, Brussels.

however, agreements have been reached for MPAs in the Baltic and North Sea⁵⁷¹. The CFP reform in 2014 increased coherence of the policy with the Biodiversity Strategy by applying the ecosystem-based approach that aims to ensure that negative impacts of fishing activities are minimised, and that aquaculture and fisheries avoid degradation of the marine environment. The CFP also included measures specifically contributing to GES under the MSFD and the regulation of fisheries impacts under Article 11 (conservation measures necessary for compliance with obligations under Union environmental legislation).

The action plan on incidental seabird catch (2012) and then the new technical measures regulation in 2019⁵⁷² sharpened the measures to avoid by-catch of sensitive and protected species including sharks and rays, cetaceans, turtles, seabirds. The EU Action Plan on Sharks already existed in 2009 but was strengthened by new international protection measures⁵⁷³.

In support of the CFP, the MSFD is considered to have established an integrated approach to marine conservation, and has addressed some pressures that were previously ignored, such as marine noise⁵⁷⁴, but has not achieved the overall objectives (see effectiveness). The implementation of Maritime Spatial Planning in some Member States has also provided a more coherent approach. The MPA network has grown significantly since 2010 but still suffers from a lack of representativity of certain marine habitats and species, and because the marine environment and biodiversity is still poorly mapped it is still not possible to say if the most important spots are the ones protected⁵⁷⁵. There is also a lack of connectivity between sites, with some very small MPAs with isolated areas of habitat and species populations.

EU action in the Regional Fisheries Management Organisations (RFMOs) has improved the coherence of fisheries management in the seas with significant non-EU fishing, notably the Mediterranean. The legislative proposals agreed by the RFMOs have become part of EU legislation and also apply to neighbours under the Regional Seas Conventions.

Economic development sectors- transport, energy, mining, tourism and EU funding for regional and urban development

In general, the Strategy did not include targets and actions directly aimed these sectors but did programme actions to improve Natura 2000 protection and governance in relation to these sectors, such as guidance documents, training for judges and public prosecutors, green infrastructure planning, improved methods for assessing impact of EU funded projects, plans and programmes on biodiversity, and the no net loss initiative. There was also progress in strengthening the biodiversity impact assessment policy framework during the period, though it is not clear how much influence, if any, the Strategy had on this (see Box in Appendix E). As some of these sectors along with regional and urban

⁵⁷¹ European Court of Auditors (2020) Marine environment: EU protection is wide but not deep. Special Report 26/2020, European Court of Auditors, Luxembourg.

⁵⁷² Regulation 2019/1241 sets measures to increase the use of selective fishing gear, restrict the use of unselective gear such as drift nets and bottom trawlers, prohibit the catch of certain species and fishing in certain sensitive habitats, and enable the implementation of mitigation measures to reduce or prevent bycatch of protected species.

⁵⁷³ Shark Alliance (2016) EU Shark Conservation Recent Progress and Priorities for Action. http://eulasmoo.org/wp-content/uploads/2016/09/EU_Shark_Conervation_Recent_Progress_Priorities_Action.pdf

⁵⁷⁴ European Commission (2020) On the implementation of the Marine Strategy Framework Directive (Directive 2008/56/EC). REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL, COM(2020) 259 final, European Commission, Brussels.

⁵⁷⁵ European Commission (2020) On the implementation of the Marine Strategy Framework Directive (Directive 2008/56/EC). REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL, COM(2020) 259 final, European Commission, Brussels.

development more broadly receive significant EU funding, the biodiversity proofing of EU funding was also an important action. However, many sectoral policies continue to drive biodiversity decline rather than incentivising synergies, due to the failure to mainstream biodiversity objectives, and this was highlighted in the case studies as a major reason for failures to achieve the EU targets.

Examples of policy incoherence found in the case studies included:

Greece: the Greek Ministry of Tourism's Green Tourism Initiative aims at minimizing the environmental impact of tourism but makes no mention of biodiversity impacts, which are a serious problem for example for sea turtles.

Slovakia: Coherence issues are perceived as conflicts in the fields of agricultural policy, forestry policy, support of renewable energy, and infrastructure projects (e.g., highways)⁵⁷⁶.

Spain: incoherent policy instruments include: CAP direct payments and RDP payments for moving to more intensive crops using phytosanitary products and fertilizers; incentives for intensive forest plantations (eucalyptus, etc); policies that increase the use of water resources, increased irrigation, etc; policies for the construction of linear and transport infrastructures; practices associated with hunting; installation of renewable energies in places with an impact on biodiversity⁵⁷⁷.

7.2.4 EQ 14 - To what extent is the Strategy aligned with the EU's international commitments under the Convention on Biological Diversity (Aichi targets), the Sustainable Development Goals, and the United Nations Framework on Climate Change?

With adopting the Strategy, the EU complied with its obligation under Article 6 of the CBD. The Strategy was adopted in the aftermath of the 2020 Aichi Targets and is therefore generally considered to be in line with the global commitments, with some exceptions. While the EU Strategy does not have its targets explicitly organised as corresponding to the 20 Aichi Targets, the Aichi Targets elements - as relevant in the EU context and reflecting EU's competence vis-à-vis actions by Member States - are integrated across the different 6 EU targets. There are, however, some differences in terms of some target-specific objectives, most notably with the EU Strategy not specifying quantified area target on protected areas vis-à-vis the 17% and 10% objective of Aichi Target 11 for terrestrial and marine area, respectively. The Strategy is, in general, in line with the relevant targets of the SDG 14 and 15 on life under water and on land, which are partially based on the corresponding Aichi Targets. The most relevant SDGs to the EU strategy are 12, 13, 14 and 15 within which framework some targets and actions from the strategy are directly interrelated. The design of the SDGs makes several of them naturally interrelated so in some cases the spill-over effect can influence seemingly less-related goals, this is reflected in some of the targets and actions of the Biodiversity Strategy. There are numerous synergies between the Strategy and the EU's commitments for climate action under the UNFCCC. Overall, the Strategy is coherent with international climate commitments, but it is less clear whether potential synergies are being maximised.

Aichi targets: The Strategy was adopted following agreement of the 2020 Aichi Targets and is therefore generally considered to be in line with the global commitments, with some exceptions. While the EU Strategy does not have its targets explicitly organised as corresponding to the 20 Aichi Targets, the Aichi Targets elements - as relevant in the EU context and reflecting EU's competence vis-à-vis actions

⁵⁷⁶ Slovakia case study survey results.

⁵⁷⁷ Spain case study input from Agroecology association and Farms and ranchers association

by Member States - are integrated across the different 6 EU targets. There are, however, some differences in terms of some target-specific objectives, most notably with the EU Strategy not specifying quantified area target on protected areas vis-à-vis the 17% and 10% objective of Aichi Target 11 for terrestrial and marine area, respectively. The table in Appendix E maps the Aichi targets against the EU 2020 biodiversity Strategy targets and actions.

Agenda 2030 and SDGs: The Strategy is, in general, in line with the relevant targets of the SDG 14 and 15 on life under water and on land. The Strategy relates to only a minority of the 17 SDGs; however, such is the design of the SDGs that they themselves are interconnected and thus in achieving some goals there are knock-on effects for others that may not be directly related. The most relevant SDGs to the Strategy are 12, 13, 14 and 15 within which framework some targets and actions from the Biodiversity Strategy are directly interrelated. The design of the SDGs makes several them naturally interrelated so in some cases the spill-over effect can influence seemingly less-related goals, this is reflected in some of the targets and actions of the Biodiversity Strategy. The table in Appendix E illustrates the linkages between SDGs and Strategy.

UNFCCC: There are numerous synergies between the Strategy and the EU's commitments for climate action under the UNFCCC. The Strategy makes numerous references to the links between biodiversity and climate action, recognising both the importance of mitigating climate change in efforts to halt biodiversity loss, and the role of ecosystems in climate change mitigation and adaptation. It states that the EU will promote enhanced cooperation between the CBD, Climate Change and Desertification Conventions to yield mutual benefits. The EU will seek to promote co-benefits between biodiversity and climate change through EU funding and ensuring synergies with relevant funding sources, including climate finance (e.g. ETS revenues, REDD+). Synergies are identified with respect to Target 2 (ecosystem restoration) and 3b (forest management) but are also relevant to other targets (including 1, 3a and 6). Overall, the Strategy is coherent with international climate commitments, but it is less clear whether potential synergies are being maximised.

8 Analysis of EU Added Value

8.1 Introduction

The rationale of considering EU added value is to explore the justification for intervention at EU level rather than by Member States at national or regional level on their own initiative. Considering the principle of subsidiarity, this is a key evaluation criterion in evaluations. The key evaluation question that requires a response is thus: *What is the added value resulting from the EU Biodiversity Strategy compared to what is likely to have been achieved by the Member States in its absence?* Additionally, we consider the question: *How do Member States' targets add up or compare to the targets at EU level?*

The Better Regulation Guidelines on assessing EU added value indicate that “*the analysis of EU added value is often limited to the qualitative given the [...] difficulties to identify a counterfactual*”⁵⁷⁸. This issue is pertinent to the Strategy which dates back to 2011, and a comparison simply of outcomes would ignore the fact the Member States would likely have undertaken action related to biodiversity in the absence of this intervention at EU level. Despite consideration of the baseline scenario for this study, the situation without EU intervention remains unclear. This is particularly so because without legal instruments of its own and in addressing a very broad scope across six targets, the issue of attributing outcomes specifically to the Strategy is particularly challenging.

To assist in addressing this issue, the BR-GL indicate that: “*in many ways, the evaluation of EU added value brings together the findings of other [evaluation] criteria, presenting arguments on causality and drawing conclusions based on the evidence at hand about the performance of the EU intervention and whether it is still justified*”⁵⁷⁹. As such, our approach to considering EU added value involves:

- Considering the aspects of the Strategy that go beyond what Member States could have achieved by themselves;
- Drawing on the findings of effectiveness, efficiency, coherence and relevance, and considering what share of these outcomes can be attributed to these aspects;
- Corroborate this analysis with stakeholder views and expert opinions gathered in consultation for this project.

8.2 Analysis of the evaluation questions

8.2.1 EQ 15- What is the added value resulting from the EU Biodiversity Strategy compared to what is likely to have been achieved by the Member States in its absence?

The purpose and intent of the Strategy builds upon several components of potential EU added value, including:

- Additional and innovative interventions: effective innovations are a driver for added value at the EU level;
- Transboundary features of biodiversity: clearly, no aspects of biodiversity inherently coincide with national borders. As a result, addressing biodiversity challenges at landscape and regional scales has inherent advantages over uncoordinated action;

⁵⁷⁸ EC. (n.d.) Better regulation guidelines evaluation fitness checks, chapter IV, online at: <https://ec.europa.eu/info/sites/info/files/better-regulation-guidelines-evaluation-fitness-checks.pdf>

⁵⁷⁹ EC. (n.d.) Better Regulation Guidelines Chapter 6, pp. 63, online at: <https://ec.europa.eu/info/sites/info/files/better-regulation-guidelines-evaluation-fitness-checks.pdf>

- Information-sharing: sharing of information, solutions and ideas between EU Member States is an inherent source of value, lowering the cost of gaining new ideas and increasing the efficiency of subsequent action;
- Coordinated action: at least some important aspects of the Strategy gain efficiency and effectiveness from coordinated action, an obvious example being Target 5 on IAS;
- Policy coherence: that there is intervention for biodiversity at EU level is a source of EU value added since the major pressures on delivering on the headline targets are also governed by EU level legislation: Agriculture, chemicals, energy and transport policy amongst others;
- Governance and Enforcement: the ability of the EC to oversee implementation and enforce intervention through infringement procedures is a potential source of value of EU action (outcomes in this area to be discussed further below);
- Financing: intervention at EU level often results in the allocation of additional resources at Member State and EU level, to important actions.

Below we triangulate the evidence in relation to these dimensions over the duration of the Strategy implementation to establish the extent of EU added value.

Additional and innovative interventions

A large array of specific outcomes have occurred as a direct result of the Strategy, such as the IAS Regulation, and monitoring and reporting systems and tools in Action 4. Action 5 of the Strategy produced the Mapping and Assessment of Ecosystem Services (MAES) outputs. Target 2 raised the profile of green infrastructure in the EU including the development of a green infrastructure strategy, among other initiatives. Across Targets, most progress that is clearly attributable to the Strategy relates to communications and information sharing, data collection, and new tools and measures designed to increase the knowledge base to inform decision-making. These are significant and valuable developments.

Stakeholder views on the added value of the Strategy was mixed. One interviewee of an organisation operating at EU level noted support for the Strategy as a whole:

The moment the BDS was there, it started to influence action. Not to say there are no improvements necessary, but there is no region in the world with a similar level integrated strategy that links to sectoral strategies, like it.

Other stakeholders were less clear on the impact of the Strategy in influencing producing impacts, although consultation in most Member State case studies identified support for the Strategy in influencing the ambition of national implementation through leadership and frameworks.

The establishment of the Natura 2000 network is regularly cited as a change that would not have existed without EU legislation (noting that this network pre-dates the Strategy, however the Strategy may have added impetus since 2011). The implementation of the Natura 2000 network has led to the designation of protected areas beyond what existed at national level prior to the adoption of the Nature Directives and Biodiversity Strategy. Furthermore, the common approach to site selection and designation has elicited an innovative method which likely could not have been developed at independent Member State action.

However, attribution of additional outcomes from the Natura 2000 to the Strategy can only be made for the additional action that the Strategy inspired, for which evidence was limited in literature and not highlighted in consultation. One area of additional outcome is progress toward Action 3 of the Strategy through communications, fostering cooperation and providing training for judges and public prosecutors in relation to the Natura 2000 network, which have increased awareness of Natura 2000 and better informed decision-making.

The clear identification of additional innovations applied at EU level need to be reconciled with the lack of clear evidence of impacts associated with the Strategy, as discussed particularly in the Effectiveness section. As such, there is clear evidence of new and innovative outputs, but a lack of evidence of their impact.

Transboundary implementation

Several examples of transboundary cooperation exist that have links to the Strategy. For example, the adoption of the Western Mediterranean multi-annual plan in 2019 establishes actions to reduce fishing pressures in the region (even if impacts of the coordination cannot yet be determined).⁵⁸⁰ Cooperation under RFMOs and through programmes such as MedFish4Ever have also been implemented to tackle issues of cooperation with 3rd countries in shared sea basins. Another example is a focus on coordinated action at the EU level in cooperation with the Council of Europe to tackle illegal trapping, killing and trade of birds. This has also led to the establishment of the Intergovernmental Task Force on Illegal Killing, Taking and Trade of Migratory Birds in the Mediterranean, which first met in 2016.

Case studies undertaken for this study supported the transboundary scope of the strategy, for example from Italy: “(The Strategy) develops a cross-border policy that stands above individual state interests, and that provides boundaries within which Member States are required to stand.”

However, the European Court of Auditors 2017 report into the Natura 2000 network noted a lack of structures in place to ensure cross-border cooperation and subsequent habitat connectivity.⁵⁸¹ Also, despite much discussion and work in relation to green infrastructure, some stakeholders in EU-level organisations noted the lack of subsequent investment in green infrastructure as a result.

Information-sharing and coordinated action

Many working groups (e.g. committees, working groups, expert groups, scientific forums) and workshops have been convened to provide knowledge-sharing between Member States, and can be attributed to the Strategy. For example, through the IAS Regulation, networks such as EASIN have increased knowledge-sharing and cooperation between stakeholders, encouraging coordinated action between countries which share invasive species⁵⁸², and facilitated harmonised monitoring of invasive alien species throughout Europe⁵⁸³ leading to increased knowledge sharing and citizen involvement.⁵⁸⁴ The establishment of a list of IAS of Union concern is itself a coordinated action, and action plans and

⁵⁸⁰ EC SWD (2020) 112 final, Towards more sustainable fishing in the EU: state of play and orientations for 2021

⁵⁸¹ ECA (2017) Special Report No.1- More efforts needed to implement the Natura 2000 network to its full potential

⁵⁸² Genovesi et al. (2015) EU adopts innovative legislation on invasive species: a step towards a global response to biological invasions?

⁵⁸³ Magliozzi (2020) Assessing invasive alien species in European catchments: Distribution and impacts. *Science of the Total Environment*, 732.

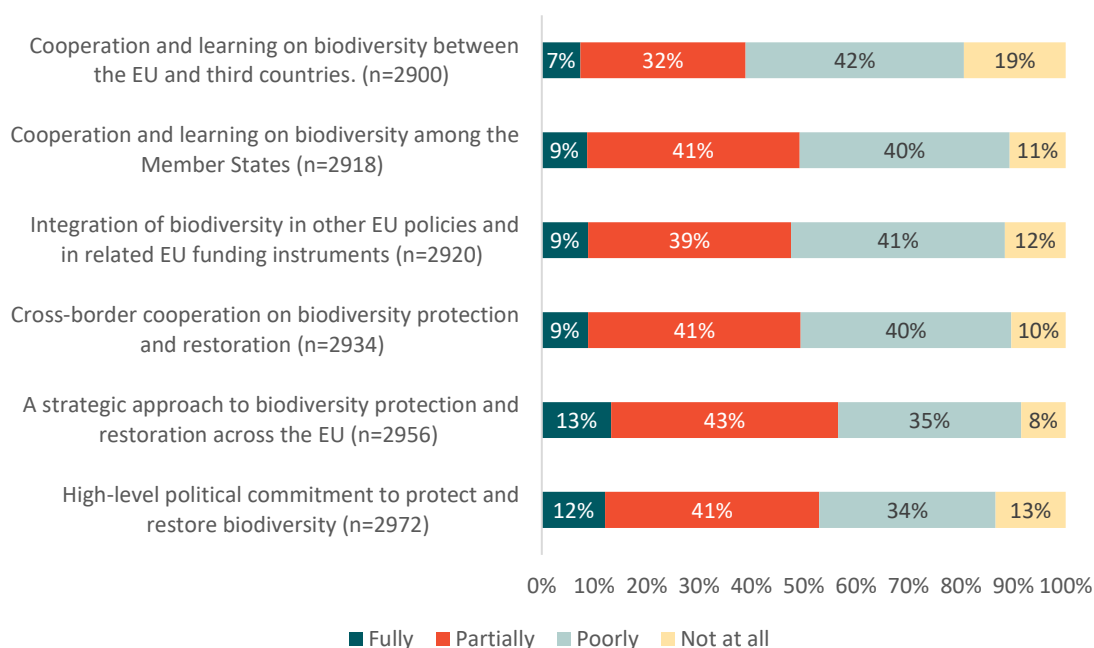
⁵⁸⁴ Council of Europe (2019) 13th meeting of the Bern Convention Group of Experts on Invasive Alien Species- Review of the Reports Submitted by Parties on Progress in the Implementation of the European Strategy on Invasive Alien Species and on the use of Bern Convention Codes of Conduct and Guidelines on IAS. Available at: <https://rm.coe.int/analysis-of-national-reports-on-the-implementation-of-the-european-ias/168094f67d>

surveillance systems in relation to widely-spread species also reflect the coordination benefits of EU-led action.

Through Target 2, the EU MAES initiative has not only brought stakeholders together to map and assess ecosystem services, it has raised awareness of the relevance of biodiversity and the ecosystem services it provides to society and help integrate ecosystem-based approaches within many key EU policy fields. Furthermore, the implementation of the MAES project has led to the development of a comprehensive and consistent list of indicators for ecosystem condition which can be used to map and assess ecosystem condition per ecosystem type. This serves as an integral component of measuring pressures on ecosystems and ecosystem conditions.

Identification of the impacts of these coordinated activities is difficult to measure in isolation, and most of the directly attributable outputs of the Strategy itself focus on the establishment and implementation of forums and processes for coordination. Evidence of clearly identified impacts produced from these activities in relation to biodiversity outcomes could not be identified in the literature. It is notable that while fairly evenly split, the majority of respondents to the OPC thought that cooperation and learning with third countries and Member States was achieved poorly or not at all through the Strategy (Figure 8-1).

Figure 8-1 OPC responses to the question "To what extent has the EU Biodiversity Strategy to 2020 helped to ensure:"



Policy coherence

As noted in the Coherence section, overall the Strategy is considered to be consistent with other environmental objectives such as clean air and water, the marine environment, sustainable land use and the sustainable use of resources; they are closely linked and mutually supportive. However, as also noted in that section, shortcomings on implementation of environmental legislation upon which it depended limited the value of the Strategy and it is considered unlikely that the Strategy contributed much to progress in achieving the EU environmental objectives.

Consideration of policy coherence was mixed in consultation inputs. As noted above, one stakeholder noted that there is no “*region in the world with a similar level integrated strategy that links to sectoral strategies*”. However, another noted the lack of connection between the Strategy and the Directive for the Sustainable Use of Pesticides (2009/128/EC).

Evidence suggests that funding decisions related to the Strategy have led to the integration of an EU-wide perspective, ultimately facilitating the implementation of projects and initiatives related to the Strategy which have greater EU-added value. Such linkages could have been further progressed with the implementation of Restoration Prioritisation Frameworks under Target 2, but as noted in the Effectiveness analysis, the uptake of these has been limited.

Governance, enforcement and financing

A key element of intervention at EU level is frequently the governance oversight role related to agenda-setting, monitoring and periodic reporting associated with European Commission administration of the intervention. This governance and enforcement role can be seen to guide Member States in key directions, motivate action and especially mobilise finances from both EU sources and from Member States (as well as the private sector) to deliver against the components of the intervention.

There was support in consultation that the Strategy provided a good overarching framework for intervention in relation to biodiversity, with (as one example) an interviewee from an international organisation arguing that through the strategy Member States knew where to focus to address the main drivers of biodiversity loss.

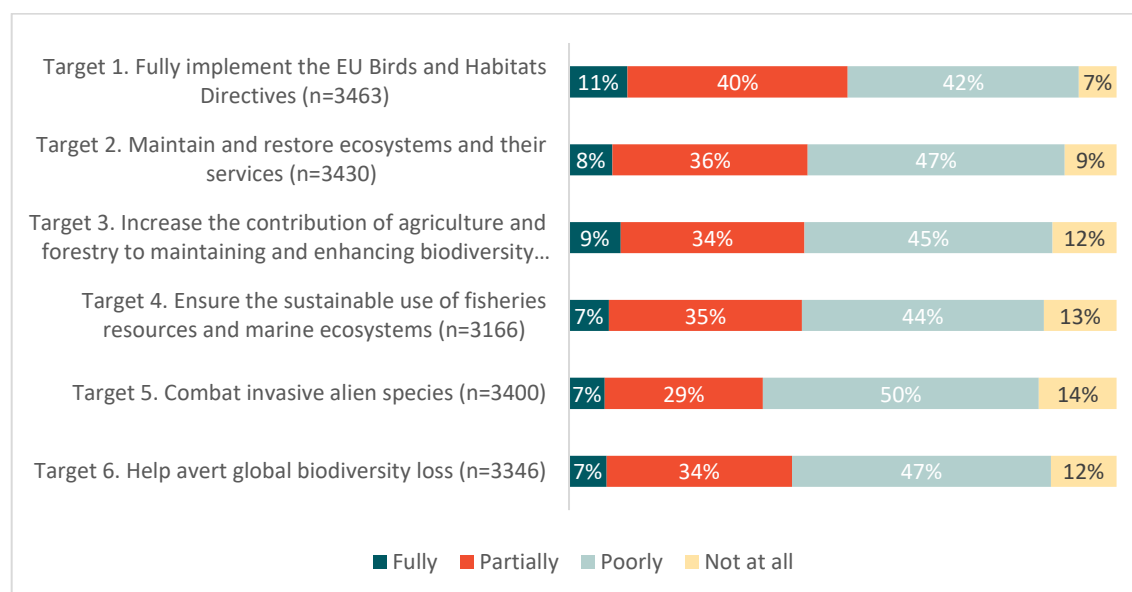
Clear evidence on significant additional financing attributable to the Strategy has not been identified in evidence-gathering for this project. Indeed, a clear understanding of biodiversity-related expenditure in the EU from EU and Member State sources is a key challenge being addressed in a concurrent project for the EC, while challenges in attribution of outcomes to the Strategy is a recurrent theme in this analysis. This is despite strong evidence in the Efficiency analysis of the high cost-effectiveness of investments that were the subject of the Strategy (see Section 5).

Case studies undertaken for this project identified that inclusion of a specific financing instrument (such as a ‘European Fund for the Environment’ would have reduced conflicts in the destination of economic resources and strengthened the effectiveness of the Strategy,⁵⁸⁵ a finding also made in Kettunen *et al* 2017.⁵⁸⁶ As shown in the figure below, a greater proportion of respondents to the OPC stated across all Targets that funding ‘poorly’ supported the implementation of the Strategy.

⁵⁸⁵ See Italy case study

⁵⁸⁶ Kettunen *et al.*, (2017) Integration approach to EU biodiversity financing: evaluation of results and analysis of options for the future. Final report for the European Commission (DG ENV) (Project ENV.B.3/ETU/2015/0014), Institute for European Policy (IEEP);

Figure 8-2 OPC responses to the question: "Has funding been sufficient to support the implementation of the EU 2020 biodiversity targets?"



Feedback from consultation supports the idea that governance mechanisms associated with the Strategy were weak and that the lack of progress in delivering on outcomes reflect insufficient budget allocated to implementation. These themes were frequently raised in case study development and through interviews with EU organisation representatives. One respondent of an EU-level organisation made the following statement in relation to this topic:

I think the governance mechanisms for ensuring the targets were being met were lacking. I think there was no dedicated budget. There was a very slow implementation by Member States, and there were no requirements specifically on Member States to spend money on managing besides achieving the conservation objectives. There was a long discussion about green infrastructure which did not result in investing in strategic and connected physical restored network of biodiversity areas.

A prima facie consideration of the Strategy supports the idea that the instrumental structure of the Strategy, including a lack of legal consequence if Member States fail to deliver on outcomes, impeded the added value that it might have produced. This is particularly so when considering the evidence of high cost-effectiveness from an economic perspective of actions within the Strategy. The target which demonstrates the greatest progress (Target 5) is also the target with a regulatory instrument (the IAS Regulation), acknowledging that it is perhaps too early to measure impacts associated with progress on Target 5. One interviewee from an international organisation noted about instruments:

At this stage, it's too late to discuss about voluntary actions. The moment has come to ask for binding targets, which will be reasonable so everyone can implement them, but have also clear objectives and be binding for all.

Another argued:

The Strategy since it is not a hard law has not caused significant change in (our sector).

Stakeholders engaged through the Greek case study noted:

According to these stakeholders, the legally non-binding nature of the Strategy seriously limited its added value. The lack of enforcement mechanisms allowed Greece to not follow through with some of their commitments, hampering the potential to significantly improve biodiversity protection in these areas. This is particularly relevant for areas covered by Target 2 (excluding MAES) and Target 5.

Findings from the German case study included:

According to the opinions of interviewees, the EU strategy lacked strong tools to ensure mainstreaming of biodiversity in key sectoral policies and it lacked an acknowledgement that the protection of biodiversity is a societal undertaking. Furthermore, the lack of concrete targets and commitments regarding the financing of the strategy overall has caused problems in the implementation of its targets.

As a conclusion, the overall structure of the Strategy provided an added value at EU level, however the value was lower than it would have been with stronger governance arrangements and financing instruments, driving greater implementation.

8.2.2 EQ 16- How do Member States' targets add up or compare to the targets at EU-level?

This evaluation question seeks evidence for the leadership role that the Strategy plays in setting agendas that are then followed at Member State level. One of the practical ways that the Strategy translates to action and impact is through its reflection in national strategies.

It must be acknowledged that a detailed assessment of the evolution of each Member State Biodiversity Strategy and comparison with the Strategy before 2011 and thereafter is beyond the scope of this assessment. However some evidence is available from the literature on this discussion, and each of the ten Member State case studies covered this topic in some detail, with this evidence being used in this section.

Some indication is present within literature regarding the influence of the Strategy upon the development of national legislation. For example, through the implementation of the Green Infrastructure Strategy, several Member States have established national ecological networks or equivalent instruments, whilst Germany has proceeded to develop a national green infrastructure concept. Indeed, a respondent from an international organisation noted the following about the influence of the EU Strategy on the national strategy in Germany:

Living in Germany, I know that it has an impact on our biodiversity policy, as Germany has revised the related policy, did an extensive mapping and has guidance in place that has been influenced by the EU Biodiversity Strategy.

More broadly, each of the ten case studies undertaken for this project describes the influence of the Strategy in developing Member State strategic documents, to varying degrees. This demonstrates the agenda-setting influence of the Strategy. Relevant findings from each case study are provided below:

Italy: The EUBS2020 has influenced other EU policies at EU, national and local level, as well as the Italian Biodiversity Strategy adopted in 2010 that was adapted in 2016 following the lead of the EU Strategy. The Italian Strategy was revised in 2016, when some more programming indications used to measure the impacts of the adopted actions have been

based on the Strategy and the Aichi targets⁵⁸⁷. Therefore, it is recognized the additional value resulting from the EUBS2020 compared to the value that would otherwise have been created by Italy action only through national legislation. It had an added value above all in raising awareness especially among stakeholders in the fishing and agriculture sectors.

Today those sectors are more ready to participate;

The Netherlands: Relevant Dutch commitments include the Natural Capital Agenda (NCA) of 2013, and the National Nature Vision (NNV) of 2014. While the Natural Capital Agenda and National Nature Vision referred to the Strategy, and The Netherlands reported progress to the CBD along the EU Strategy's six headline targets, no evidence was found which suggests that the EU Strategy as such triggered any significant change in biodiversity ambition and/or commitments in The Netherlands. Target 1 of the Strategy does not seem to have changed the implementation of the EU Nature Directives in The Netherlands that was already on-going, and while the headline target for FCS in combination with a 2020 deadline provided important added value to the lack of deadlines in the EU Nature Directives, because of its voluntary nature it did not trigger increased implementation ambition or pace in The Netherlands and could not be enforced. In relation to Target 2, the EU-wide capacity building on MAES implementing the strategy (Action 5) seems to have inspired or at least informed national progress in The Netherlands. However, in setting priorities to restore and promote the use of green infrastructure (Action 6) the Strategy and its follow-up action through the EU Green Infrastructure Strategy did not make a difference to the status quo. In relation to Target 4, similar as to Target 1, the Strategy did not go beyond what was already integrated in the reformed EU's Common Fisheries Policy adopted a few months after the EU Strategy;

Finland: Most of the inspiration of Finland's national strategy was drawn from the Aichi Biodiversity Targets, however there has been probably an increased ambition and seriousness in their delivery thanks to the Strategy. Moreover, the EU has had a real added value for the development and implementation of action related to IAS;

Greece: not all targets of the national Strategy for Biodiversity 2014-2029 (in total 13 General Targets) correspond to a target from the EU Strategy to 2020. Moreover, the Headline target of the EU Biodiversity Strategy is not explicitly covered by any of the targets of the national Strategy. All Greek stakeholders consulted mentioned that the EU Strategy has played a central role in the design of the national strategy;

Romania: Stakeholders generally agree that the Strategy brought additional benefits compared to Member State action. One stakeholder reported that stopping the EU intervention would lead to negative impacts in the medium to long term. Another stakeholder highlighted that EU law has had a significant impact on nature protection in Romania. Most of the positive legal developments that have happened in Romania in the past 15 years are directly linked to the transposition of the relevant EU directives and the pressure of the European Commission to ensure compliance. Other stakeholders noted that the adoption of the National Biodiversity Strategy is directly linked to the EU Biodiversity Strategy, and its objectives are aligned to those of the EU strategy. In the absence of the EU strategy, there may not have been a national strategy, and it would not have had the same ambitions. However, impact on the ground remains limited because the strategy is non-binding;

⁵⁸⁷ 6th National report to the CBD - Italy (Convention of Biological Diversity, 2019)

Germany: The National Biodiversity Strategy was developed in 2007 so pre-dated the EU Strategy and has not since been updated. A new National Biodiversity Strategy is currently under development. The EU Biodiversity Strategy is perceived by stakeholders as having been helpful to inform discussions, although there are still conflicts with stakeholders due to EU legislation being perceived as too strict with regard to the protection of certain species. Overall, the EU Biodiversity Strategy did not significantly alter national ambitions, except in some specific circumstances;

Lithuania: Stakeholders expressed the view that progress would not be so visible without the EU strategy. One important initiative resulting from the European Strategy has been the mapping and assessment of ecosystems and their services (MAES) and its integration into decision making. There was little probability that this kind of initiative would take place without the European Biodiversity Strategy. Now this concept is making its way in various national legislative proposals, expectations related to MAES policy initiative are high. A stakeholder noted that the EU BDS has definitely provided added value, by setting out a framework that the authorities have to work with. The strategy has emphasised that actions and resources should not only concentrate on species, but on whole ecosystems;

Spain: The national strategy for the period 2011-2017 was developed following the lead of the targets set out in the EU Biodiversity Strategy for 2020 and the principles and conclusions of the CBD. Spain had no biodiversity-related strategy nor targets in place prior to the EU Strategy. Before the elaboration of the national strategy it was evident that knowledge and research production on biodiversity was insufficient and not updated⁵⁸⁸;

Bulgaria: Overall, taking into account the results from the stakeholder's survey, the opinions of the interviewed experts and the analysed evidence for implementation of Biodiversity Strategy targets it can be concluded that for Bulgaria, the EU Biodiversity Strategy to 2020 did not impact the country's ambition and commitments in the field of biodiversity conservation;

Slovakia: The EU Strategy impacted the design and implementation of Slovak National Biodiversity Strategy and Action Plans, mainly in the agricultural and forestry sector.

In conclusion, while it is difficult to identify and measure the changed *impact* of the Strategy through its influence on Member State implementation through national strategies, in most case studies the relevant Member State representatives hold a strong conviction that the EU Strategy raised the ambition of national strategies and provided a structure framework to follow (with some notable exceptions). In most cases, implementation remains insufficient to achieve the targeted outcomes and structural weaknesses remain.

⁵⁸⁸ National Strategic Plan for Natural Heritage and Biodiversity 2011-2017 (MITECO, 2011)

9 Horizontal measures

Three ‘horizontal measures’ are relevant across targets and overall for the Strategy:

- Further strengthen the EU biodiversity knowledge base
- Build partnerships for biodiversity
- Mobilise financial resources to support biodiversity and ecosystem services

With regard to the horizontal measures, the mid-term review concluded that significant progress was being made to integrate biodiversity funding opportunities in different EU funding programmes, in methods to track and biodiversity-proof the EU budget, and in enhancing and better coordinating resource mobilisation from EU external funding instruments through the ‘Biodiversity for Life’ flagship initiative. In terms of partnerships, the mid-term review emphasized the re-launch of the EU Business and Biodiversity Platform, the Biodiversity and Ecosystem Services in Territories of European Overseas (BEST) and its support to the initiative on The Economics of Ecosystems and Biodiversity (TEEB). However, at the time of the mid-term review it was still too early to assess the value of many reported initiatives.

9.1 Further strengthen the EU biodiversity knowledge base

The development of the EU biodiversity knowledge base is a clear achievement of the Strategy, with significant progress across targets to fill key information gaps and further progress the knowledge base of biodiversity, acknowledging that significant gaps remain to be addressed in future work. Table 4-1 includes a summary of the extensive range of actions led by the EC across targets and actions, including those to develop new scientific knowledge, as well as actions to disseminate this knowledge and the biodiversity knowledge of key stakeholders through working groups, training, workshops, task forces, guidance documents and other means. The European environment - state and outlook 2020 report by the EEA is built upon the considerable work by Member States and European agencies to assemble relevant biodiversity information across ecosystem types.

This study has described a broad range of actions across targets that have added to biodiversity knowledge. Some key additions include:

- The Mapping and Assessment of Ecosystems and their services (MAES)
- Integrated System of Natural Capital and ecosystem services Accounting in the EU (KIP-INCA)
- Biodiversity Information System for Europe (BISE) as single-entry point for published data and information
- EU support for science-policy interfaces: IPBES, EKLIPSE, Biodiversa.
- Work in relation to Target 2 to raise the profile of green infrastructure including the GI Strategy among other initiatives
- The European Alien Species Information Network (EASIN) and the establishment of the list of IAS of Union concern
- Knowledge on the status of shark species and impacts of fishing gear on mammals, seabirds and reptiles through the EU Finning Regulation and Technical Measures Regulation.
- In relation to Target 6, the Digital Observatory for Protected Areas (DOPA) developed by JRC to assess, monitor, and forecast biodiversity in protected areas globally.

EU funded setup of regional observatories of biodiversity and protected areas - BIOPAMA (in ACP countries), OFAC (in central Africa), and BID (to improve quality and use of scientific information related to biodiversity for decision-making).

Nevertheless, some key gaps in information remain and have been identified in analysis:

Information about Natura 2000 area management and management effectiveness

Indicators on genetic diversity, soil biodiversity and pesticide use.

Time series data on agricultural intensification, affecting understanding of impacts on biodiversity and ecosystems surrounding agroecosystems.

Significant knowledge gaps in marine ecosystems, relating to anthropogenic impacts from chemicals, nutrient discharge, marine litter and underwater noise, in addition to habitat loss trends and biodiversity. Knowledge gaps relating to the effective implementation of the landing obligation were also identified.

Data on drought/heat induced tree mortality, storm damage (forests), air pollutant concentrations and removal capacity of vegetation (urban), biophysical and ecosystem service data on wetlands, eutrophication from local pressures (heathlands and shrubs), climate change impacts on water quality, fish catches, invasive alien species, and biological quality elements (rivers and lakes).

Key data on ecosystem restoration needs and priority actions (under the RPFs)

IAS knowledge gaps underpinning assessments of species risk

While many data gaps remain, this reflects the huge challenges faced in assembling the information needs required to fully incorporate biodiversity needs in broader decision-making, rather than any lack of effort to date.

9.2 Build partnerships for biodiversity

Accompanying actions undertaken to build biodiversity knowledge base is the need to develop strong partnerships with Member States, international agencies, civil society and experts. Significant action has taken place in this regard, starting with the common implementation framework (CIF) between the EC and Member States with stakeholders and civil society, which also serves the purposes of monitoring, assessing and reporting on progress in implementing the Strategy. The CIF involved the Biodiversity and Nature Directors' meetings, the Coordination Group for Biodiversity and Nature (CGBN) and a range of working groups extending across the six targets.

Other initiatives to facilitate partnership-building include the relaunched EU Business and Biodiversity Platform (B@B) to facilitate private sector involvement in biodiversity conservation, the Biodiversity for Life initiative, EU involvement in the Critical Ecosystems Partnership Fund (CEPF) and the Wealth Accounting and Valuation of Ecosystem Services (WAVES).

As identified in the Effectiveness section of this study, a large range of stakeholder engagement activities has been undertaken across the duration of the Strategy, including the Natura 2000 Biogeographical Process, the European Network for Rural Development (ENRD), the EASIN network, FARNET Fisheries Action Network and European Innovation Partnership (EIP).

Despite this action, results from the OPC suggest the majority of respondents did not consider that fostering cooperation was a key achievement of the Strategy (see Figure 8-1).

9.3 Mobilise financial resources to support biodiversity and ecosystem services

Actions targeting the mobilisation of financial resources to deliver on the Strategy's ambition can be identified across all Targets. These include the establishment of the National Capital Financing Facility (NCFF) by the EIB, the LIFE instrument (funding increased by 10% in 2018-2020 following the Action Plan for People, Nature, and the Economy), 7th FP and then Horizon 2020 funding for research and innovation projects focusing on biodiversity and ecosystem services, the European Fund for Strategic Investments (EFSI) for large restoration investments in 2015.

As noted in the mid-term review, biodiversity elements have been integrated to different degrees into the ESIFs, notably the EAFRD, the Cohesion Policy Funds (i.e. the European Regional Development Fund, the European Social Fund, and the Cohesion Fund) as well as the EMFF.

In terms of outcomes, some clear successes are evident, particularly in relation to the significant increase in financing associated with Target 6. However, funding issues were identified across targets, and reinforced in Member State case studies in Appendix C, relating to insufficient targeting of biodiversity funding (Finland, Spain, Italy, Romania), insufficient funding for tackling invasive alien species (Germany), insufficient integration and allocation of sectoral funds to biodiversity activities (Finland, Germany), and a lack of political will to finance biodiversity activities (Germany).

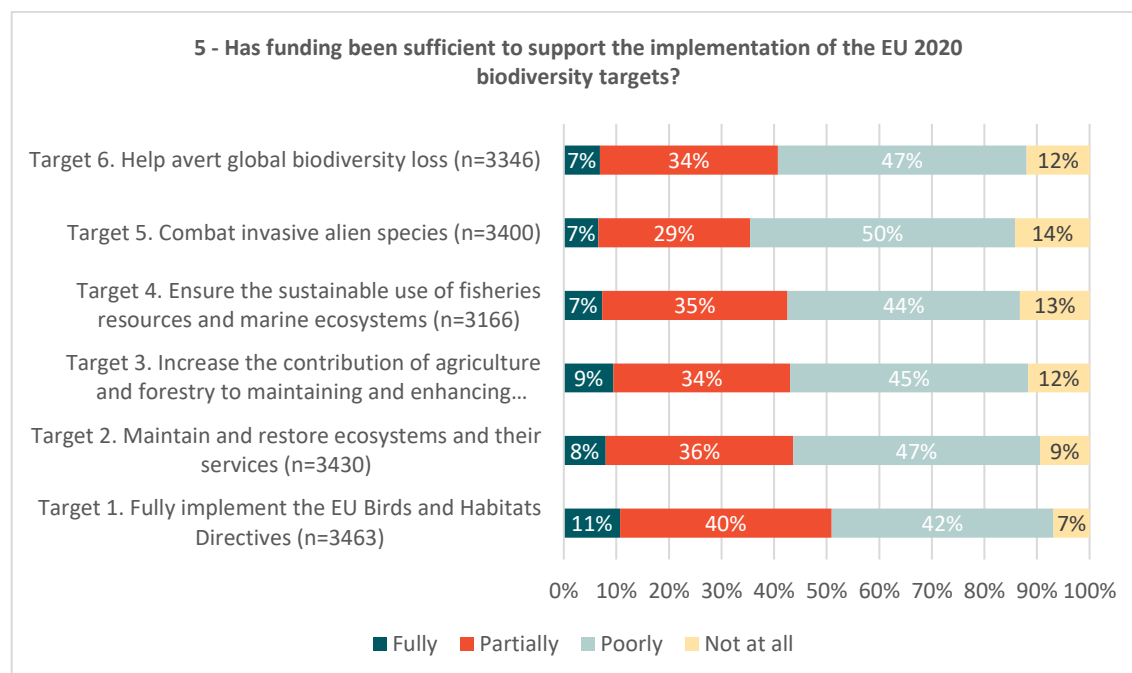
The absence of a dedicated financing instrument for delivering on specific outcomes of the Strategy has been identified as a key weakness, particularly for Target 2 for which implementation has especially been lacking (and only two Member States have developed RPFs), Target 1 for which the Natura 2000 network remains incomplete, and Target 5 for which interventions will soon be required (the IAS Regulation having been implemented relatively recently).

Financing through the CAP in relation to Target 3a represented the significant majority of all financing for biodiversity in the EU (estimated at over 70% of all financing for biodiversity) and despite some positive outcomes (e.g. the simplification of cross-compliance, the adding of a Good Agricultural and Environmental Condition relating to landscape features), various analysis noted the limited impact of this resource mobilisation in addressing Target 3a (see Effectiveness section for details) suggesting the need for better targeting of this investment source and/or increases in the scale of funding.

Lastly, the dearth of private sector investment in tackling biodiversity loss (despite progress made through the Business@Biodiversity Platform) is identified as a significant untapped resource potential to reduce pressures on biodiversity resulting from business activities.⁵⁸⁹ As noted in the Effectiveness section, a lack of awareness and understanding of natural capital and nature-related financial risk is regarded as an obstacle to greater private sector engagement.

Interestingly, OPC results on funding shows that respondents believe insufficient funds were allocated to all targets except Target 1 (although results were evenly split on Target 1).

⁵⁸⁹ Rayment et al., (2018) Valuing biodiversity and reversing its decline by 2030, IEEP Policy Paper.

Figure 9-1 OPC results on funding for the Strategy

10 Conclusions

This section presents the main conclusions of our analysis.

10.1 Conclusions per evaluation criteria

The conclusions are presented in a series of summary table presenting for each evaluation criteria our overall analysis.

Effectiveness

Table 10-1 Conclusions on Effectiveness

Conclusion on Effectiveness - Has the EU Biodiversity Strategy worked as expected? What have been the major achievements? Where has the Strategy failed to achieve its objectives? To what extent have stakeholders been actively engaged?	
What has worked well?	<ul style="list-style-type: none"> The Strategy has been associated with a range of positive achievements encompassing, inter alia, stakeholder involvement, increased integration of biodiversity with other EU policies, invasive alien species legislation, and (small) increase EU funding towards biodiversity activities, yet attributing these impacts directly to the Strategy itself is challenging. This is largely due to the non-binding nature of the Strategy meaning directly related evaluating mechanisms are not linked to the Strategy, in addition to the Targets and Actions of the Strategy itself reliant upon the implementation of other policies and Directives. The establishment of the Strategy has led to a centralised measuring and monitoring of biodiversity progress calibrated to a central reference point. This is an essential step to the continuation of tracking and monitoring biodiversity status throughout the EU, and to inform decision making processes. A range of monitoring frameworks have been established in relation to the Targets and Actions defined under the Strategy, which continue to build on the knowledge of the status of EU habitats and species. <p>By Target:</p> <ul style="list-style-type: none"> Target 1- The establishment of the Natura 2000 network is regularly cited as a major success story. Non-bird species and Annex I habitats are more likely to have a good conservation status if their respective populations or habitat area are well represented by the Natura 2000 network, whilst certain species beyond the Natura 2000 sites also benefit from the network. Target 2- MAES activities have led to one of the most advanced regional ecosystem assessment schemes, building a significant knowledge base on EU ecosystems and the services they provide.

Conclusion on Effectiveness - Has the EU Biodiversity Strategy worked as expected? What have been the major achievements? Where has the Strategy failed to achieve its objectives? To what extent have stakeholders been actively engaged?	
	<ul style="list-style-type: none"> Target 3A- Agrienvironmental- and climate measures funded through the CAP have shown to have positive impacts at local scale. Actions through the EIP-AGRI initiative have facilitated collaboration amongst farmers in order to implement a range of projects which have the potential to benefit biodiversity. Target 3B- Sustainable Forest Management Plans are used as a tool by forest owners throughout Europe, yet information on their effectiveness and inclusion of biodiversity-relevant measures remains unclear. Target 4- Important legislative frameworks have been developed to assist in delivering Target 4, yet the majority of these developments are not directly attributable to the Strategy. For example, under the CFP important developments have been made in regards to TACs, multi-annual plans, landing obligations, technical measures and discard plans. The introduced MSY objective has begun to lead to a shift from precautionary approaches to fishery management to approaches more aligned to scientific advice. Target 5- The legislative framework established by the IAS Regulation is an integral step forward to tackling invasive alien species. The establishment of the EASIN Network has assisted in facilitating access to data on reported and has encouraged shared approaches to tackling alien species. Target 6- International financial flows from the EU and its Member States to biodiversity related investments has been significant since the Strategy was published. EU initiatives such as BEST have increased the efficiency and access of funding for actions related to biodiversity and sustainable ecosystem management.
What has not worked well?	<ul style="list-style-type: none"> With the exception of Target 5, progress towards the EU Biodiversity Targets has been limited. A range of barriers hindering progress towards Targets have been identified, with the lack of legally-binding provisions commonly cited as a key reason for limited action and progress on the biodiversity agenda throughout Europe (particularly on Target 2). Many direct and indirect pressures and drivers of biodiversity loss remain, with a significant proportion of these accelerating in recent times. As such, despite the identification of successful biodiversity actions noted throughout the report, these are insufficient to prevent continued biodiversity loss. The lack of a comprehensive overview of harmful subsidies inhibits targeting and advocating for the removal of such funding which continues to drive biodiversity loss in the EU and globally. Despite increases in funding, it is clear that it remains insufficient to achieve the EU's biodiversity targets. Information gaps on funding also limits the tracking of its effectiveness and efficiency, particularly in regards to Target 6. Similarly, biodiversity actions within the EU such as protected area management suffer from limited implementation, due to insufficient conservation measures, limited management planning, inadequate funding and a lack of effectiveness indicators and monitoring.

Conclusion on Effectiveness - Has the EU Biodiversity Strategy worked as expected? What have been the major achievements? Where has the Strategy failed to achieve its objectives? To what extent have stakeholders been actively engaged?	
	<ul style="list-style-type: none"> Consultations identified that improved awareness and engagement of various stakeholders have resulted from the activities and initiatives stemming from the Strategy, yet 'silo thinking' is still prevalent in many instances. This prohibits the development of holistic approaches to tackling complex biodiversity issues. <p>By Target:</p> <ul style="list-style-type: none"> Target 1- Natura 2000 sites continue to suffer from insufficient management, with inadequately defined conservation objectives and subsequent measures hindering the effectiveness of such sites. Target 2- The lack of a consistent, EU-wide coherent approach to restoration actions (and monitoring of such actions) has hindered restoration activity. The minimum uptake of RPFs and the lack of political will by Member States to implement restoration activities are seen as key barriers to the achievement of the Target, whilst ambiguity of the Target itself has limited its effectiveness. Target 3A- The impacts of greening measures at EU-level are limited due to their insufficient coverage and favourability to select low-impact biodiversity measures by farmers. Target 3B- forest management plans commonly lack a holistic approach to biodiversity conservation and restoration, whilst significant portions of EU forests are not covered by management plans. Target 4- Many fish stocks remain overfished and/or outside safe biological limit (acknowledging that this tackling this alone would not lead to biodiversity benefits), whilst data gaps (on status and trends of marine ecosystems) hinder the implementation and potential effectiveness of measures which could benefit marine biodiversity. Target 5- Data gaps on interregional flows and global trade in relation to IAS are present, which can to assigning a 'lower consequence' of risk in species assessments. The prevalence and impacts of this are currently unknown however, given the nascent nature of the Regulation and Union List. Target 6- Information gaps on (international) biodiversity funding limits the tracking of its effectiveness and efficiency.
Strength of evidence	Medium. An array of evidence depicts the outputs of the Strategy to 2020, encompassing all key stakeholder groups, yet the robust evidence which points to the impacts of Targets and Actions and importantly, the attribution to the Strategy is lacking in many instances. Consultations echoed this, with stakeholders regularly attributing outputs and impacts to the various policy domains encompassed in the Strategy itself.
Indication of bias	The analysis has drawn from a range of literature, policy documentation, and stakeholder views to provide a holistic overview of perspectives. As such, the risk of bias has been minimized.

Efficiency**Table 10-2 Conclusions on Efficiency**

Conclusion on Efficiency - To what extent has the strategy been cost-effective? Was the strategy the most appropriate instrument to achieve the EU biodiversity targets to 2020? What have been the main socio-economic impacts of the strategy?	
What has worked well?	<ul style="list-style-type: none"> Overall, the analysis of the Efficiency question shows that the Strategy had the potential to give rise to economic benefits that could far exceed the costs incurred from the full implementation of its targets and actions. The literature indicates that investments which deliver against the individual targets of the Strategy give rise to cost effective measures and activities, with some exceptions (discussed further below). In terms of the socio-economic impacts of the Strategy, it is evident that the current implementation of the components of the Strategy's targets already support directly and indirectly hundreds of thousands of jobs and generate income for (rural) communities all across the EU. <p>By target:</p> <ul style="list-style-type: none"> Target 1: Cost effectiveness of action in relation to Target 1 is high based on existing evidence, although limited progress has been identified and direct attribution of impacts to the Strategy is difficult to establish Target 2: High cost-effectiveness of restoration investments are identified in the literature, and actions undertaken in Target 2 can be expected to contribute to greater efficiency in such investments, although attribution remains unclear and limited restoration outcomes reduce the scale of benefits produced against this target. Target 3a: The sheer scale of expenditure sourced from the CAP for biodiversity-related purposes reflects the scale of potential benefit that could be produced in this area. Target 3b: Innovative finance mechanisms such as PES have led to private initiatives which can benefit biodiversity in forest ecosystems (despite uptake achieved at local rather than EU scale). Target 4: The establishment of the MSY concept and achieving healthy stocks in some regions (notably the NE Atlantic) creates not only potential biodiversity gains, but economic benefits to a range of stakeholders. Target 5: The IAS Regulation has prompted additional expenditure by Member States, added to the information base and can be expected to increase preparedness and response to current and emerging IAS threats. Given the high cost-effectiveness of prevention and early intervention, this is likely to be highly cost-effective expenditure, although it is too early for hard evidence of impacts at this stage. Target 6: A significant increase in expenditure has been mobilised within the EU for global biodiversity conservation
What has not worked well?	<ul style="list-style-type: none"> Although it is estimated that the full implementation of the Strategy would generate net benefits, the current level of progress towards achieving most of the targets does not fully capture these benefits and the EU's natural capital is progressively deteriorating.

Conclusion on Efficiency - To what extent has the strategy been cost-effective? Was the strategy the most appropriate instrument to achieve the EU biodiversity targets to 2020? What have been the main socio-economic impacts of the strategy?	
	<ul style="list-style-type: none"> The analysis showed that the non-binding legal nature of the Strategy hindered progress towards its targets and in turn the cost-effectiveness of the Strategy. Another Strategy that combines legally binding instruments, especially for ecosystems restoration, with innovative financing mechanisms could be expected to deliver better results in terms of overall implementation and increase funding opportunities. Some negative socio-economic impacts can be generated by some of the Strategy's actions; however, these are considered minimal and lower than the positive impacts. <p>By target:</p> <ul style="list-style-type: none"> Target 1: Shortcomings in funding mobilisation reduced the net benefits produced within Target 1. Target 2: Lack of a dedicated funding instrument associated with Target 2 likely resulted in uneven implementation across Member States, reducing the efficiency of investment Target 3a: Despite the highest expenditure on biodiversity in the EU from the CAP (estimated at around 70% of total expenditure) and some identified benefit produced, most evidence points to relatively low cost-effectiveness of this expenditure on current allocation. Target 3b: PES use in forestry was only marginal and associated efficiency gains were therefore not realised. Target 4: Continued overfishing produces long term negative socio-economic impacts, as well as reduced ecosystem service delivery Target 5: Timing is too early to identify the cost-effectiveness of implementation through impacts Target 6: Little data exists to identify the cost-effectiveness of resources mobilised for international action
Strength of evidence	Low to Medium: Evidence on the precise economic costs and benefits that emerged solely from the Strategy is scarce. However, the analysis focused on sources that relate to the individual elements of the Strategy's targets. For these, there was a moderate evidence gap identified for examining the cost-effectiveness of Target 1, 2, 5, and 6 and a significant evidence gap for Target 3A, 3B, and 4.
Indication of bias	The analysis uses papers published by different sources, such as peer-reviewed scientific journals, the European Commission, and other international organisations, and has been complemented with stakeholder input.

Relevance**Table 10-3 Conclusions on Relevance**

Conclusion on Relevance - To what extent do the targets of the Strategy (still) correspond to the current needs of the EU with regard to biodiversity? Has the Strategy been flexible enough to respond to new or emerging issues? How relevant is the Strategy for addressing the needs and interests of different stakeholders and for EU citizens?	
What has worked well?	<ul style="list-style-type: none"> The Strategy was underpinned by a strong evidence base and clear links were made between needs and the Strategy's targets. The Strategy targets are widely recognised by experts and stakeholders as being relevant to the EU's needs with respect to biodiversity. While some issues have grown in prominence, overall needs have not changed since the Strategy was published, so it is generally regarded as remaining relevant to needs. The Strategy and its targets have provided a broad and flexible framework, enabling action on emerging issues such as pollinators and marine plastics alongside existing commitments. The Strategy is relevant to EU citizens and the economy overall, as well as the needs of a wide range of stakeholder groups. <p>By Target:</p> <ul style="list-style-type: none"> Target 1. The fitness check of the EU Nature Directives confirmed their continuing relevance in addressing all types of pressures facing protected species and habitats. Target 2 aligned with international commitments under the CBD Aichi targets and addressed evidenced and ongoing needs with respect to ecosystem restoration, green infrastructure and no net loss. Target 3 focused on integration of biodiversity into the management of agriculture and forestry, which is widely recognised as being important to halt biodiversity decline. Target 4 focused on the sustainability of fisheries and addressed an important need with respect to biodiversity conservation. Target 5 recognised IAS as a significant threat to biodiversity in the EU, and provided a broad framework for addressing the problem at EU level. Target 6 recognised the importance of EU action in addressing global biodiversity loss and included wide-ranging actions to achieve this. The Strategy was relevant in focusing on the main areas of action in which the EU can influence biodiversity internationally.
What has not worked well?	<ul style="list-style-type: none"> The Strategy and its targets are not comprehensive, and halting biodiversity loss relies also on implementation of wider EU policy. The Strategy and its targets have been criticised as inadequate and insufficiently ambitious due to their non-binding nature and inability to address wider challenges identified at the time of the Strategy (insufficient integration across other sectoral policies, incomplete implementation of existing legislation, funding shortages, inadequate governance, limited awareness about biodiversity). Far from being inflexible, critics argue that the Strategy is too broad and would have benefited from greater specificity and more binding targets and actions

Conclusion on Relevance - To what extent do the targets of the Strategy (still) correspond to the current needs of the EU with regard to biodiversity? Has the Strategy been flexible enough to respond to new or emerging issues? How relevant is the Strategy for addressing the needs and interests of different stakeholders and for EU citizens?	
	<ul style="list-style-type: none"> Not all stakeholders see the Strategy as relevant to their needs, with some critical that it puts too little emphasis on business needs Failures in implementation mean that the needs of society and stakeholders with respect to the conservation and sustainable use of biodiversity have not been met. <p>By Target:</p> <ul style="list-style-type: none"> Target 1 was widely seen as relevant, though some critics noted it focused entirely on EU rather than national protected areas. Target 2 was criticised as insufficiently specific regarding the definition of degraded ecosystems and their restoration, and the lack of supporting actions or commitment to allocate financial resources for implementation. Target 3 did not address pressures such as the impact of pesticides and was criticised as lacking specificity and impetus for action. Target 4 focused primarily on fisheries and did not directly address wider pressures on marine biodiversity. Target 5 was widely seen as relevant by stakeholders. Target 6 was criticised for its lack of specificity and impetus for action.
Strength of evidence	Medium to high: There is much evidence with respect to the EU's needs with respect to biodiversity, against which the Strategy and its targets can be analysed. Relatively few existing analyses have focused on the question of relevance, so the evaluation needed to make inferences from the available evidence, and to draw on interviews with stakeholders at EU and national level.
Indication of bias	We have been able to draw perspectives from all relevant stakeholder groups, thus minimising the risk of biased conclusions.

Coherence**Table 10-4 Conclusions on Coherence**

Conclusion on Coherence - Was the Biodiversity Strategy coherent with the Europe 2020 Strategy? To what extent does the Strategy support other EU environmental policy objectives, for example, in relation to clean air and water, the marine environment, the transition to a circular economy, sustainable production and consumption, soil protection, sustainable land use and management, waste management, and the sustainable use of resources? What are the synergies or overlaps? To what extent are the biodiversity targets coherent with and mainstreamed into other EU policies, in particular on agriculture, forestry, fisheries, regional and urban development, infrastructure (in particular transport, energy and environmental infrastructure, ports, and mining), tourism, climate mitigation and adaptation, research and innovation as well as trade and development cooperation? To what extent is the Strategy aligned with the EU's international commitments under the Convention on Biological Diversity (Aichi targets), the Sustainable Development Goals, and the United Nations Framework on Climate Change?	
What has worked well?	<ul style="list-style-type: none"> • The Strategy declares that it is an integral part of the Europe 2020 Strategy, particularly the resource efficient Europe flagship initiative. The Strategy contributed to the Europe 2020 strategy objectives through training, job creation, building knowledge base using digital tools, promoting innovation e.g. for green infrastructure in cities, and citizen engagement and awareness raising activities. In practice, the policy instruments and funding streams of the Europe 2020 strategy were used in some ways to advance synergistic projects (e.g. Horizon 2020, ERASMUS, LIFE), though it is not possible to attribute these directly to the effect of the Strategy. • Overall, the Strategy and the other environmental objectives are closely linked and mutually supportive. The Biodiversity Strategy targets depended on the implementation of environmental legislation. Local level examples give evidence for synergies between the Strategy actions and the EU environmental objectives from restoration projects. • There has been progress on biodiversity mainstreaming at the level of policy objectives and instruments at the EU level, including better biodiversity proofing of EU funds, but gaps remain at the implementation level and many of the key decisions are made at the Member State level or at regional levels of governance. The Strategy included targets and actions directly aimed at biodiversity mainstreaming in the EU policies on agriculture, forestry, and fisheries, and the coherence of these policies with the biodiversity objective has improved since 2011. Some aspects of implementation have also improved in coherence, leading to greater synergies, and they have a key role to play in moving towards sustainable use that is compatible with biodiversity conservation. The Strategy did not include targets and actions directly aimed at economic development sectors (transport, energy, mining, tourism and EU funding for regional and urban development) but did programme actions to improve Natura 2000 protection and governance in relation to these sectors, such as guidance documents, training for judges and public prosecutors, green infrastructure planning, improved methods for assessing impact of EU funded projects, plans and programmes on biodiversity, and the no net loss initiative. Improved biodiversity proofing of EU funding to regional and urban development has improved coherence. • The Strategy was adopted in the aftermath of the 2020 Aichi Targets and is therefore generally considered to be in line with the global commitments, with some exceptions, for example the protected area target. The Strategy is, in general, in line with the relevant targets of the SDGs 14 and 15 on life under water and on land. The most relevant SDGs are 12, 13, 14 and 15 within which framework some targets and actions from the Biodiversity Strategy are directly interrelated. In some cases, the spill-over effect can influence seemingly less-related goals, and this is reflected in some of the targets and actions of the Biodiversity Strategy. There are numerous synergies between the Strategy and the EU's

Conclusion on Coherence - Was the Biodiversity Strategy coherent with the Europe 2020 Strategy? To what extent does the Strategy support other EU environmental policy objectives, for example, in relation to clean air and water, the marine environment, the transition to a circular economy, sustainable production and consumption, soil protection, sustainable land use and management, waste management, and the sustainable use of resources? What are the synergies or overlaps? To what extent are the biodiversity targets coherent with and mainstreamed into other EU policies, in particular on agriculture, forestry, fisheries, regional and urban development, infrastructure (in particular transport, energy and environmental infrastructure, ports, and mining), tourism, climate mitigation and adaptation, research and innovation as well as trade and development cooperation? To what extent is the Strategy aligned with the EU's international commitments under the Convention on Biological Diversity (Aichi targets), the Sustainable Development Goals, and the United Nations Framework on Climate Change?	
	<p>commitments for climate action under the UNFCCC. Overall, the Strategy is coherent with international climate commitments, but it is less clear whether potential synergies are being maximised.</p> <p>By Target:</p> <ul style="list-style-type: none"> Target 1: Nature Directives work in conjunction with other EU environmental legislation and policies (aided by guidance on sectors and Natura 2000 and on links between nature directives and other key legislation). Actions under the Strategy and the AP for Nature, people and the economy have further supported policy integration. Target 2 is coherent with the Europe 2020 Strategy, the global Aichi Target to restore 15% of ecosystems; and can provide significant contribution to other EU environmental legislation on nature, water, marine as well as climate objectives. High potential for synergies through ecosystem services / nature-based solutions in decision-making (GI Strategy, guidance on integrating ecosystem services). However, low uptake of win-win nature-based solutions in restoration. Target 3a: Revised CAP 2014 coherent with the Strategy at the level of policy objectives and available instruments. Target 3b: CAP includes forest biodiversity support measures but with very limited scope. Some sustainable forest management plans have integrated biodiversity objectives but there is a lack of evidence to show whether this has been done systematically or not. Target 4: Revised CFP legal framework is considered coherent with the Nature Directives, addressing the inconsistencies in the previous CFP that acted as a barrier for Member States to adopt conservation measures and restrict certain fishing practices, and incorporating some measures to mitigate the impact of fisheries and eliminate bycatch. Target 5: Strategy coherency between IAS Regulation and plant and animal health regimes. This increased focus on biodiversity threats and need for controls and management measures. Target 6: Coherent with international commitments (Aichi, SDGs, UNFCCC).
What has not worked well?	<ul style="list-style-type: none"> The biodiversity and Europe 2020 strategies do not make explicit how the joint priorities can be realized, and therefore do not provide incentives for synergies. Although the Strategy identifies several needs that are clearly related to the flagship initiatives, including skills and jobs, digital infrastructure and tools and innovation, these are not reflected in the priorities set by the flagship initiatives nor in the indicators. In practice the failure to implement, enforce, and monitor the environmental legislation fully has been a significant factor in the failure to fully achieve the Biodiversity Strategy targets. Because the level of achievement of the ecosystem restoration target was so low, it is unlikely that the Strategy contributed much to the progress in the EU environmental objectives.

Conclusion on Coherence - Was the Biodiversity Strategy coherent with the Europe 2020 Strategy? To what extent does the Strategy support other EU environmental policy objectives, for example, in relation to clean air and water, the marine environment, the transition to a circular economy, sustainable production and consumption, soil protection, sustainable land use and management, waste management, and the sustainable use of resources? What are the synergies or overlaps? To what extent are the biodiversity targets coherent with and mainstreamed into other EU policies, in particular on agriculture, forestry, fisheries, regional and urban development, infrastructure (in particular transport, energy and environmental infrastructure, ports, and mining), tourism, climate mitigation and adaptation, research and innovation as well as trade and development cooperation? To what extent is the Strategy aligned with the EU's international commitments under the Convention on Biological Diversity (Aichi targets), the Sustainable Development Goals, and the United Nations Framework on Climate Change?	
	<ul style="list-style-type: none"> There are still elements of incoherence and even conflicts between sectoral policies and the biodiversity strategy (failures of proofing and safeguarding), as well as a failure to use measures to their fullest potential to create synergies (including inadequate funding and reach of measures). All three sectors have significant pressures on biodiversity and the biodiversity indicators associated with all three sectors are still declining (see effectiveness). However, investments in transport and energy infrastructure continue to pressure biodiversity rather than incentivising synergies, due to the failure to mainstream biodiversity objectives, and this was highlighted in the case studies as a major reason for failures to achieve the EU targets. Overall, the Strategy is coherent with global commitments including international climate commitments, but it is less clear whether potential synergies with climate objectives are being maximised. <p>By Target:</p> <ul style="list-style-type: none"> Target 1: Integration with sectoral policies in practice (energy, infrastructure, fisheries, agriculture) still insufficient and these sectors continue to exert pressure on biodiversity. Target 2: Because the level of achievement of the ecosystem restoration target was so low, it is unlikely that the Strategy contributed much to the progress in the EU environmental objectives. Target 3a: Varying degrees of uptake of CAP measures focused to biodiversity and prioritizing more intensive land use options has resulted in continued pressures on ecosystems and their services. Target 3b: Lack of evidence to show whether forest management plans have integrated biodiversity objectives systematically or not and continued pressures on forest habitats and species within the Natura 2000 network indicates significant gaps in implementation. Very limited scope of CAP forest measures and risk of incoherence due to Member State implementation of CAP Pillar 1 rules to exclude areas of traditional agroforestry from CAP payments and investments with insufficient biodiversity proofing. Target 4: Limited progress on regulating fisheries in marine Natura 2000 sites. Target 5: No clear cases found but some stakeholders consider that regulatory action and funding are still too limited to meet the threat posed by invasive alien species and animal and plant diseases. Target 6: Limited progress on eliminating harmful subsidies linked to policy incoherence.
Strength of evidence	Medium to high: good evidence to analyze coherence at policy design level and potential for synergies, but actual realized synergies and conflicts are specific to local contexts.

Conclusion on Coherence - Was the Biodiversity Strategy coherent with the Europe 2020 Strategy? To what extent does the Strategy support other EU environmental policy objectives, for example, in relation to clean air and water, the marine environment, the transition to a circular economy, sustainable production and consumption, soil protection, sustainable land use and management, waste management, and the sustainable use of resources? What are the synergies or overlaps? To what extent are the biodiversity targets coherent with and mainstreamed into other EU policies, in particular on agriculture, forestry, fisheries, regional and urban development, infrastructure (in particular transport, energy and environmental infrastructure, ports, and mining), tourism, climate mitigation and adaptation, research and innovation as well as trade and development cooperation? To what extent is the Strategy aligned with the EU's international commitments under the Convention on Biological Diversity (Aichi targets), the Sustainable Development Goals, and the United Nations Framework on Climate Change?

Indication of bias

The public consultation responses to the questions related to environmental objectives revealed a stronger positive response about contributions to the air quality and climate action objectives. This may be influenced by the large proportion of responses received from the Polish forestry sector, as these are environmental objectives widely associated with forests.

EU Added Value**Table 10-5 Conclusions on EU Added Value**

Conclusion on EU Added Value - What is the added value resulting from the EU Biodiversity Strategy compared to what is likely to have been achieved by the Member States in its absence? How do Member States' targets add up or compare to the targets at EU-level?	
What has worked well?	<ul style="list-style-type: none"> The design of the Strategy leverages a number of significant potential sources of EU value added and thus the potential for EU value added from the Strategy is large, in particular through enhanced cooperation and stakeholder engagement, facilitating transboundary cooperation, setting a common best practice framework across the EU, driving greater ambition and leveraging financing for biodiversity. A number of innovations and opportunities for collaboration and information-sharing have been provided through the Strategy, including the MAES outputs and various forums for collaboration. EU value added is also created through delivering an overarching framework for the consideration of biodiversity that Member States can apply in their own national strategies. Evidence from case studies points at significant influence of the Strategy in the development of ambitious strategies at national level in many cases Structural issues relating to the absence of strong legal requirements and a dedicated financing instrument likely limited the potential EU Added Value achieved by the Strategy <p>By target:</p> <ul style="list-style-type: none"> Target 1: The significant growth in the Natura 2000 network is a clear representation of added value at the EU level. Target 2: Significant progress in the knowledge base and the development of the Green Infrastructure Strategy has led to incorporation of GI into national strategies and plans, and urban policy Target 3a: Some CAP instruments and measures contributed significantly to biodiversity goals Target 3b: Increased uptake across the EU of measures in forestry related to biodiversity conservation, associated with genetic resource conservation and stabilisation of common forest bird populations Target 4: Cooperation and information-sharing measures such as FARNET have contributed to improved marine governance and an increased knowledge base across the EU Target 5: Development of an EU-level framework for management of IAS, and a platform and improved knowledge base for IAS priority and other species through the EASIN and other measures Target 6: The increased scale of financing for conservation and sustainable use of biodiversity from EU, Member State and private sources has grown

Conclusion on EU Added Value - What is the added value resulting from the EU Biodiversity Strategy compared to what is likely to have been achieved by the Member States in its absence? How do Member States' targets add up or compare to the targets at EU-level?	
What has not worked well?	<p>The overall potential of EU value added of the Strategy through leadership and agenda-setting has not delivered outputs in practice to match the ambition of the Strategy, for a number of reasons:</p> <ul style="list-style-type: none"> • The lack of binding instruments has limited more ambitious action by Member States • The absence of dedicated financing measures associated with the Strategy has further inhibited the allocation of sufficient funds to deliver on the ambitions of the Strategy • Lack of clear and transparent data on expenditures further limits an understanding of the resources applied to implementation of the Strategy • These combine to explain the failure to sufficiently deliver against the six targets of the Strategy <p>By target:</p> <ul style="list-style-type: none"> • Target 1: The EU value-add of a connected Natura 2000 network is reduced by weaknesses in implementation, including funding at EU and MS level, cross-border cooperation, and management challenges. • Target 2: Structural weaknesses relating to funding of restoration and legally-binding targets appear to have limited the scale of implementation and therefore the value delivered through this target. Significant knowledge gaps relating to restoration remain, and general awareness of restoration needs is lacking • Target 3a: Poor targeting of CAP measures has reduced the biodiversity value produced from CAP funds, limiting the impact of the single largest source of funding for biodiversity in the EU. • Target 3b: Weaknesses and inconsistencies in forest management planning across Member States has reduced the value produced by Target 3b. • Target 4: The landing obligation, one of the few explicit additional marine components of the Strategy, has faced challenges in implementation including in coordination and comprehensiveness, which has limited the value produced. A number of data deficiencies remain. • Target 5: Continuing data gaps (such as on interregional flows and global trade on IAS) and a lack of a dedicated financial mechanism may limit action • Target 6: Despite assessing biodiversity impacts through EU Free Trade Agreements, the dearth of detailed assessment of biodiversity impacts of trade remains an ongoing weakness of this clear area of EU added value potential.
Strength of evidence	Medium to low: There has been good evidence on perspectives of key experts and practitioners from stakeholders in interviews, but concrete evidence on impact and effects generally lacking as a counterfactual cannot easily be established. The topic is not well covered in literature.
Indication of bias	We have been able to draw perspectives from all relevant stakeholder groups, thus minimising the risk of biased conclusions.

Appendix A- Glossary

Table A-1 Glossary of terms

Abbreviation	Explanation
AECM	Agri-environment-climate measures
ANANP	National Agency for Protected Natural Areas (Romania)
B4Life	Biodiversity for Life
BAU	Business as Usual
BD	Birds Directive
BEST	Biodiversity and Ecosystem Services in Territories of European Overseas
BIOPAMA	Observatories of biodiversity and protected areas
BISE	Biodiversity Information System for Europe
BR-GL	Better Regulation Guidelines
CA	Competent Authorities
CAFE	Clean Air For Europe programme
CAP	Common Agricultural Policy
CBA	Cost Benefit Analysis
CBD	Convention on Biological Diversity
CEPF	Critical Ecosystems Partnership Fund
CFP	Common Fisheries Policy
CGBN	Coordination Group for Biodiversity and Nature
CIF	Common Implementation Framework
CIS	Common Implementation Strategy
CMEF	Common monitoring and evaluation framework
COP	Conference of the Parties
DCECI	Development Cooperation and Economic Cooperation Instrument
DOPA	Digital Observatory for Protected Areas
DWD	Drinking Water Directive
EAP	Environmental Action Programme
EAFRD	European Agricultural Fund for Rural Development
EASIN	European Aliens Species Information Network
EBRD	European Bank for Reconstruction and Development
EC	European Commission
ECA	European Court of Auditors
ECJ	European Court of Justice
EDF	European Development Fund
EEA	European Environment Agency
EFA	Ecological Focus Areas
EFFIS	European Forest Fire Information System
EFI	European Forest Institute
EFSI	European Fund for Strategic Investments
EIA	Environmental Impact Assessment
EIB	European Investment Bank
EIP	European Innovation Partnership
EMAS	EU Eco-Management and Audit Scheme
EMFF	European Maritime and Fisheries Fund

Abbreviation	Explanation
ENPI	European Neighbourhood and Partnership Instrument
ENRD	European Network for Rural Development
ENRTP	Thematic Programme for Environment and Natural Resources
EQ	Evaluation Question
ERP	Economic Reform Programme
ESPG	Environmentally Sensitive Permanent Grassland
ETS	European Emission Trading Scheme
EU	European Union
EUSF	European Union Solidarity Fund
EWD	Extractive Waste Directive
F-BI	Forest-Based Industries
FD	Floods Directive
FES	Forest ecosystem services
FLEGT	EU Forest Law Enforcement, Governance and Trade
FNA	Fins Naturally Attached
FTE	Full-time equivalent
GAEC	Good agricultural and environmental conditions
GES	Good Environmental Status
GHGs	Greenhouse gas emissions
GI	Green infrastructure
GPGC	Global Public Goods and Challenges
GSP	Generalized Scheme of Preferences
GWD	Groundwater Directive
HD	Habitats Directive
IAS	Invasive alien species
IED	Industrial Emissions Directive
IEEP	Institute for European Environmental Policy
IPBES	Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services
IPP	Integrated Product Policy
IPPC	Integrated Pollution Prevention and Control
IUCN	International Union of Conservation of Nature
JRC	Joint Research Centre
MAES	Mapping and Assessment of Ecosystems and their Services
MAP	Multi-annual plans
MFF	Multi-annual Financial Framework
MS	Member State
MSFD	Marine Strategy Framework Directive
MSY	Maximum Sustainable Yield
NBS	Nature-based solutions
NCA	Natural Capital Agenda
NCOFF	Natural Capital Financing Facility
NGO	Non-Governmental Organisation
OCT	Overseas Countries and Territories
ODA	Official Development Assistance
OEFSR	Organisation Environmental Footprint Sector Rules
OPC	Online Public Consultation
OR	EU Outermost Regions

Abbreviation	Explanation
PAF	Prioritised Action Frameworks
PEFCR	Product Environmental Footprint Category Rules
PES	Payments for Ecosystem Services
RBMPs	River Basin Management Plans
RED	Renewable Energy Directive
REDD	Reducing Emissions from Deforestation and Forest Degradation
RPF	Restoration Prioritisation Framework
SCP/SIP	Sustainable Consumption and Production and Sustainable Industrial Policy
SDGs	Sustainable Development Goals
SEA	Strategic Environmental Assessment
SFM	Sustainable Forest Management
SIA	Social Impact Analyses
SMR	Statutory management requirements
STECF	Scientific, Technical and Economic Committee for Fisheries
SWD	Staff Working Document
TAC	Total Allowable Catch
TEEB	The Economics of Ecosystems and Biodiversity
TEU	Treaty on the European Union
TFEU	Treaty on the Functioning of the European Union
TSD	Trade and sustainable development
UNEP-WCMC	UNEP's World Conservation Monitoring Centre
UWWTD	Urban Waste Water Treatment Directive
WAVES	Wealth Accounting and the Valuation of Ecosystem Services
WFD	Water Framework Directive
WG	Working Groups
WISE	Water Information System for Europe
WWF	World Wildlife Fund

Appendix B- Evaluation methodology and framework

Table B-1 Evaluation framework

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
Effectiveness							
1	To what extent has the Biodiversity Strategy worked as expected?	1.1 To what extent is the EU Biodiversity Strategy on track to achieve the <i>six operational biodiversity targets</i> and the <i>headline target</i> by 2020, and to progress towards the 2050 vision?	Headline Target: Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss.	<i>Summary of below indicators</i>	Interpretation by experts in relation to 'in so far as feasible' component	Data collection and assembly, OPC, EU-level survey, targeted survey (triangulation)	
			Target 1: fully implement Birds and Habitats Directives - To halt the deterioration in the status of all species and habitats covered by EU nature legislation and achieve a significant and measurable improvement in their status so that, by 2020, compared to current assessments: (i) 100 % more habitat assessments and 50 % more species assessments under the Habitats Directive show an improved conservation status; and (ii) 50 % more species assessments under the Birds Directive show a secure or improved status	SEBI 003: Conservation status of species of European interest SEBI 8: terrestrial SCIs and marine SCIs; -SEBI 13: Fragmentation of natural and semi-natural areas Protected Connected (ProtConn) indicator of terrestrial PA connectivity Ecoregion Coverage Statistics Species facing the risk of extinction for the ten taxonomic groups which have had a complete assessment at EU level between 2007 and 2015	N/A	Data collection and assembly (6NR), ETC/BD assessments which include 2013-2018 data. (SOER, SON etc.), JRC reports	Largely driven by biophysical indicators

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
			Target 2: To maintain and enhance ecosystems and their services: By 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15 % of degraded ecosystems	SEBI 005: Conservations status of and trends for habitats CSI14: Land take Landscape fragmentation pressure from urban and transport infrastructure expansion - EEA CSI 054 Fragmentation of natural and semi-natural areas - EEA SEBI 013 Share of forest area Proportion of EU surface waters in good ecological status (SEBI 16: Freshwater quality) Nitrate in groundwater Phosphate in rivers Biochemical oxygen demand in rivers	Expert opinion and literature on change in GI and impact on ecosystems, and the degree of success on 'maintain and enhance ecosystems' drawing from the indicators we have data for (see left). Uptake of EU level guidance on GI, biodiversity proofing,>NNL. Knowledge progress (incl. MAES barometer)	Data collection, literature review, including MAES Ecosystem Assessment. SON, SOER. If gaps remain then perhaps targeted survey e.g. "How would you define the status of ecosystems and their services in the EU since 2010"? (much improved, somewhat improved, similar, somewhat declined, much declined). Case studies NL, BG, DE, SK and RO in particular will provide an evidence base for national level progress.	
			Target 3a: Agriculture: By 2020, maximise areas under agriculture across grasslands, arable land and permanent crops that are covered by biodiversity-related measures under the CAP so as to ensure the conservation of biodiversity and to bring about a measurable improvement* in the conservation status of species and habitats that depend on or are affected by agriculture and in the provision of ecosystem services as compared to the EU2010 Baseline, thus contributing to enhance sustainable management	SEBI 01: Abundance and distribution of selected species Area under organic farming Gross nutrient balance on agricultural land SEBI 019: Agriculture: nitrogen balance Indicator: Estimated soil erosion by water SEBI 3: Selected a) forest species and b) agricultural species SEBI 5: Selected a) forest habitats and b) agricultural habitats	Interpretation by study team experts on literature on CAP use and structure in relation to biodiversity. Information and opinions from the interviews with informed stakeholders at EU and national levels will be interpreted by the study team experts in relation to the information from the literature	Literature review, including DG AGRI Evaluations on CAP Greening and on CAP impacts on biodiversity, soil and water; Habitats Directive Reporting; ECA reports; EU-wide ecosystem assessment (Agro-ecosystems). Targeted survey / questionnaire e.g. "How effectively is the CAP being used to maximise biodiversity conservation in agricultural areas?". Case studies BG, DE, ES, GR, SK and RO in particular will provide an evidence base on national implementation experience.	

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
			Target 3b: Forests: By 2020, Forest Management Plans or equivalent instruments, in line with Sustainable Forest Management (SFM), are in place for all forests that are publicly owned and for forest holdings above a certain size** (to be defined by the Member States or regions and communicated in their Rural Development Programmes) that or receive funding under the EU Rural Development Policy, in line with Sustainable Forest Management (SFM) so as to bring about a measurable improvement* in the conservation status of forest ecosystems and species and in the provision of related ecosystem services as compared to the EU 2010 Baseline	SEBI 3: Selected a) forest species and b) agricultural species SEBI 5: Selected a) forest habitats and b) agricultural habitats SEBI 1: Forest bird index SEBI 18: Forest deadwood	% publicly owned forests with FMPs or equivalent, and forest holdings above a certain size**	Literature review, follow-up surveys/interviews will be required as the latest PAN-European data on the state of Europe's forest is from 2015. The LT case study will provide an evidence base on national implementation experience.	
			Target 4: To ensure the sustainable use of fisheries resources: Achieve Maximum Sustainable Yield (MSY) by 2015. Achieve a population age and size distribution indicative of a healthy stock, through fisheries management with no significant adverse impacts on other stocks, species and ecosystems, in support of achieving Good Environmental Status by 2020, as required under the Marine Strategy Framework Directive	Estimated trends in fish stock biomass (Index 2003= 100) Assessed fish stocks exceeding fishing mortality at maximum sustainable yield (Fmsy) CSI 032: Status of marine fisheries stocks Scientific, Technical and Economic Committee for Fisheries (STECF) Mediterranean and Black Sea assessment Number of Deep Sea VME's within EU EEZ and status and/or advice on fishing restrictions SEBI 03 Conservation status of species of European interest related to marine ecosystems SEBI 05 Conservation status of habitats of European interest related to marine ecosystems SEBI 21 Fisheries: European commercial fish stocks	Attainment of MSY	Literature review, potentially follow-up surveys/interviews. The case studies BG, LT, ES, IT and RO will provide an evidence base for national implementation experience.	

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
			Target 5: To control invasive alien species (IAS): By 2020, Invasive Alien Species and their pathways are identified and prioritised, priority species controlled or eradicated, and pathways are managed to prevent the introduction and establishment of new IAS.	SEBI 10: Invasive alien species in Europe	Identification and prioritisation lists of all IAS and pathways (union list), existence of IAS management plans	Focus on IAS Regulation, MS implementation measures in place (reporting); EASIN. Literature review on IAS and pathways identification and prioritisation, control and eradication, and management to prevent new IAS. Interview / survey questions on degree of success of management of IAS of Union concern at the MS level. The case studies BG, DE, GR, FI, and IT will provide examples of implementation approaches and challenges.	
			Target 6: To help avert global biodiversity loss: By 2020, the EU has stepped up its contribution to averting global biodiversity loss.	SEBI 23: Ecological footprint, biocapacity and reserve or deficit in EU28 Resource mobilisation (EU + MS)	Data on <i>export</i> of biodiversity loss per MS, MS financial contribution to global biodiversity conservation. Proportion of LIFE (particularly LIFE Nature & Biodiversity and LIFE Information & Governance), Natural Capital Financing Facility, Common Agricultural Policy, Common Fisheries Policy, Cohesion and European Regional Development Funds which finance measures related to biodiversity.	Literature review on EU contribution to resource mobilization; trade impacts; development cooperation contribution to reducing biodiversity losses, directly (through actions) and indirectly (e.g. through trade and tourism), potential for follow-up interviews and surveys. Potentially all case studies will provide relevant evidence.	
		1.2 To what extent have the actions defined under the	Action 1: Complete the establishment of the Natura 2000 Network, and ensure good management (sub 1: Establish	Natura 2000 coverage	Does biophysical data directly address 'completeness'?	Commission SON report, literature review on management effectiveness	

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
		strategy been implemented at the EU level and in the Member States?	Natura 2000, complete by 2012, Sub 1b: Further integrate species and habitat protection and management requirements into key land and water use policies with and beyond Natura 2000, 1c: Management Plans in place for N2000, 1D: cross border collaboration N2000)		Good management defined by existence of management plan for each site, qualitative assessment of 'good management' of these sites (e.g. what defines good management, do we have data), evidence of cross-border collaboration	across N2000, interviews with CAs on cross-border collaboration, MS PAFs. Actions under the action plan for nature, people and the economy	
			Action 2: Ensure adequate financing of N2000	N/A	Total expenditure on N2000 over time, data on management cost	PAFs and assessment of funding needs and available resources by the Commission Actions under the action plan for nature, people and the economy	
			Action 3: increase stakeholder awareness and involvement and improve enforcement. 3a: communication campaign by 2013, 3b: improved cooperation with key sectors and guidance documents developed, 3c: enforcement of Nature Directives through training on N2000 for judges and public prosecutors	N/A	SEBI 26: Familiarity with the term biodiversity / Awareness of the Natura 2000 network Existence of campaign by 2013; existence of guidance documents for key sectors; data on training for judges and public prosecutors	EUROBAROMETER SURVEYS National surveys of awareness Literature review for key guidance documents, training, but also expert opinion of success in raising awareness across key stakeholders, targeted interviews with key sectors on whether and how they have been engaged.	IUCN to include stakeholders in mapping
			Action 4: Improve and streamline monitoring and reporting (4a: by 2012 new EU bird reporting system, 4b: by 2012 dedicated IC tool)	N/A	Existence or otherwise of new EU bird reporting system and dedicated ICT Tool	Literature (Mid-term review 2015), possibly interviews/survey questions on state of monitoring and reporting, and impacts of these?	

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
			Action 5: Map and assess the state and economic value of ecosystems and their services in the entire EU territory; promote the recognition of their economic worth into accounting and reporting systems across Europe	MAES assessment results SEBI 4: Ecosystem coverage Artificial land cover per capita	Euro value of ecosystems and their services, existence of ecosystem service mapping. Existence of natural capital accounts. Progress in mapping and assessing the state of ecosystems and their services in the EU and Member States. Narrative and MS examples on valuation of ecosystem services.	Reporting and update of MAES study (Last report January 2018).	Reporting and update of MAES study (Last report January 2018).
			Action 6: Restore ecosystems, maintain their services and promote the use of green infrastructure. 6a: develop strategic framework to set ecosystem restoration priorities, 6b: EC develop GI Strategy by 2012 to promote deployment of GI.	N/A	Reporting and update of MAES study (Last report January 2018), existence of strategic framework at MS level, existence of GI Strategy. Adoption of Restoration Prioritisation Frameworks by MS. Progress in the implementation of the EU GI Strategy. EU financial instruments available for supporting Green Infrastructure. Progress in deployment of GI in MS. Amount of restoration activity in the EU.	Literature review on strategic frameworks implemented, interviews with MS CAs to establish impact of GI Strategy on encouraging investments in GI projects	

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
			Action 7: Assess the impact of EU funds on biodiversity and investigate the opportunity of a compensation or offsetting scheme to ensure that there is no net loss of biodiversity and ecosystem services. 7a: EC to develop a methodology to assess impact of EU-funded projects, plans and programmes on biodiversity by 2014, 7b: EC propose by 2015 initiative to ensure no net loss of ecosystems and their services	N/A	Existence of methodology for assessing impact of EU-funded projects, plans and programmes (biodiversity proofing). Application of methodology Existence of EU level tools to encourage no net loss of ecosystems and their services.	Literature review on existing Commission guidance and methodologies to assess impacts on biodiversity and initiatives to ensure no net loss. Interview/survey questions on existence of such methodologies/initiatives and their perceived impacts.	
			Action 8: Enhance CAP direct payments to reward environmental public goods such as crop rotation and permanent pastures; improve cross-compliance standards for GAEC (Good Agricultural and Environmental Conditions) and consider including the Water Framework in these standards. 8a: CAP direct payments reward the delivery of public environmental goods that go beyond cross-compliance. 8b: Improve and simplify the GAEC cross-compliance standards.	N/A	Proportion of CAP direct payments which reward environmental public goods beyond cross compliance. Existence of simplified GAEC standards.	Literature review on proportion of CAP payments- particularly from the ongoing CAP evaluation. Interviews/survey questions on uptake of such payments and the implementation of simplified GAEC.	
			Action 9: Better target Rural Development to biodiversity needs and develop tools to help farmers and foresters work together towards biodiversity conservation. 9a: integrate quantified biodiversity targets into Rural Development strategies and programmes. 9b: EC and MS establish mechanisms to facilitate collaboration between farmers and foresters	N/A	Expert opinion on uptake of quantified biodiversity targets into Rural Development strategies and programmes, and their perceived flexibility to regional/local needs. Existence of mechanisms to facilitate collaboration between farmers and foresters.	Literature review on quantified biodiversity targets in Rural Development strategies and mechanisms available. Expert opinion from interviews/surveys to ascertain which mechanisms have aided cooperation and helped to protect biodiversity.	

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
			Action 10: Conserve and support genetic diversity in Europe's agriculture	SEBI: 006 Livestock genetic diversity: Evolution of native population sizes and endangered breeds (cattle)	Uptake of agri-environmental measures in agriculture management plans	Interviews/surveys with MS- ie. "what measures have been implemented within your MS to support genetic diversity in agriculture?"	
			Action 11: Encourage forest holders to protect and enhance forest biodiversity. 11a: MS and EC will encourage adoption of management plans. 11b: MS and EC will foster innovative mechanisms to finance the maintenance and restoration of ecosystem services provided by forests	N/A	% of forests which have management plans. Expert opinion on the impact of the Biodiversity Strategy in encouraging the uptake of management plans by forest holders. Existence of innovative finance mechanisms used by MS to enhance forest biodiversity.	Literature review- predominantly on EU-funded programmes and projects funded which seek to conserve biodiversity, publications which review EU funded programmes and best practice examples, Interviews/surveys with MS and actors responsible for forest management to ascertain the scale of inclusion of biodiversity measures in management plans, and to gain an understanding of use of innovative financing mechanisms	
			Action 12: Integrate biodiversity measures such as fire prevention and the preservation of wilderness areas in forest management plans	N/A	Expert opinion on uptake of biodiversity related measures included within management plans and their effectiveness.	Interviews/surveys with MS CAs to estimate the scale of adoption.	
			Action 13: Ensure that the management plans of the Common Fisheries Policy are based on scientific advice and sustainability principles to restore and maintain fish stocks to sustainable levels. 13a: Maintain and restore fish stocks to levels that can produce MSY in all areas which the EU fleet operates. 13b: Develop and implement management plans with harvest control rules based on MSY. 13c: Improved data collection on MSY, which are used to guide ecological considerations in the definition of MSY by 2020.	MSY thresholds surpassed in each fishing zone Number of stocks where rate of fishing is known against MSY rate per fishing region Number of stocks fished at the MSY rate per regional fishing area	Fish stocks depleted within European fleet operation areas. Expert opinion on the integration of scientific advice within CFP. Data availability on MSY. Number of multi-annual fishing plans.	Interviews/surveys to understand fish stock state in MS.	

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
			Action 14: Reduce the impact of fisheries by gradually getting rid of discards and avoiding by-catch; make sure the Marine Strategy Framework Directive is consistently carried out with further marine protected areas; adapt fishing activities and get the fishing sector involved in alternative activities such as eco-tourism, the monitoring of marine biodiversity, and the fight against marine litter. 14a: EU will design measures to eliminate discards and avoid by-catch in order to preserve vulnerable marine ecosystems. 14b: Financial incentives provided for fisheries and maritime policy for marine protected areas.	Marine Protected Area network Conservation status of species in marine ecosystems Conservation status and trends of habitats assessed as unfavourable, per biogeographic and marine region Status assessment of natural features reported by EU MS under the Marine Strategy Framework Directive (MSFD) Number of EU Red Listed Marine Fish Status of marine fisheries stocks	Evidence of measures implemented to tackle discards, by-catch and conservation of marine ecosystems. Finance provided to enhance marine ecosystems. Existence of an EU policy to reduce unwanted catches and eliminate discards. The Existence of a Seabird By-catch Action Plan: "Action Plan for reducing incidental catches of seabirds in fishing gears".	Expert opinion (literature) and interviews with MS CAs on the effect of measures implemented to combat adverse impacts on fish stocks, species, habitats and ecosystems. Interviews/surveys with MS on financial incentives available for fisheries and maritime policy.	
			Action 15: Make sure that the EU Plant and Animal Health legislation includes a greater concern for biodiversity by 2012.	N/A	Existence of greater biodiversity concerns within EU Plant and Animal Health legislation since 2012	Literature review, potentially follow-up surveys/interviews to gain an understanding of the impact of this	
			Action 16: Provide a legal framework to fight invasive alien species by providing a dedicated legislative instrument by 2012.	Number of IAS of Union concern.	Existence of a dedicated legislative instrument on IAS since 2012.	Literature review, potentially follow-up surveys/interviews to gain an understanding of the impact of this	

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
			Action 17: Reduce the impacts of EU consumption patterns on biodiversity and make sure that the EU initiative on resource efficiency, our trade negotiations and market signals all reflect this objective. 17a: the EU will take measures to reduce biodiversity impacts of EU consumption patterns. 17b: The potential negative impacts of trade policy on biodiversity will be identified and evaluated through ex-ante trade sustainability impact assessments and ex-post evaluations, and a chapter on sustainable development will be included with provisions of importance of trade on biodiversity goals will be provided. 17c: Market signals for biodiversity conservation will be provided by MS and the Commission (including harmful subsidies).	SEBI 017: Forest, growing stock, increment and fellings Impact of EU decisions on species trade or status of species in trade	Expert opinion on resource impacts on biodiversity and existence of harmful subsidies which impact biodiversity. Evidence of biodiversity assessments present within trade agreements, and the impacts of such trade policies on biodiversity.	Literature review on the impacts of EU consumption patterns, and the trends of these impacts. Trade agreement review- particularly on sustainable development chapters within. Review of literature on market signals and instruments within the EU related to biodiversity conservation. Interviews/targeted survey to understand the impacts of trade policy inclusion of sustainable development chapters and to uncover existence of market signals present within MS.	Trade agreements, PINES data
			Action 18: Target more EU funding towards global biodiversity and make this funding more effective. 18a: The Commission and MS will increase their contribution to global biodiversity as part of global process aimed at estimating biodiversity funding needs and adopting resource mobilisation targets. 18b: The Commission will improve the effectiveness of EU funding for global biodiversity through supporting natural capital assessments, National Biodiversity Strategies and Action Plans, improving coordination within the EU and with non-EU donors in implementing biodiversity assistance/projects.	N/A	Estimations of biodiversity funding needs. Evidence of MS/EU funding provided to combating biodiversity loss and expert opinion on the impacts of these funding streams. Biodiversity-related international/EU financial flows. Identifying funding gaps and strengthening resource mobilisation Projects funded by DG-DEVCO, World Bank, and LIFE programme for biodiversity conservation.	Interviews/ targeted surveys with MS CAs to understand the scale of MS funding towards global biodiversity conservation, existence of natural capital assessments Biodiversity Strategies and Action Plans, and coordination with non-EU donors. Literature review to review EU funding for global biodiversity scale and impacts.	

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
			Action 19: Systematically screen EU action for development cooperation to reduce any negative impacts on biodiversity, and undertake SEAs and EIAs for actions likely to have significant effects on biodiversity	N/A	Expert opinion on actions which are likely to result in significant impacts on biodiversity. Existence of SEAs / EIAs on actions which are likely to incur effects on biodiversity.	Literature review on existence of SEA and EIAs from Commission which screen effects of actions on biodiversity	
			Action 20: Make sure that the benefits of nature's genetic resources are shared fairly and equitably, propose legislation to implement the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation in the EU so that the EU can ratify the protocol by 2015.	N/A	Existence of legislation to implement the Nagoya protocol by 2014.	Literature review, targeted survey/ interviews to estimate the impacts of this	
		1.3 To what extent has the strategy been successful in addressing the main <i>drivers</i> of biodiversity loss at the EU and at the global levels?	This evaluation question mostly relates to the headline target: "Headline Target: Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss" and will be applied to the Evaluation Strategy as a whole.	Landscape fragmentation pressure from urban and transport infrastructure expansion - EEA CSI 054 (Target 2) Frequency of pressures and threats on marine habitat types and species (Target 4) Artificial land cover per capita (Target 2, Action 5) Impact of EU decisions on species trade or status of species in trade (Target 6, Action 17b)	List of drivers and pressures which have impacted biodiversity loss and the degradation of ecosystem services, and expert opinion of the relative success of the strategy in addressing these issues.	Literature review to map the main drivers of biodiversity loss in the EU. Interviews/ targeted surveys to identify drivers, pressures and impacts which reoccur throughout MS and sectors. Each of these drivers, pressures and impacts will be required to be mapped against each target.	
2		2.1 What are the most significant achievements at the EU, national and sub-national levels?	All Targets	A combination of biophysical indicators from above will be used to give an indication of major achievements, and will be used as a basis to guide research into the reasons behind these achievements	List of major achievements of the Strategy, related to each Target.	Expert opinion in literature, Interviews with EU-level organisations and MS.	

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		2.2 What success factors can be identified? Have successful approaches been shared and replicated?	All Targets	N/A	List of factors which have led to the major achievements identified as part of sub question 2.1, for each target	<p>Literature review to uncover best practice examples of achieving targets. Interviews/ targeted surveys with MS and EU-level stakeholders to identify key success factor, per target. In addition to this, stakeholders will be asked to provide details on cooperation with other MS and sharing of best-practice.</p> <p>For all Targets, OPC question 40.d: "Have you been able to identify any significant contribution by your sector to achieving the strategy's targets? "</p> <p>For Target 2: OPC question: 12: "In your view, which are the most important factors of success in restoring and protecting ecosystems and their services in the EU and which are the most important challenges, gaps, or obstacles?"</p> <p>For Target 3, OPC question 15: "In your experience, which are the most important factors of success and the challenges, gaps, or causes of failure of CAP biodiversity support measures?"</p> <p>For Target 5, OPC question 28: "In your experience, which are the most important factors of success and challenges, gaps, or causes of failure in combatting IAS in the EU?"</p> <p>For Target 6, OPC question 32a: "Which are the main successes of EU action to avert global biodiversity loss and the main factors of this success? "</p>	

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
3	Where the Strategy has failed to achieve one of its objectives, what have been the contributing causes?	3.1 What key gaps or challenges, barriers and root causes of failure have hindered progress towards the targets at EU level , including in relation to financing, knowledge and awareness, governance and capacity, as well as in relation to the wider socio-economic context including possible market and regulatory failures or behavioural biases?	All targets	<p>A combination of biophysical indicators (when applicable) could be used to help identify where gaps to achieving objectives exist.</p> <p>Assessment of available data to inform a reliable assessment of performance against the targets, and consideration of key gaps in knowledge that prevent a rigorous assessment of performance against targets.</p>	List of key information gaps, barriers and drivers which lead to failure in achieving targets at EU level.	<p>Interviews with EU-level organisations and MS CAs- potential questions: "What are the key challenges you have faced in achieving the targets established in the Biodiversity Strategy to 2020?"; "How have these challenges prevented you achieving the targets?"</p> <p>For all targets OPC question 40e: "Have you been able to identify any significant barriers to your sector's contribution to achieving the strategy's targets? "</p> <p>For Target 1: OPC question 6c: "The main gaps and challenges"; Question 7: "In your view, what further EU-level actions are necessary to improve the conservation status of protected habitats and species in the EU?"; Question 2 "In your view, which are the most important factors of success in restoring and protecting ecosystems and their services in the EU and which are the most important challenges, gaps, or obstacles?"</p> <p>For Target 2, OPC question 13: "In your view, what further EU level actions are necessary to improve the state of EU ecosystems and the flow of their benefits to people?"</p> <p>For Target 3, OPC question 15: "In your experience, which are the most important factors of success and the challenges, gaps, or causes of failure of CAP biodiversity support measures?"; question 16: "What</p>	

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
						<p>additional EU level actions are needed to improve farmland and forest biodiversity? "</p> <p>For Target 4, OPC question 20a: "In your experience, which are the most important factors for improving the state of fish stocks, marine species and ecosystems and which are the main challenges, gaps and obstacles to achieving this task in the EU or in other areas where EU fisheries fleet operate?" ; question 21 "What further EU level actions are needed to protect and restore marine biodiversity? "</p> <p>For Target 5, OPC question 29: "In your view, what additional EU level actions are needed to prevent, minimise and mitigate the negative impacts of IAS on biodiversity, human health and the economy?"</p> <p>For Target 6, OPC question 32c "the main challenges and root causes of failure to avert global biodiversity loss? " ; 33 "In your view, what EU level actions are needed to effectively reduce the EU's global biodiversity footprint?"</p> <p>Targeted interviews with EU stakeholders for specific examples at EU level.</p>	

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
		3.2 What key gaps, challenges, barriers and root causes of failure have hindered the EU Member States from achieving the targets individually, including in relation to financing, knowledge and awareness, governance and capacity, as well as in relation to the wider socio-economic context including possible market and regulatory failures or behavioural biases?		<p>A combination of biophysical indicators (when applicable) to be used to help identify where gaps to achieving Targets exist.</p> <p>Assessment of available data to inform a reliable assessment of performance against the targets, and consideration of key gaps in knowledge that prevent a rigorous assessment of performance against targets.</p>	List of key implementation gaps, information gaps, barriers and drivers which lead to failure in achieving targets at MS level	As above, for MS-level applicable answers: case study documentation, interviews, survey	
			Headline Target: Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss.	N/A		For all targets, OPC questions 40a-c: "Have you been able to identify any significant positive/negative impacts on your sector resulting from the Strategy's implementation?" ; "Significant avoidable administrative burdens that have arisen from the strategy's implementation? "	
		3.3 Has the Strategy produced any unintended consequences?	Target 1: fully implement Birds and Habitats Directives - To halt the deterioration in the status of all species and habitats covered by EU nature legislation and achieve a significant and measurable improvement in their status so that, by 2020, compared to current assessments: (i) 100 % more habitat assessments and 50 % more species assessments under the Habitats Directive show an improved conservation status; and (ii) 50 % more species assessments	N/A	List of unintended consequences attributed to the strategy as a whole	Literature review to identify actions associated with the Biodiversity Strategy which have led to unintended positive or negative impacts on biodiversity and/or ecosystem services in the EU. OPC question 6d and 6e: "What are the wider positive/negative impacts of Natura 2000/ Nature Legislation in the area you live?". MS case studies will also be utilised to unearth further evidence of unintended consequences.	

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			under the Birds Directive show a secure or improved status				
			Target 2: To maintain and enhance ecosystems and their services: By 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15 % of degraded ecosystems	N/A		Literature which identifies unintended positive or negative impacts of implementing green infrastructure in the EU. Expert opinion from interviews and targeted surveys on the impacts of the Green Infrastructure Strategy	
			Target 3a: Agriculture: By 2020, maximise areas under agriculture across grasslands, arable land and permanent crops that are covered by biodiversity-related measures under the CAP so as to ensure the conservation of biodiversity and to bring about a measurable improvement* in the conservation status of species and habitats that depend on or are affected by agriculture and in the provision of ecosystem services as compared to the EU2010 Baseline, thus contributing to enhanced sustainable management	N/A		Literature review on unintended consequences of biodiversity-related measures in agriculture- for example on crop yields. MS interviews to understand the unintended consequences of the simplified GAEC standards. OPC question 14.d : "To what extent do you agree that the measures under the EU Common Agricultural Policy (CAP) 2014-2020 have provided incentives with potential unintended / indirect negative impacts on biodiversity"	

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			Target 3b: Forests: By 2020, Forest Management Plans or equivalent instruments, in line with Sustainable Forest Management (SFM), are in place for all forests that are publicly owned and for forest holdings above a certain size** (to be defined by the Member States or regions and communicated in their Rural Development Programmes) that or receive funding under the EU Rural Development Policy, in line with Sustainable Forest Management (SFM) so as to bring about a measurable improvement* in the conservation status of forest ecosystems and species and in the provision of related ecosystem services as compared to the EU 2010 Baseline	N/A		Literature review: on the unintended consequences of Forest Management Plans (for example: admin burden); the impacts of utilising innovative mechanisms to finance the maintenance and conservation of forests; the impacts of implementing biodiversity measures in Forest Management Plans. Expert opinion the estimate any unintended consequences caused by the integration of biodiversity measures in forest management plans. MS case studies will also be utilised to unearth further evidence of unintended consequences.	
			Target 4: To ensure the sustainable use of fisheries resources: Achieve Maximum Sustainable Yield (MSY) by 2015. Achieve a population age and size distribution indicative of a healthy stock, through fisheries management with no significant adverse impacts on other stocks, species and ecosystems, in support of achieving Good Environmental Status by 2020, as required under the Marine Strategy Framework Directive	N/A		Literature review on the unintended consequences of incorporating ecological considerations in the definition of MSY and on the impacts of measures implemented to combat discards and bycatch. Interviews with MS CAs on the impact of management plans with harvest control rules and the impacts of financial incentives. OPC question 18: "In your view, are there any CFP measures with potential indirect negative impacts on marine ecosystems and species?"	

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			Target 5: To control invasive alien species (IAS): By 2020, Invasive Alien Species and their pathways are identified and prioritised, priority species controlled or eradicated, and pathways are managed to prevent the introduction and establishment of new IAS.	N/A		Literature review to understand the impacts of changes made to the Plant and Animal Health Regimes and to dedicated legislative instruments before 2012. Interviews/ target surveys to understand MS views on this update.	
			Target 6: To help avert global biodiversity loss: By 2020, the EU has stepped up its contribution to averting global biodiversity loss.	N/A		Literature and interviews to understand the impacts of tackling indirect drivers of biodiversity loss. Interviews with MS and EU-level experts to understand the impacts of allocating additional resources to global biodiversity conservation.	
4	To what extent have stakeholders been actively engaged in the strategy's implementation?		The Strategy as a whole	N/A	<i>Indicators for Strategic Measure 3</i> <i>Stakeholder sectors:</i> <ul style="list-style-type: none"> • Civil society • Agriculture sector • Fishing / aquaculture sector • Forestry • Protected area managers • Finance sector • Spatial planners • Academia 	Interviews with MS, experts and key sectoral stakeholders on their involvement in the Strategy's implementation.	
Efficiency							
5	To what extent has the strategy been cost-effective?	5.1 What are the costs incurred in delivering the Strategy?	Target 1: fully implement Birds and Habitats Directives - To halt the deterioration in the status of all species and habitats covered by EU nature legislation and achieve a significant and measurable improvement in their status so that, by 2020, compared to current assessments: (i) 100 % more habitat assessments and 50 % more species	N/A	Estimated costs for N2000- management, establishment of sites, investment costs, monitoring costs, maintenance costs	<p>Literature review on cost estimations of all types of costs.</p> <p>If insufficient, interviews with MS representatives can help to identify further sources of information on country-specific costs .</p>	https://ec.europa.eu/environment/nature/natura2000/financing/index_en.htm

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			assessments under the Habitats Directive show an improved conservation status; and (ii) 50 % more species assessments under the Birds Directive show a secure or improved status				
			Target 2: To maintain and enhance ecosystems and their services: By 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15 % of degraded ecosystems	N/A	Costs of ecosystem restoration. Costs of implementing the EU Strategy on Green Infrastructure. Costs of monitoring ecosystem health (MAES)	<p>Literature review on the implementation costs of Target 2 and on EU Strategy on Green Infrastructure. Literature review on cost estimates MAES development and operation.</p> <p>If too specific and lack of estimates, literature review on ecosystem restoration in the EU to understand types of ecosystems restored, and then literature review of average restoration costs per ecosystem type.</p>	<p>https://ec.europa.eu/environment/nature/biodiversity/comm2006/pdf/2020/Fin%20Target%202.pdf</p> <p>https://ec.europa.eu/environment/enveco/biodiversity/pdf/GI_DICE_FinalReport.pdf</p> <p>https://ec.europa.eu/environment/nature/ecosystems/studies.htm</p> <p>https://biodiversity.europa.eu/maes/maes_countries</p> <p>https://ec.europa.eu/environment/nature/ecosystems/index_en.htm</p>
			Target 3a: Agriculture: By 2020, maximise areas under agriculture across grasslands, arable land and permanent crops that are	N/A	Proportion of budget dedicated to greening measures under the	Literature review on CAP costs, focusing on CAP greening measures	https://ec.europa.eu/agriculture/sites/ag

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
			covered by biodiversity-related measures under the CAP so as to ensure the conservation of biodiversity and to bring about a measurable improvement* in the conservation status of species and habitats that depend on or are affected by agriculture and in the provision of ecosystem services as compared to the EU2010 Baseline, thus contributing to enhanced sustainable management		CAP. Transaction costs associated with greening measures under the CAP.	and direct payments to farmers for biodiversity benefits.	iculture/files/fullrep_en.pdf https://ec.europa.eu/agriculture/sites/agriculture/files/external-studies/2018-analysis-admin-burden-arising-cap/final-report_en.pdf https://ec.europa.eu/environment/nature/knowledge/pdf/Biodiversity_strategy_target_agriculture_report.pdf
			Target 3b: Forests: By 2020, Forest Management Plans or equivalent instruments, in line with Sustainable Forest Management (SFM), are in place for all forests that are publicly owned and for forest holdings above a certain size** (to be defined by the Member States or regions and communicated in their Rural Development Programmes) that or receive funding under the EU Rural Development Policy, in line with Sustainable Forest Management (SFM) so as to bring about a measurable improvement* in the conservation status of forest ecosystems and species and in the provision of related ecosystem	N/A	Cost of developing Forest Management Plans (or equivalent) Opportunity costs of FMPs on forestry production value	Literature review on FMP development costs and funding under the EU Rural Development Policy. If insufficient evidence, use EU-level interviews of Forestry sector to elicit further evidence and studies on costs. If still insufficient evidence, use MS case studies for national level cost data (in particular LT)	https://forest.jrc.ec.europa.eu/en/ EU level / national level question: "Does the implementation of an FMP or equivalent reduce revenues from forestry products from that forest

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
			services as compared to the EU 2010 Baseline				(please provide evidence).
			Target 4: To ensure the sustainable use of fisheries resources: Achieve Maximum Sustainable Yield (MSY) by 2015. Achieve a population age and size distribution indicative of a healthy stock, through fisheries management with no significant adverse impacts on other stocks, species and ecosystems, in support of achieving Good Environmental Status by 2020, as required under the Marine Strategy Framework Directive	N/A	Cost of establishing MSY in a fishery. Costs of measures to achieve MSY (Programmes of Measure, policy implementation, management measures) Opportunity costs of MSY in fisheries.	Literature review on developing MSY. If insufficient evidence, use EU-level interviews of Fishery sector to identify further data, studies etc. references on costs. If still insufficient evidence, use MS case studies for national level cost data (in particular BG, LT, ES, IT, RO) to illustrate the costs entailed.	https://www.frontiersin.org/articles/10.3389/fmars.2016.00192/full
			Target 5: To control invasive alien species (IAS): By 2020, Invasive Alien Species and their pathways are identified and prioritised, priority species controlled or eradicated, and pathways are managed to prevent the introduction and establishment of new IAS.	N/A	Cost of prevention and management of IAS in the EU. Costs of measures per IAS of Union concern.	Literature review on costs of prevention and management of IAS in the EU and on measures that tackle specific IAS.	https://ec.europa.eu/environment/nature/invasivealien/index_en.htm
			Target 6: To help avert global biodiversity loss: By 2020, the EU has stepped up its contribution to averting global biodiversity loss.	N/A	EU's international biodiversity funding	Literature review on international biodiversity funding coming from the EU. Costs mentioned in the 6NR of the EU in funding biodiversity action in third countries.	https://biodiversity.europa.eu/mtr/biodiversity-strategy-plan/target-6-details
		5.2 What are the benefits produced by the Strategy and how do they compare to the costs?	Target 1: fully implement Birds and Habitats Directives - To halt the deterioration in the status of all species and habitats covered by EU nature legislation and achieve a significant and measurable improvement in their status so that, by 2020, compared to current assessments: (i) 100 % more habitat assessments and 50 % more species assessments under the Habitats Directive	N/A	Total economic benefit provided by N2000 areas compared against the costs related to this Target established in evaluation question 5.1 Economic benefits to be considered include those that derive from	Literature review on monetised benefits of the achievements under Target 1 and the benefits delivered by the network. If insufficient, interviews with MS to identify further country-specific sources of information on N2000 benefits.	https://ec.europa.eu/environment/nature/natura2000/financing/docs/ENV-12-018_LR_Final1.pdf

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
			show an improved conservation status; and (ii) 50 % more species assessments under the Birds Directive show a secure or improved status.		the 'major achievements' of this Target, as identified in question 2.1 and the economic benefits of the Natura2000 areas across all MS.	<p>OPC question 1b: "In your view, have the actions under Target 1 [...] secured funding from national and EU sources to cover the needs of conservation and restoration work?"</p> <p>OPC question 2: "Do you consider that EU and national funding for Nature is well-targeted to achieve maximum impact?"</p> <p>OPC questions 39a-39b: (a) In your view, has funding from EU and national sources for the implementation of the strategy in the EU been sufficient? Elaborate on your answer (b) has available funding been well-targeted and spent to achieve maximum biodiversity impact in a cost-effective way?</p>	
			Target 2: To maintain and enhance ecosystems and their services: By 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15 % of degraded ecosystems	N/A	<p>Total economic benefits provided by the maintenance and enhancement of ecosystems and their services compared against the costs related to this Target established in evaluation question 5.1.</p> <p>Economic benefits to be considered include those that derive from the 'major achievements' of this Target, as identified in evaluation question 2.1 and the economic</p>	<p>Literature review on monetised benefits of the achievements under Target 2 and of the EU Strategy on Green Infrastructure.</p> <p>If not sufficient, interviews will be used to identify further evidence and data to fill gaps or at least illustrate the range of benefits from restoration and GI.</p> <p>OPC questions 39a-39b (as presented above and OPC questions 11a-11b: "Do you consider that EU and national funding for ecosystem restoration and the deployment of Green Infrastructure in the EU is (a) sufficient to cover the main needs and (b) well targeted to ensure</p>	IEEP (2011). Green Infrastructure implementation and efficiency. Annex IV: Benefit Groups

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
					benefits of Green Infrastructure and of restored ecosystems across the all MS.	maximum positive impact in a cost-effective way?	
			Target 3a: Agriculture: By 2020, maximise areas under agriculture across grasslands, arable land and permanent crops that are covered by biodiversity-related measures under the CAP so as to ensure the conservation of biodiversity and to bring about a measurable improvement* in the conservation status of species and habitats that depend on or are affected by agriculture and in the provision of ecosystem services as compared to the EU2010 Baseline, thus contributing to enhanced sustainable management	N/A	<p>Total economic benefits provided by the greening of agriculture under CAP against the costs related to this Target established in evaluation question 5.1.</p> <p>Economic benefits to be considered include the 'major achievements' of this Target as identified in evaluation question 2.1 and the direct and indirect economic benefits of all the measures taken in agriculture to enhance biodiversity across all MS.</p>	<p>Literature review on monetised benefits of the achievements under Target 3a and of the CAP greening measures.</p> <p>If not sufficient, interviews will be used to identify further evidence and data to fill gaps of missing data.</p>	
			Target 3b: Forests: By 2020, Forest Management Plans or equivalent instruments, in line with Sustainable Forest Management (SFM), are in place for all forests that are publicly owned and for forest holdings above a certain size** (to be defined by the Member States or regions and communicated in their Rural Development Programmes) that or receive funding under the EU Rural Development Policy, in line with Sustainable Forest Management (SFM) so as to bring about a measurable improvement* in the conservation status of forest ecosystems and species and in the provision of related ecosystem	N/A	<p>Total economic benefits provided by Forest Management Plans (or equivalent) compared against the costs related to this Target established in evaluation question 5.1.</p> <p>Economic benefits to be considered include the 'major achievements' identified in evaluation question 2.1 and the direct and indirect economic benefits</p>	<p>Literature review on monetised benefits of the achievements under Target 3b and of the total benefits delivered by forest ecosystem services.</p> <p>EU-level interviews of Forestry sector to elicit profit figures and indirect economic benefits.</p>	https://forest.jrc.ec.europa.eu/en/

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
			services as compared to the EU 2010 Baseline		produced by services which are delivered by healthy forest ecosystems.		
			Target 4: To ensure the sustainable use of fisheries resources: Achieve Maximum Sustainable Yield (MSY) by 2015. Achieve a population age and size distribution indicative of a healthy stock, through fisheries management with no significant adverse impacts on other stocks, species and ecosystems, in support of achieving Good Environmental Status by 2020, as required under the Marine Strategy Framework Directive	N/A	Total economic benefits provided by healthy fisheries compared against the costs related to this Target established in evaluation question 5.1. Economic benefits to be considered include the 'major achievements' identified in evaluation question 2.1 and the direct and indirect economic benefits of the measures implemented to achieve MSY	Literature review on monetised benefits of the achievements under Target 4 and of the total benefits delivered by healthy fisheries. EU-level interviews of Fishery sector to elicit profit from recovered fish stocks and indirect economic benefits	
			Target 5: To control invasive alien species (IAS): By 2020, Invasive Alien Species and their pathways are identified and prioritised, priority species controlled or eradicated, and pathways are managed to prevent the introduction and establishment of new IAS.	N/A	Estimation of the cost avoided as a result of controlling IAS compared against the costs related to this Target established in evaluation question 5.1. IAS cause damage borne by, among others, agriculture, fisheries and aquaculture, forestry, and health. Economic benefits to be considered are the costs avoided by the implementation of IAS control measures.	Literature review on monetised costs to society caused by IAS and on the achievements under Target 5. OPC questions 39a-39b (as presented above and OPC questions 24a-22c: (a) "In your experience, is the cost of the restrictions on IAS of Union concern proportionate to its results?" (b) "In your experience, is the cost of surveillance and rapid eradication of IAS of Union concern proportionate to its results?", and (c) "In your experience, is the cost of management of IAS of Union concern proportionate to its results?"	https://ec.europa.eu/environment/nature/invasivealien/index_en.htm

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
			Target 6: To help avert global biodiversity loss: By 2020, the EU has stepped up its contribution to averting global biodiversity loss.	N/A	Estimation of the cost avoided as a result of EU's international biodiversity action compared against the costs related to this Target established in evaluation question 5.1.	Literature review on monetised economic benefits of EU's international biodiversity action. OPC questions 39a-39b (as presented above and OPC questions 31a-31b: Do you consider that EU development cooperation funding is (a) well-targeted to the key needs of global biodiversity protection and restoration and (b) adequate EU contribution to global biodiversity protection and restoration?	https://biodiversity.europa.eu/mtr/biodiversity-strategy-plan/target-6-details
		5.3 How timely and efficient is the process for reporting and monitoring?	All targets	N/A	Description of reporting and monitoring requirements derived by the Strategy. Description of processes involved in reporting and monitoring. Time spend on reporting and monitoring.	Literature review on the monitoring and reporting requirements under the Strategy. Literature review on the integration and open access of biodiversity monitoring and reporting data into relevant EU legislation (CAP, CFP, etc.). Interviews with DG ENV, EEA, and other stakeholders of the common implementation framework (CIF). The JRC and representatives of the BISE may be considered for filling data gaps on time spent on reporting and monitoring. Case studies may also be useful to explore country specific reporting and monitoring requirements.	
		5.4 What factors could have improved the cost-effectiveness by strengthening delivery of the targets while minimizing unnecessary costs and avoiding	All targets	N/A	For general cost-effectiveness: List of factors that minimize funding needs identified in evaluation question 5.1 while improving or not affecting the delivery of the benefits	For general cost-effectiveness: Interviews with key stakeholders will be used to identify views on how implementation costs can be minimized while benefits increase or remain the same. Subsequent analysis will result in a list of factors	

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		administrative burden?			<p>of each of the targets, identified in evaluation question 5.2.</p> <p>For administrative burden: List of factors which can improve the delivery of each of the targets while minimizing monitoring and reporting requirements, identified in evaluation question 5.3.</p>	<p>For administrative burden: Interviews with key stakeholders related to monitoring and reporting to collect views on improvement and subsequent assessment of these views.</p> <p>Case studies on MS Strategy implementation to identify good and bad practices in monitoring and reporting.</p>	
6	Was the strategy the most appropriate instrument to achieve the EU biodiversity targets to 2020?	6.1 What types of alternative instruments could have been considered for implementation?	<p>Target 1: fully implement Birds and Habitats Directives - To halt the deterioration in the status of all species and habitats covered by EU nature legislation and achieve a significant and measurable improvement in their status so that, by 2020, compared to current assessments: (i) 100 % more habitat assessments and 50 % more species assessments under the Habitats Directive show an improved conservation status; and (ii) 50 % more species assessments under the Birds Directive show a secure or improved status</p>	N/A	<p>Overview of instruments used currently at EU and MS levels for the implementation of the Birds and Habitats Directives.</p> <p>List of alternative instruments that could be used in the implementation of actions under Target 1.</p>	<p>Literature review on instruments used by MSs or non-EU countries and instruments that have not been used yet but have high conservation and restoration potential. In addition, the literature review will also focus on funding instruments used in the implementation of the Birds and Habitats Directives or other conservation and restoration initiatives.</p> <p>Interviews with key stakeholders related to the implementation and/or funding of the Birds and Habitats Directives.</p> <p>Case studies on MS Strategy implementation to identify good and bad practices of implementation and funding instruments used in the delivery of Birds and Habitats Directives.</p>	
			<p>Target 2: To maintain and enhance ecosystems and their services: By 2020, ecosystems and their services are maintained and enhanced by</p>	N/A	<p>Overview of instruments currently in use at EU and MS levels for ecosystem maintenance</p>	<p>Literature review on instruments used by MSs or non-EU countries and instruments that have not been used yet but have been developed in the</p>	

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
			establishing green infrastructure and restoring at least 15 % of degraded ecosystems		and restoration and for the deployment of green infrastructure. List of alternative instruments that could be used in the implementation of ecosystem maintenance and restoration and in the deployment of green infrastructure.	relevant literature. The literature review will include funding instruments as well. Interviews with key stakeholders related to the implementation and funding of ecosystem maintenance and restoration and for the deployment of green infrastructure. Case studies on MS Strategy implementation to identify good and bad practices of implementation and funding instruments used in ecosystem maintenance and restoration and for the deployment of green infrastructure (particularly BL, BG, DE, SK, RO)	
			Target 3a: Agriculture: By 2020, maximise areas under agriculture across grasslands, arable land and permanent crops that are covered by biodiversity-related measures under the CAP so as to ensure the conservation of biodiversity and to bring about a measurable improvement* in the conservation status of species and habitats that depend on or are affected by agriculture and in the provision of ecosystem services as compared to the EU2010 Baseline, thus contributing to enhanced sustainable management	N/A	Overview of instruments currently in use at EU and MS levels for greening agriculture (Cross compliance, Greening measures (Pillar I) and Rural development measures (Pillar II)). List of alternative instruments that could be used in the implementation of Target 3a.	Literature review on instruments used by MSs or non-EU countries and instruments that have not been used yet but have been developed in the relevant literature. The literature review will include funding instruments as well. Interviews with key stakeholders related to the implementation and funding of ecosystem maintenance and restoration and for the deployment of green infrastructure. Case studies on MS Strategy implementation to identify good and bad practices of implementation and funding instruments used in ecosystem maintenance and restoration and for the deployment of green infrastructure (particularly BG, DE, ES, GR, SK, RO)	

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			Target 3b: Forests: By 2020, Forest Management Plans or equivalent instruments, in line with Sustainable Forest Management (SFM), are in place for all forests that are publicly owned and for forest holdings above a certain size** (to be defined by the Member States or regions and communicated in their Rural Development Programmes) that or receive funding under the EU Rural Development Policy, in line with Sustainable Forest Management (SFM) so as to bring about a measurable improvement* in the conservation status of forest ecosystems and species and in the provision of related ecosystem services as compared to the EU 2010 Baseline	N/A	<p>Overview of instruments used currently at EU and MS levels for the maintenance and restoration of forest ecosystem.</p> <p>List of alternative instruments that could be used in the maintenance and restoration of forest ecosystems.</p>	<p>Literature review on instruments used by MSs or non-EU countries and instruments that have not been used yet but have been developed in the relevant literature. The literature review will include funding instruments as well.</p> <p>Interviews with key stakeholders related to the implementation and funding for the maintenance and restoration of forest ecosystem.</p> <p>Case studies on MS Strategy implementation to identify good and bad practices of implementation and funding instruments used for the maintenance and restoration of forest ecosystem (particularly LT).</p>	
			Target 4: To ensure the sustainable use of fisheries resources: Achieve Maximum Sustainable Yield (MSY) by 2015. Achieve a population age and size distribution indicative of a healthy stock, through fisheries management with no significant adverse impacts on other stocks, species and ecosystems, in support of achieving Good Environmental Status by 2020, as required under the Marine Strategy Framework Directive	N/A	<p>Overview of instruments used currently at EU and MS levels as well as in international cooperation schemes for establishing MSY in a fishery.</p> <p>List of alternative instruments that could be used in establishing MSY.</p>	<p>Literature review on instruments used by MSs or non-EU countries and instruments that have not been used yet but have been developed in the relevant literature. The literature review will include financial incentives as well.</p> <p>Interviews with fisheries stakeholders to identify currently in use and potential instruments for achieving MSY.</p> <p>Case studies on MS Strategy implementation to identify good and bad practices of implementation and funding instruments used for achieving MSY (particularly BG, LT, ES, IT, RO).</p>	
			Target 5: To control invasive alien species (IAS):	N/A	Overview of instruments used currently at EU	Literature review on instruments used by MSs or non-EU countries and	

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			By 2020, Invasive Alien Species and their pathways are identified and prioritised, priority species controlled or eradicated, and pathways are managed to prevent the introduction and establishment of new IAS.		(Action 16) and MS levels for the implementation of IAS control measures. List of alternative instruments that could be used for controlling IAS.	instruments that have not been used yet but have been developed in the relevant literature. The literature review will include funding instruments as well. Interviews with MS and EU-level experts to identify currently in use and potential instruments for controlling IAS. Case studies on MS Strategy implementation to identify good and bad practices of implementation and funding instruments used for controlling IAS (particularly BG, DE, GR, FI, IT).	
			Target 6: To help avert global biodiversity loss: By 2020, the EU has stepped up its contribution to averting global biodiversity loss.	N/A	Overview of instruments used currently at EU level for international biodiversity action. List of alternative instruments that could be used in international biodiversity action.	Literature review on instruments used by countries for international biodiversity action. These will mainly include, but will not be limited to, funding instruments. Interviews with EU-level experts to identify views on alternative instruments.	
		6.2 What would have been the pros and cons of alternative options, compared to the selected strategy?	All targets	N/A	List of pros and cons for each of the alternative instruments identified in evaluation question 6.1 for each target separately.	Assessment of the potential benefits (including cost savings) offered by the alternative instruments identified in evaluation question 6.1 for each target separately and comparison of these benefits with the benefits identified under the currently used instruments (evaluation question 5.2). Assessment of the potential costs (including foregone benefits) arisen by the alternative instruments identified in evaluation question 6.1 for each target separately and	

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						<p>comparison of these costs with the costs identified under the currently used instruments (evaluation question 5.1).</p> <p>Assessment of the administrative burden arisen by the alternative instruments identified in evaluation question 6.1 for each target separately and comparison of the burden resulted by the existing instruments (evaluation question 5.4).</p>	
7	What have been the socio-economic impacts of the strategy	7.1 What significant positive and/or negative socio-economic impacts has the strategy implementation had (including costs entailed as well as benefits arisen for different stakeholders)?	All targets	N/A	Overview of positive and negative socio-economic impacts per target.	<p>The net benefits or costs identified in evaluation question 5.2 will be complemented by a literature review to identify, to the extent possible, information on employment for each stakeholder type, aesthetic and amenity values of ecosystems, and health and quality of life impacts per target.</p> <p>OPC questions 6d-6e: In your experience, which are (d) the wider positive impacts of Natura 2000 in the area you live (environmental as well as socio-economic) and (e) the negative impacts of the implementation of Nature legislation in the area you live (environmental as well as socio-economic)?</p>	
		7.2 What have the main socio-economic impacts been, within the EU and globally, of any identified failure to achieve the EU biodiversity targets?	All targets	N/A	Overview of socio-economic impacts resulting from the failure to achieve aspects of each target.	Literature review on the potential socio-economic impacts that would have been produced if the failures identified in evaluation question 3.1 did not occur and as a result the targets would have been fully achieved.	

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Relevance							
8	To what extent do the targets of the strategy (still) correspond to the current needs of the EU with regard to biodiversity?	8.1 What needs were identified at the time the strategy was developed?	The response to this question will address the continuing relevance of all the targets to current needs; it will provide an overall assessment while referring to the needs and relevance relating to each individual target.	Indicators and datasets relating to habitats, species and sites of the Nature Directives, different ecosystem types, threats to biodiversity ecosystem services, and soil biodiversity, as described in the EU 2010 Biodiversity Baseline.	N/A	Analysis of the needs of the Strategy are set out in the EU 2010 Biodiversity Baseline (EEA, 2010), as well as the Strategy documents and impact assessment.	The answer to this question will draw on a range of quantitative indicators evidencing needs; however, much of the analysis will be qualitative, assessing the logical link between the strategy and the needs it addresses, and the continuing relevance of the strategy with reference to any changes in identified needs.
		8.2 How did the strategy link these needs to the targets defined?		N/A		Review of the impact assessment accompanying the Strategy (2011), which articulates how the Strategy sought to address the identified needs and hence the intervention logic for the strategy targets and actions.	
		8.3 Were these links clear, logical and evidence based?		N/A		Qualitative judgement, drawing on analysis of the logic and evidence underpinning the Strategy, and supplemented by review of published literature and stakeholder interviews, will inform analysis of the relevance of the Strategy to the needs.	
		8.4 How have the needs relating to biodiversity changed or evolved since the strategy was published?		Indicator sets that have been updated since 2011 (e.g. SEBI, State of Nature, MAES, SOER), mid- term evaluation and other analyses provide evidence of evolving needs.		Comparative analysis of subsequent indicator sets, complemented by literature review and stakeholder interviews, will be used to assess whether needs have changed, and continuing relevance of strategy targets and actions. This will be supplemented with review of relevant literature, MS case studies, and views of stakeholders regarding continuing relevance to needs.	
		8.5 Do the strategy targets remain relevant to these changing needs?					
		9		Has the strategy been flexible enough to respond to new		9.1 What new or emerging issues have been identified since 2010?	

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	or emerging issues?	9.2 Have the strategy targets and actions been sufficiently flexible to address these issues?				Qualitative analysis of flexibility of the strategy to address new or emerging issues identified, including examples where new or emerging issues have been successfully or unsuccessfully addressed, as well as overall analysis of whether the strategy targets and actions are flexible or inflexible. Analysis of new initiatives (e.g. EU Action plan for nature, people and the economy) and their fit with the strategy. Desk-based analysis will be informed by literature review and views and examples of stakeholders.	quantitative evidence of new and emerging issues from indicators/ analyses.
		9.3 Are there examples where the strategy and actions to deliver it have been able to respond to new or emerging issues?		N/A		Identification of examples from literature, MS case studies and stakeholder interviews.	
		9.4 Are there examples where the strategy and actions to deliver it have been unable to respond to new or emerging issues?		N/A		Identification of examples from literature, MS case studies and stakeholder interviews.	
10	How relevant is the strategy for addressing the needs and interests of different stakeholders and for EU citizens?	10.1 Which types of stakeholders and citizens have interests in the strategy or are likely to have been affected by it?	The answer to this question will address stakeholder needs with respect to biodiversity as a whole, as well as specific needs relevant to individual targets (e.g. farmers for target 3 and fishermen for target 4)	Some indicators are relevant to assessment of stakeholder needs (e.g. fish stocks, ecosystem services) - analysis will therefore identify quantitative indicators that are relevant to needs, and combine this with qualitative analysis.		Analysis of strategy and its actions to identify relevant stakeholder groups (land owners and managers, businesses/ developers, workers, local communities, visitors, ecosystem service beneficiaries, consumers)	Mostly qualitative analysis; online public consultation will give some quantitative evidence regarding stakeholder
		10.2 What are the needs and interests of				Identification of stakeholder interests through literature/ document review - including stakeholder position	

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		these different groups?				statements and submissions on biodiversity related issues Mapping of stakeholders against each target as well as strategy overall	views. Need to triangulate stakeholder views with evidence from literature and desk-based analysis.
		10.3 Does the strategy identify and seek to address these needs and interests?				Analysis of strategy and evidence of implementation to examine extent to which needs are addressed (including Nature Directives Fitness Check and other evaluations). Analysis will be supplemented by evidence from case studies and stakeholder views	
		10.4 Has the strategy helped to address these needs and interests in practice?				Evidence of strategy addressing particular stakeholder needs (e.g. delivering ecosystem services, contributing to land manager incomes) from literature review, case studies and stakeholder consultations	
		10.5 What are the views of stakeholders regarding the relevance of the strategy in addressing their needs and interests?				Analysis of stakeholder views (interviews and OPC) regarding whether strategy meets their needs	
Coherence							
11	To what extent is the EU Biodiversity Strategy coherent with the Europe 2020 Strategy for smart, sustainable and	11.1 Are the overall priorities and objectives in the two strategies complementary?	Question will be answered with reference to the strategy and its targets and actions overall, while identifying where specific targets or actions contribute to or detract from coherence.	N/A	Smarter, greener, more inclusive? Indicators to support the Europe 2020 strategy – 2019 edition	Map the Europe 2020 priorities and objectives against the EU Biodiversity Strategy targets, using the strategy texts, and the texts of the EU flagship initiatives launched under the Europe 2020 strategy, as well as initiatives under the biodiversity strategy (e.g. EU green infrastructure strategy). Identify specific linkages and	
		11.2 Do the two strategies make explicit links to one another?	Coherence will be assessed with respect to EU 2020 objectives of: Smart growth:				

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	inclusive growth?	11.3 Are there examples where the EU Biodiversity Strategy targets and actions have been in conflict with those in the Europe 2020 Strategy?	innovation education digital society Sustainable growth: Climate, energy and mobility Competitiveness Inclusive growth: Employment and skills Fighting poverty			examples of complementarity and/or conflict. Identify potential conflicts and complementarities (e.g. biodiversity action creates jobs; Natura 2000 holds back growth by restricting development). Impact assessment of strategy is a key source for identifying linkages ex ante. Look for and analyse examples of these, by target. Examples will be identified from the literature, Member State case studies, and stakeholder consultations. Nature Directives fitness check, report on biodiversity strategy and jobs, other target specific analyses will be referred to. This will take into consideration the analysis in F8 of socio-economic impacts and in R10 of stakeholder needs.	
12	To what extent does the strategy support other EU environmental policy objectives, for example, in relation to clean air and water, the marine environment, the transition to a circular economy, sustainable production and	12.1 What are the other objectives of EU policy?	Answer will address linkages between each target and each of the EU environmental objectives as set out in the 7EAP.	Biodiversity indicators are not directly applicable to this question. However, after examining how the strategy and its targets are expected to link to other EU environmental policy objectives, the analysis will refer to indicators of implementation of the strategy and its targets (under effectiveness, above) to examine progress in addressing these.	Wider environmental indicators (e.g. in State of the Environment report) are relevant, although unlikely to give specific evidence of the contribution of the strategy.	IEEP compilation of quantitative EU environmental policy objectives Additional analysis of non-quantified objectives, e.g. Clean air (NEC) Water (WFD and MSFD) Circular economy Sustainable production and consumption (7EAP and waste legislation) List EU environmental policy objectives, with time frame, and relevant policy documents	Link to EQ.13
		12.2 To what extent can the EU Biodiversity Strategy				Review of scientific literature to identify and assess linkages (contribution/ potential conflict)	Link to EQ 8 and EQ 2

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	consumption, soil protection, sustainable land use and management, waste management, and the sustainable use of resources? What are the synergies or overlaps?	targets and actions be expected to contribute to each of these objectives?				between biodiversity/ ecosystems and EU environmental objectives (e.g. effects of forest conservation on air and water quality, climate) Map expected contribution/potential conflict of EU Biodiversity Strategy targets and actions to EU environmental policy objectives using evidence from literature review and from stakeholder consultations.	
		12.3 Are there examples where actions taken under the Strategy have contributed to, or hindered, the delivery of these objectives?				Identify examples of conflict and contribution from literature, Member State case studies, and stakeholder consultations. Key sources include nature directives fitness check, green infrastructure studies, IAS studies, evaluations of CAP and fisheries policies, evaluations of other policies (e.g. WFD)	
		12.4 Are there examples of actions contributing jointly to biodiversity and other environmental policy objectives?					
13	To what extent are the biodiversity targets coherent with and mainstreamed into other EU policies, in particular on agriculture, forestry, fisheries, regional and urban development, infrastructure	13.1 Which targets and actions in the strategy are relevant to these other EU policies?	We will answer this question with reference to the strategy and its targets and actions overall, while identifying where specific targets or actions contribute to or detract from coherence - according to their relevance for the sectors (link to R8 and R9)	Not directly relevant to answering this question - instead the response will refer to the evidence from the effectiveness questions	Not directly relevant to answering this question - instead the response will refer to the evidence from the effectiveness questions	Map EU Biodiversity Strategy targets against EU policy objectives of the following: CAP (2007-2013 and 2014-2020) EU Forest Strategy & Multiannual Implementation Plan CFP (2007-2013 and 2014-2020) EU Cohesion Policy (ERDF, ESF and Cohesion funds) EIA, SEA and ELD Water Framework Directive Floods Directive Marine Strategy Framework Directive Maritime Spatial Planning Directive Green Infrastructure strategy EU Energy Union Strategy	Some of these policies have been modified or renewed during the EU Biodiversity Strategy implementation period, so will need to be evaluated separately for each programming period (e.g.

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
	(in particular transport, energy and environmental infrastructure, ports, and mining), tourism, climate mitigation and adaptation, research and innovation as well as trade and development cooperation?					TEN-E, Commission fracking recommendation ⁵⁹⁰ RED and REDII EU Strategy on Adaptation to Climate Change National Emissions Ceiling Directive (NEC) EU Transport White Paper ⁵⁹¹ , TEN-T Commission Raw Materials Initiative (2011) 7th Framework Programme for Research (FP7) (2007-2013) and Horizon 2020 (2014-2020) Commission communication on tourism ⁵⁹² (2010)	CAP 2007-2013 and 2014-2020)
		13.2 Are the biodiversity targets and actions consistent with EU policy objectives in these areas?		N/A	N/A	Analysis of the targets and actions based on the above mapping, supplemented by literature review and views expressed by stakeholders.	
		13.3 Are there examples of conflicts between EU biodiversity targets and actions, and these other EU policy objectives?		N/A	N/A	Step 1: identify the types of conflicts that might occur (e.g. Natura 2000 holds back growth by restricting development) Step 2: look for and analyse examples of these. Examples will be identified from the literature, Member State case studies, and stakeholder consultations	
		13.4 Are the biodiversity targets referenced in these other EU policies?		N/A	N/A	Analysis of the texts of the other policies, but also in particular reviews of the operational programmes, RDPs etc.	The biodiversity targets are most likely to

⁵⁹⁰ Commission Recommendation of 22 January 2014 on minimum principles for the exploration and production of hydrocarbons (such as shale gas) using high-volume hydraulic fracturing (2014/70/EU).

⁵⁹¹ European Commission, 2011. White Paper: Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system COM(2011) 144 final, 28.3.2011.

⁵⁹² European Commission, 2010 'Europe, the world's No. 1 tourist destination - a new political framework for tourism in Europe. COM(2010) 0352 final */30.6.2010

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
							be referenced in the implementation tools etc rather than the policies themselves.
		13.5 Are the EU biodiversity targets effectively mainstreamed into these other EU policies, or are there examples of action in pursuit of other EU policies which conflicts with them?		N/A	N/A	Analysis of mainstreaming will build on the evidence from C13.4 where policies refer to the biodiversity targets but also consider where the policies may not explicitly refer to the biodiversity strategy but mainstream individual targets or actions. Examples of conflicts will be identified from the literature, Member State case studies, and stakeholder consultations.	
14	To what extent is the strategy aligned with the EU's international commitments under the Convention on Biological Diversity (Aichi targets), the Sustainable Development Goals and the United Nations Framework Convention on Climate Change?	14.1 What are the EU's commitments under the CBD (Aichi targets), SDGs and UNFCCC?	The answer to this question will examine the overall set of targets and actions and how they link with international commitments, as well as the alignment of specific targets with international commitments	N/A	Common indicators used for SDG and Biodiversity Strategy implementation	Review of CBD strategy and Aichi targets, SDGs and UNFCCC to identify commitments under each	
		14.2 How and to what extent can the strategy be expected to contribute to these commitments?			N/A	Map the EU Biodiversity Strategy Targets to the Aichi Biodiversity Targets and the SDGs, to identify linkages and differences between them.	
		14.3 Does the strategy explain how it will contribute to these commitments?				Analysis of literature and stakeholder views. E.g. The impact assessment accompanying the Strategy (2011) articulates how the Strategy sought to address the identified needs and hence the intervention logic for the strategy targets and actions.	

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
		14.4 Are there any significant gaps or inconsistencies between the strategy and these commitments?			N/A	Identification of potential gaps and inconsistencies, based on comparative analysis of strategy and international commitments, supplemented by literature review and stakeholder interviews.	
EU added value							
15	What is the added value resulting from the EU Biodiversity Strategy compared to what is likely to have been achieved by the Member States in its absence?	15.1 In how far did the adoption of the EU Biodiversity Strategy to 2020 influence the adoption of concrete commitments by Member States?	This EQ will require a Target-by-Target analysis of the influence of the Biodiversity Strategy on the adoption of measures and/or commitments by Member States.	N/A	<p>List of measures implemented by Member States which relate to each target, and are attributable to the Biodiversity Strategy.</p> <p>List of commitments with tangible relevance to the Biodiversity Strategy, for each target.</p>	<p>MS state data on biodiversity measures and commitments undertaken, in relation to each target.</p> <p>Interviews and surveys with MS Competent Authorities to elicit an understanding of measures/commitments undertaken since the adoption of the Biodiversity Strategy, and the perceived influence of the Strategy on the adoption of these measures and commitments.</p> <p>As such, the data will predominantly be derived from the MS case studies throughout this study.</p>	
		15.2 Would the same target set at Member State level have been adopted in case of absence of the EU Biodiversity Strategy?	This EQ will require an analysis of the (probable) targets established by MS in the absence of the Biodiversity Strategy, on a target-by-target basis.		Overview of biodiversity-related targets established, and projected to be established, by MS in the absence of the Biodiversity Strategy.	<p>MS state on biodiversity targets before the implementation of the Biodiversity Strategy.</p> <p>Interviews and surveys with MS Competent Authorities to elicit an understanding of (probable) targets undertaken without the Biodiversity Strategy.</p> <p>As such, the data will predominantly be derived from the MS case studies throughout this study.</p>	

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
		15.3 Is there any evidence for increased ambition in response to the adoption of the EU Biodiversity Strategy?	This EQ will require an comparison of the targets established by MS prior to the implementation of the Biodiversity Strategy, to the targets established by the Biodiversity Strategy itself.		Overview of biodiversity-related targets established by MS prior to the implementation of the Biodiversity Strategy.	<p>Evidence from literature on the increased MS ambition, since the adoption of the Biodiversity Strategy. Evidence of attributability to the Biodiversity Strategy.</p> <p>MS state data on biodiversity measures and commitments undertaken since the adoption of the Biodiversity Strategy.</p> <p>Interviews and surveys with MS Competent Authorities to elicit an understanding of the levels of ambition (primarily related to targets established, the scale of such targets, and their relationship with drivers/pressures) since the adoption of the Biodiversity Strategy.</p>	
		15.4 Is the EU Biodiversity Strategy considered of key importance for the implementation of Member States NBSAPs, i.e. by facilitating the mobilization of financial resources or securing political commitment and public awareness?	The majority of this EQ will relate to the overarching headline target, yet it will be relevant to address at a target/sector level.		Perceived importance of the Biodiversity Strategy in the development and implementation of NBSAPs.	<p>Literature to observe evidence of the Strategy in adding value to NBSAPs.</p> <p>MS case studies (interviews and surveys) to reveal any added value of the Strategy within the NBSAP process.</p>	
		15.5 Would progress in implementation of Member States NBSAPs to date likely be the same in the absence of the EU Biodiversity Strategy? Why or why not?	The majority of this EQ will relate to the overarching headline target, yet it will be relevant to address at a target/sector level.		N/A	MS interviews and surveys to reveal any likely progress of NBSAP progress without the Strategy. Identification of key factors which have improved/ negatively affected the implementation of NBSAP.	

#	Evaluation question	Relevant sub-questions	Relevant Biodiversity Strategy Component	Biodiversity Indicators	Other indicators	Tool used to derive information	Note
		15.6 How adequate and effective is the Biodiversity Strategy in unifying divergent interests across the EU?	This EQ will relate to the Strategy as a whole.		N/A	Literature for commentary and evidence of success or otherwise of this outcome. Stakeholder views from interviews and surveys on the impact of the Strategy in aligning interests. Identification of areas of interest which are not adequately addressed in the Strategy, potentially leading to negative impacts on unifying interests.	
16	How do Member States' targets add up or compare to the targets at EU-level?	16.1 Did all Member States map their biodiversity targets to the EU and the global targets?	This EQ will relate to the targets established in the Strategy individually.		N/A	Stakeholder views from interviews and surveys on the process of mapping their biodiversity targets.	
		16.2 In how far do Member State's targets differ from the EU targets, in particular regarding the level of ambition?	This EQ will relate to the targets established in the Strategy individually.		Level of ambition of MS biodiversity-related targets, compared to EU-level ambitions.	Literature review to compare the levels of ambition between MS targets and the targets of the Strategy.	
		16.3 In how far have the EU targets be used as a guiding framework for the development of (SMART) targets by Member States?	This EQ will relate to the Strategy as a whole.		N/A	MS interviews and surveys to ascertain the impact of the Strategy on providing frameworks for MS-level targets.	
		16.4 What are concrete actions that Member States committed to by 2020?	This EQ will relate to the targets established in the Strategy individually.		Identification of actions that MS are committed to.	Literature review and MS interviews/surveys to identify the actions MS are committed to by 2020.	

Appendix C- Member States Reports

Introduction to the case studies

The case studies presented in this Annex were carried out between November 2020 and March 2021 in ten EU Member States with the aim to inform the evaluation of the EU Biodiversity Strategy to 2020. These case studies provide examples of successes and challenges, and different stakeholder views, in order to draw lessons from practical implementation. They are not assessments of how well any Member State has performed in implementing the Strategy.

The purpose of the studies was to collect (i) evidence about approaches taken in the implementation of the EU Biodiversity Strategy to 2020 in different Member States, (ii) views from national and regional stakeholders on the implementation process and results and (iii) lessons on what worked well, and what didn't, on the factors of success and failure, and the impacts of the Strategy on the ground.

Several criteria were applied to select ten Member States in a way that provides a balanced representation of different implementation contexts, including biogeographic region, date of accession, available evidence on implementation initiatives and relevance of specific targets to the national context. In each Member State, the case study provided (i) a general overview of national implementation efforts and (ii) a more in-depth assessment focused on a small set of targets: 2 to 3 per Member State. The following Member States were selected on this basis: Bulgaria, Finland, Germany, Greece, Italy, Lithuania, the Netherlands, Romania, Slovakia and Spain. Each case study included the following steps:

- **Document review:** official national documents, scientific studies, stakeholder position papers and other publications were examined in order to gain an overview of the national framework and approaches to implementation and monitoring, as well as to identify relevant examples.
- **Online survey:** an online survey was translated into the ten national languages and was open for stakeholder input from September 2020 to January 2021 on the webpage of the contractor. Authorities and stakeholders were actively invited to contribute.
- **Stakeholder interviews:** in each case study Member state, five national or regional authorities or stakeholder organisations were selected and interviewed. The interviews were carried out in the format of a free conversation while the interviewers followed a broadly defined pattern to understand the stakeholder's role and activities in relation to biodiversity, positive experiences, challenges met, and views on their root causes.

1 Spain

1.1 Introduction

1.1.1 Overview of biodiversity state, trends, pressures and drivers

Spain is one of the most biodiverse countries in Europe. It hosts more than 85,000 species, 50% of the animal species in Europe, and more than 5% of the world's species. Of them, a large number are endemic (unique in the world) and many others are endangered species such as the *Lynx pardinus*, *Aphanius iberus*, *Tetraodon cantabricus*, *Quercus ilex* or *Galemys pyrenaicus*. This rich biodiversity is due to Spain's varied climates and habitats, two sets of highly biodiverse islands, and migrating birds and fish. Spain has 15 National parks and 8,000 kilometres of coastline with an extraordinary variety of types of coast (estuaries, marshes, coastal lagoons, extensive cliff coasts of different nature, beaches and island groups of highly variable extension) and a privileged geographical location (between the Atlantic Ocean and the Mediterranean Sea), which determine large variety of flora and fauna and marine biodiversity⁵⁹³.

However, economic growth has put strong pressure in Spain in recent decades. In fact, Spain's ecological deficit had increased about 55% in the previous 15 years⁵⁹⁴. One of the most serious threats for biodiversity is the fragmentation and destruction of habitats, due to activities such as intensive agriculture, overurbanization⁵⁹⁵ or construction of transport infrastructure. The main pressures on Spain's coasts are pollution, illegal fishing, overfishing and global warming. Pollution directly affects species, causing, for example, "dead zones" in the oceans, where pollution by urban, industrial or agricultural waste makes marine life unviable. Overexploitation is behind the disappearance of many species, such as sharks, rays and Mediterranean turtles, due to unsustainable fishing exploitation that does not allow natural regeneration and brings entire populations to the brink of extinction. In addition to these threats, there is climate change, which acts aggravating the previous ones⁵⁹⁶.

Biodiversity conservation experts and environmental associations call for greater measures and for the awareness of the entire society to halt biodiversity loss, otherwise the ability of ecosystems to support future generations could be jeopardised. It is necessary to move towards new business models based on the conservation and sustainable use of biodiversity, essential to safeguard ecosystems and reduce the ecological deficit⁵⁹⁷.

1.1.2 Overview of the national biodiversity policy framework, governance and overall progress towards the EU and global 2020 biodiversity targets

The Strategic Plan on Natural Heritage and Biodiversity (SPNHB) for the period 2011-2017 (Royal Decree 1274/2011) was adopted in 2011⁵⁹⁸. This plan sets 8 overall targets, 39 specific objectives and 281 actions for the conservation and sustainable use of biodiversity. The SPNHB was developed following the lead of the targets set out in the EU Biodiversity Strategy for 2020 (EUBS2020) and the principles and conclusions of the Convention on Biological Diversity (CBD).

The SPNHB covers the period from 2011 to 2017 and defines the following national targets:

⁵⁹³ <https://core.ac.uk/download/pdf/36212639.pdf>

⁵⁹⁴ DG Environment, European Commission (2019), 6th National report to the CBD - Spain.

⁵⁹⁵ The Nature Conservancy (2008), Global Impact Of Urbanization Threatening World's Biodiversity And Natural Resources. <https://www.sciencedaily.com/releases/2008/06/080610182856.htm>

⁵⁹⁶ [La biodiversidad en estado de emergencia](https://www.mapa.gob.es/ministerio/pags/biblioteca/revistas/pdf_AM/AM_2007_65_74_76.pdf)

⁵⁹⁷ https://www.mapa.gob.es/ministerio/pags/biblioteca/revistas/pdf_AM/AM_2007_65_74_76.pdf

⁵⁹⁸ National Strategic Plan for Natural Heritage and Biodiversity 2011-2017 (MITECO, 2011)

- The *National Target 1* (linked to target 1, 2 and 6 of the EUBS2020) consists of three specific objectives focussed on improving the knowledge base on conservation and sustainable use of biodiversity and ecosystem services;
- The *National Target 2* (linked to targets 1, 2 and 4 of the EUBS2020) presents 9 specific objectives focussed on protecting, conserving and restoring Spain's natural capital while reducing the main drivers of biodiversity loss;
- The *National Target 3* (linked to targets 1, 2, 3, 4, 5 of the EUBS2020) is composed of 17 specific objectives and 106 actions focussed on promoting the integration of biodiversity in different sectoral policies, including agricultural policy, forest management, soil management, hydrological management, marine environment, coasts, fishing, environmental assessment, tourism and fight against climate change;
- The *National Target 4* (linked to target 6 of the EUBS2020) focusses on conserving global biodiversity and contributing to poverty alleviation by helping third countries to improve the conservation and sustainable use of their biodiversity. It consists of 16 actions related to the regulation of international wildlife trade, forest management within the framework of international agreements, and the integration of biodiversity in development cooperation projects;
- The *National Target 5* (linked to target 6 of the EUBS2020) is focussed on two specific objectives: promoting land stewardship and improving communication with society regarding biodiversity by enhancing the participation of the public and the private sector in nature conservation while strengthening awareness and commitments;
- The *National Target 6* (transversal to all EUBS2020 targets) consists of three objectives focussed on reinforcing environmental governance for biodiversity conservation and coordinating the implementation of the SPNHB, applying supranational conclusions to state conservation policies and prosecuting environmental crime;
- The *National target 7* (transversal to all EUBS2020 targets) presents three objectives focussed on ecosystem services, green jobs and public procurement contributing to green growth in Spain.;
- The *National target 8* (transversal to all EUBS2020 targets) consists of a single specific objective structured nine actions aimed at mobilizing financial resources towards biodiversity protection.

The national targets, the specific objectives articulating the SPNHB and the correspondence with the EUBS2020 targets are included in the following table. While national target 1 addresses priorities linked to target 1, 2 and 6 of the EUBS2020, national target 3 is linked to target 3 and 4 of the EUBS2020 and national target 4 is related to target 6 of the EUBS2020, the other 5 national targets are transversal to all European targets. Other National legislation/policies related to the SPNHB are also reported.

Table 1-1 Mapping of national targets to the Targets of the EU Biodiversity Strategy to 2020

EU Biodiversity Strategy 2020	ES National targets	Related strategies/action plans/measures
Headline target	National General target: Halt the loss of biodiversity and the degradation of ecosystem services and address their restoration.	The Strategic Plan on Natural Heritage and Biodiversity (SPNHB) 2011-2017 (Royal Decree 1274/2011) is adopted in 2011. Other National legislation/policies related to the SPNHB: <ul style="list-style-type: none"> • Law on Natural Heritage and Biodiversity 42/2007 adopted on 13 December 2007; • Law on evaluation of the effects of certain plans and programs on the environment 9/2006 adopted on 28 April 2006.
Target 1, 2, 6	National target 1. Improve knowledge base on conservation and sustainable use of biodiversity and ecosystem services. (Aichi target 1, 18, 19).	Specific objectives: <ul style="list-style-type: none"> • 1.1. Apply the Spanish Inventory of Natural Heritage and Biodiversity and continue the work on biodiversity inventory and monitoring. • 1.2 Organize, update and disseminate information on the inventory, status and monitoring of natural heritage and biodiversity, considering international and community requirements. • 1.3 Promote that research and innovation in the field of biodiversity meets its conservation, management and sustainable use needs.
Target 1,2,5,6	National target 2. Protect, conserve and restore Spain's natural capital while reducing the main drivers of loss. (Aichi target 5, 9,11,12,14,15,16,19)	Specific objectives: <ul style="list-style-type: none"> • 2.1 Plan and manage networks of protected areas and promote the orderly use of natural resources. • 2.2 Promote ecological restoration, environmental connectivity of the territory, and landscape protection. • 2.3 Contribute to the conservation and restoration of natural habitats and wild species. • 2.4. Establish mechanisms for preventing the introduction, detection, eradication and control of invasive alien species. • 2.5. Protect native fauna species in relation to inland hunting and fishing. • 2.6. Develop technologies and applied experiences of wildlife management for prevention of damages and communicable diseases risk. • 2.7. Regulate access to genetic resources and the distribution of benefits derived from their use. • 2.8. Increase knowledge about geodiversity and geological heritage and increase their protection. • 2.9. Improve cooperation and collaboration between Administrations and national and international organizations related to the conservation of geodiversity and geological heritage.
Target 3,4	National target 3: foster the integration of biodiversity into sectoral policies, particularly about agriculture, fisheries, water management, forestry and tourism, and enhancing synergies with	Specific objectives: <ul style="list-style-type: none"> • 3.1 Improve knowledge, consideration and integration of biodiversity in agricultural practices and policies, in a context of coordination with the Autonomous Communities, intersectoral cooperation, and participation of the sectors involved. • 3.2 Promote sustainable forest management. • 3.3 Contribute to monitor and improve the health status of forests and evaluate their contribution in mitigating and adapting to climate change.

EU Biodiversity Strategy 2020	ES National targets	Related strategies/action plans/measures
	climate changes policies. (Aichi target 2, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 18, 19).	<ul style="list-style-type: none"> 3.4 Contribute to the conservation of biodiversity by defending against forest fires. 3.5 Contribute to the conservation of biodiversity through actions for the protection and conservation of soils. 3.6 Increase the integration of biodiversity in hydrological planning and management. 3.7 Continue the wetlands conservation policy. 3.8 Know the state of conservation of marine biodiversity in Spanish waters. 3.9 Establish monitoring programs for marine biodiversity. 3.10 Establish integrated planning of the marine environment to reduce the impact of human activities on biodiversity. 3.11 Establish Marine Protected Areas and spaces of the Natura 2000 Network in the marine environment and ensure their consistent management. 3.12 Adopt measures for the protection of marine habitats and species. 3.13 Protect and conserve the maritime-terrestrial public domain. 3.14 Achieve a balance between exploitation and conservation of marine natural resources, guaranteeing sustainable catching. 3.15 Effectively apply environmental assessment procedures. 3.16 Promote the sustainability of nature-based tourism. 3.17 Promote coherence and positive synergies between biodiversity conservation and climate change policies.
Target 6	National target 4: conserve global biodiversity and contributing to poverty alleviation. (Aichi target 2, 3, 4, 18, 20)	<p>Specific objectives:</p> <ul style="list-style-type: none"> 4.1 Help third countries to conserve and sustainably use their biodiversity and reduce the impact of Spain's activities on the biodiversity and natural resources of third countries.
Target 1,2,3,4 5,6	National target 5: promote the participation of the people and the private sector in nature conservation while strengthening awareness and commitments (Aichi target 1)	<p>Specific objectives:</p> <ul style="list-style-type: none"> 5.1 Promote land stewardship for the biodiversity conservation; 5.2 Promote public information, awareness and participation for the biodiversity conservation.
Target 1,2,3,4 5,6	National target 6: reinforce environmental governance for biodiversity conservation. (Aichi target 17)	<p>Specific objectives:</p> <ul style="list-style-type: none"> 6.1 Transfer and apply the conclusions of supranational processes on biodiversity, especially the CBD, to the national conservation policy. 6.2 Establish the necessary coordination and governance mechanisms for the implementation of the Strategic Plan for Natural Heritage and Biodiversity. 6.3 Increase the effectiveness of the prosecution of environmental crime.

EU Biodiversity Strategy 2020	ES National targets	Related strategies/action plans/measures
Target 1,2,3,4 5,6	National target 7: Contributing to green growth in Spain. (Aichi target 2, 3, 4)	Specific objectives: <ul style="list-style-type: none"> 7.1 Consider biodiversity and ecosystem services, including their economic value, in public and private activities; 7.2 Promote green employment and the consideration of biodiversity in economic activities; 7.3 Reduce the impact of public procurement and contracting on biodiversity.
Target 1,2,3,4 5,6	National target 8: Mobilizing financial flows from all sources for achieving biodiversity objectives. (Aichi target 2, 3, 20)	Specific objectives: <ul style="list-style-type: none"> 8.1 Ensure adequate financing for biodiversity conservation policies.

1.1.3 Choice of targets to focus the national case studies, and justification

Although information related to all strategy targets will be provided in the following subchapters, special attention will be dedicated to gather information related to Target 1 and 4 for analysing the Spanish case study. It is worth to underline that species and habitats in agriculture have a special relevance in Spain since 50% of the Spanish territory is dedicated to agriculture, so relevant information was also provided for target 3. The choice of those focus targets in Spain is mainly due to the Large Natura 2000 Network encompassing marine and terrestrial species and habitats and to the extensive marine area covering both Mediterranean and Atlantic coasts.

Concerning target 1, Spain, is one of the main contributors to Natura 2000 Network, having 27% of land territory and more than 8% of the marine areas protected within this European network. Moreover, the country has 54% of the terrestrial habitats that are of community interest under the Habitats Directive (HD). While Spain has the greatest biodiversity in Europe, it is also the most vulnerable, with the highest percentage of threatened species. In total, about 350 species of flora and fauna are found in the National Catalogue of Threatened Species.

Concerning target 4 - Spain has the greatest marine biological diversity in Europe: 3 of the 11 large marine ecosystems are represented in the country and the Mediterranean hosts 4% of marine species. Despite this biodiversity treasure, conservation of marine ecosystems and protection of their biodiversity in seas and oceans is decreasing and has started to show signs of their special vulnerability in context of climate change.

The high value of Spanish biodiversity and the existing threats justify selecting target 1 and 4 as focus targets to undertake the analysis of the effectivity of the EUBS2020 in the country.

1.2 Country-specific biodiversity target focus

1.2.1 Effectiveness

Overall progress towards the Biodiversity Strategy

The SPNHB adopted a monitoring system to analyse progress towards achieving specific national targets, defining a system of indicators to use in evaluating the plan itself. For each specific objective, a set of indicators is identified. The Ministry for the Ecological Transition and Demographic Challenge (MITECO), with the collaboration of the autonomous communities, and, where appropriate, other bodies of the General State Administration, annually prepares and publishes a report with values, analyses and interpretation of the results of the system of indicators. These annual reports⁵⁹⁹ have been carried out to measure the country's progress towards the EUBS2020 targets.

Numerous actions and measures have been promoted in different areas of biodiversity conservation and ecosystem services; however, most of the SPNHB objectives have not been met and the plan has not been updated since its completion in 2017⁶⁰⁰. Lack of financial and human resources, discontinuity of projects addressing causes of biodiversity decline and lack of well-established lines and long-term objectives limited the full achievement of the targets. According to NGOs, the tendency is to evaluate the approval of plans and strategies, but not the fulfilment of the objectives. Monitoring activities are indeed limited. Furthermore, the indicators used to check the national progress towards the objectives of the EUBS2020 have not been adequately defined for all targets. For example, there is no data on degraded surface and restored surface to evaluate targets 1, 2 and 4. A system of biodiversity indicators is currently under development on a national scale but has not yet made public. So, there is no public data and information, or it is insufficient, to understand national progress in favour of biodiversity preservation. For instance, data is still missing for many species, habitats and threats.

Throughout consultations, NGOs, regional authorities and agriculture, fishing and forest associations stated that the SPNHB did not incorporate sufficient stakeholder participation. National target 6, which focussed on coordinating the implementation of the SPNHB, has only been partially achieved. The SPNHB is the most obvious direct result of transferring the conclusions from supranational processes such as the Convention on Biological Diversity (CBD) to national conservation policies. Significant progress in the application of the Plan has been made but the effectiveness of the units and administrations involved needs improvement.

Key success/failure stories on the implementation of the Biodiversity Strategy in MS

Target 1

Significant progress has been made in the preparation and use of the Spanish Inventory of Natural Heritage and Biodiversity (SINHB). However, important/significant differences are observed in the development of the different components of the SINHB. For example, while the List of Wild Species under Special Protection Regime and the Spanish Catalogue of Threatened Species have been widely developed, the Spanish Catalogue of Habitats in Danger of Disappearance has not yet been implemented by regulation. The forestry components of the SINHB are generally well developed. Important results have been achieved in the development of inventories such as the standard lists of

⁵⁹⁹ https://www.miteco.gob.es/es/biodiversidad/temas/inventarios-nacionales/inventario-espanol-patrimonio-natural-biodiv/informe_anual_IENPB.aspx

⁶⁰⁰ The Environmental Implementation Review - Factsheet for Spain (DG Environment, European Commission, 2019)

terrestrial and marine species of the Spanish territory, the atlases and red books of different groups of animals and plants, while others such as the landscape inventory are in their first stages of elaboration. The general indicator on the state of knowledge of the SINHB is 55%, raising this figure to 61% if referring exclusively to the priority components⁶⁰¹. Advances in the application of the two directives (HD and SD), especially in the designation of protected areas and in the protection of species, have been made. However, there remain many aspects which have not yet been adequately developed: for example, most sites still lack conservation objectives and measures, and many plans and projects have been approved despite their adverse impacts on the Natura 2000 Network.

Target 2

Significant strides in the implementation, conservation and management of protected areas can be attributed to the progresses in the Natura 2000 Network. For example, 67% of Birds Special Protection Areas (BSPAs) have an ongoing management plan, and 75% of the Sites of Community Importance (SCIs) have been designed as Special Areas of Conservation (SACs) which cover 27.3% of the Spanish terrestrial surface (almost completing the terrestrial Natura 2000 Network). Additionally, trends in protected areas have shown positive progress in drawing up management plans for Natura 2000 sites. In April 2018, 77% of the Natura 2000 sites had been designated as special conservation areas had corresponding management plans. The standard lists of terrestrial species, marine species and terrestrial habitats present in Spain were approved in February 2017. Information on the status of conservation, population and distribution of Spanish biodiversity and required monitoring actions, were provided with a satisfactory coverage and in accordance with the established deadlines by the Bird Directives (BD) (article 12) and Habitats (article 17). However, a percentage of habitats and species still do not have information of sufficient quality.

Target 3

The foreseen actions focussed on integrating biodiversity conservation principles in agricultural and forest management have been implemented, but only partially. Both the Spanish Strategic Plan for the Conservation and Rational Use of Wetlands, such as the Spanish Inventory of Wetlands (specific action within the plan), have been approved since 1999, but no significant progress has been observed. The execution of the actions carried out to monitor the health status of forests within this target can be considered satisfactory, although there is room for improvement in terms of mitigation and adaptation to climate change. Concerning the conservation of biodiversity through soil protection and conservation, only inventoried and proposed actions have been elaborated. Overall, in forestry, the results achieved have been better than in agriculture.

Target 4

This target is partially addressed by the actions foreseen by the national target 3, focussed on marine environment and fishing. The Spanish Inventory of Marine Species and Habitats has been launched and an assessment of the state of marine environment in relation to biodiversity has been completed. Marine Natura 2000 Network has been improved with the designation of 10 SCIs and 39 BSPAs in the marine field. This corresponded to an increase of 8% in marine protected area included in the Spanish Natura 2000 Network between 2012 and 2017. The LIFE Programme (LIFE+ project INDEMARES and LIFE integrated project INTEMARES) has been used to designate a consolidated network of marine Natura 2000 sites. However, there are many aspects which have not yet been adequately addressed:

⁶⁰¹ Follow up Report of the Strategic Plan for Natural Heritage and Biodiversity (MITECO, 2017)

Mediterranean commercial stocks continue to be overexploited, unsustainable fishing activities continue impact some protected species and habitats, and negative impacts caused from anthropic activities (urban development, marine litter, transport activities, etc.) still alter marine habitats.

Target 5

Some progress and actions to control Invasive Alien Species (IAS) have been carried out and a system to detect invasive alien species has been implemented at national level and at the Autonomous Communities level. However, this target has not been met. Even though the new IAS Regulation for EU was enacted in January of 2015, by the end of 2020, this regulation has only been implemented to a small amount of the IAS listed (6% of the total of IAS present in EU). This means that 94% of IAS present in the EU are not being managed. Some of the priority species are far from being controlled or eradicated because some of them are not even included on the IAS list (e.g., the American mink). Additionally, commercial use of some invasive species is still allowed, and prevention, detection, eradication, and control strategies have not been completed.

Target 6

Progress towards this target (addressed mainly from national target 4) has been made, but at an insufficient scale. In the field of international trade in wild fauna and flora, the application of the CITES convention makes an important contribution towards the target. Also, Royal Decree 1088/2015 aimed at ensuring legal wood and wood products marketing is an important step in forest management and to establish the necessary provisions for the implementation of the FLEGT and EUTR regulations. However, there are some shortcomings in terms of promoting and guaranteeing the integration of biodiversity conservation in International Cooperation programs, largely due to insufficient funds.

Evidence of successful implementation of focus targets

Target 1

The List of Wild Species under a Special Protection Regime is established through the Law on Natural Heritage and Biodiversity 42/2007 and developed by Royal Decree 139/2011;

The standard lists of terrestrial species, the marine species, and terrestrial habitats present in Spain were approved in February 2017⁶⁰²;

Some relevant actions have been promoted in national parks regarding the monitoring of the effects of climate change on biodiversity, such as the Global Change Monitoring project in the National Parks Network (2019)⁶⁰³ and the CENTINELA project (2016)⁶⁰⁴;

Monitoring of the 325 species included in the List of Wild Species in Special Protection Regime and in the Spanish Catalogue of Threatened Species;

The priority components of SINHB have been developed, the SINHB is being maintained and updated and the System of Indicators for the SINHB has been identified and documented in the annual reports⁶⁰⁵. The final version of the indicators still ongoing and will be prepared with the participation of the autonomous communities and will be approved, following a report from

⁶⁰² The Environmental Implementation Review - Country Report Spain (DG Environment, European Commission, 2019)

⁶⁰³ https://www.miteco.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/rscg-boletin-07-ingles_tcm30-512182.pdf

⁶⁰⁴ <http://centinela.ihcantabria.es/>

⁶⁰⁵ The Environmental Implementation Review - Country Report Spain (DG Environment, European Commission, 2019)

the State Council for Natural Heritage and Biodiversity and from the Sectorial Conference on the Environment⁶⁰⁶;

Collaboration of SEPRONA⁶⁰⁷ (Nature Protection Service of the Civil Guard) with the agents of the authority of the Autonomous Communities in prosecuting illegal practices related to threatened Species;

The report on the application of the HD in Spain in the period 2013-2018 was published in 2018. The Priority Actions Framework (PAF) of the Natura 2000 Network for the 2014-2020 funding period has been implemented. Five strategic conservation priorities and 193 concrete actions have been designated for this network;

The report "Innovative financing mechanisms, system for the application of mechanisms, and methodology to implement a system of Payments for Environmental Services in the Natura 2000 Network"⁶⁰⁸ was published in 2015;

A specific study on habitat banks⁶⁰⁹ as tools for the conservation of biodiversity and with the purpose of encouraging private investment to improve Natura 2000 Network has been carried out in 2014;

Between 2013 and 2016⁶¹⁰, the total protected land area increased by about 10%, while the sea surface area multiplied by 8 and a multitude of management plans for protected areas have been elaborated;

The conservation status of some species and habitats has improved significantly thanks to the Habitat and Species Directives and to the financial support of programs such as LIFE. For emblematic species in danger of extinction such as large mammals (e.g. the Lynx pardinus and the Cantabrian brown bear), the positive trends of their conservation status are confirmed by the latest censuses of these species (Survey inputs from NGOs);

In the Balearic Islands, thanks to the development and implementation of management plans for the sites of the Natura 2000 Network, the pressures and threats of the habitats and protected species, as well as the indicators for monitoring their conservation status were highlighted. The work has begun by characterizing the current situation, which will allow evaluating future achievements. Among the regional progresses there was the increase of the surface of protected areas in the last decade (Survey inputs from a regional authority);

In Catalonia, there is a good knowledge of the actions that are being carried out in favour of the conservation of habitats and species. There are many habitats and species that are benefiting, directly or indirectly, of different conservation measures, although there are some exceptions as with the taxonomic group of non-vascular plants, for which only conservation measures have been collected for two of the eight species. The effort to gather and update information on actions and projects carried out in Catalonia is valuable. It makes it possible to have a regional "Register" of management actions (active and preventive) that includes current actors, but also other relevant actors who have not yet participated (entities of the 3rd environmental sector, consultancies, etc.) (Interview with a regional Forest association).

⁶⁰⁶ <https://www.miteco.gob.es/en/biodiversidad/temas/inventarios-nacionales/inventario-espanol-patrimonio-natural-biodiv/sistema-indicadores/default.aspx>

⁶⁰⁷ <https://www.miteco.gob.es/es/actuaciones-seprona/el-seprona/>

⁶⁰⁸ <https://ent.cat/publicacio-dun-informe-sobre-mecanismes-de-financament-innovadors-per-a-la-xarxa-natura-2000/?lang=en>

⁶⁰⁹ https://www.prioridadrednatura2000.es/sites/default/files/lifemap_bancos_de_conservacion.pdf

⁶¹⁰ <http://atlasnacional.ign.es>

Target 2

Some habitats that were in danger have been restored. A national strategy has been developed to significantly increase the restoration objectives (Interview with NGOs);

In Catalonia, the Government of the Generalitat approved in 2018 the Strategy for the Natural Heritage and Biodiversity of Catalonia⁶¹¹, the strategic planning document that defines the roadmap for nature conservation policies in Catalonia until 2030. The Strategy is an essential guide for implementing in Catalonia the provisions of the United Nations Convention on Biological Diversity of 1992, the SPNHB and the EUBS2020.

Target 3

At national level a strategy for supporting ecological production⁶¹² was published in 2014 to foster agriculture and livestock techniques that excludes, in general, the use of synthetic chemical products, with the aim of preserving the environment, maintain or increase soil fertility and provide quality food;

In some regions Plans for Ecological Production have been developed, encouraging studies and innovation on the use alternative techniques of conservative natural biological control of pheromones, agro-composting "in situ" or Conservation Plan of Agricultural Biodiversity (Survey inputs from an agroecology association);

The National Forest Inventory and the Forest Map in several Autonomous Communities have been developed⁶¹³;

The health status of the forests achieved better results (especially for high mountain species) than agriculture maybe due to more resources and awareness (Interview with a regional Forest association);

In Catalonia, the planning of sustainable forest management in the public and private forest area continues its slow but constant and progressive growth⁶¹⁴. There was an increase in the area adhering to internationally recognized forest certification systems⁶¹⁵. Conversely, there are no known and agreed indicators and thresholds to assess the improvement of biodiversity and the impact of forest management on the recovery of degraded areas (Survey inputs from a regional Forest association);

In Valencia Region, government and associations collaborated in a project focussed on recovering local agricultural species or traditional varieties and rustic livestock breeds (Red de Semillas, Valencian Catalogue of local or traditional agricultural varieties) (Survey inputs from an agroecology association).

Target 4

The LIFE Programme (LIFE+ project INDEMARES and LIFE integrated project INTEMARES) has been used to designate a consolidated marine Natura 2000 Network;

The protected area in the marine environment has increased from 1% to 8% (Interview with NGOs);

⁶¹¹ http://mediambient.gencat.cat/ca/05_ambits_dactuacio/patrimoni_natural/estrategia-catalana-del-patrimoni-natural-i-la-biodiversitat/

⁶¹² https://www.mapa.gob.es/es/alimentacion/planes-y-estrategias/Estrategia%20Apoyo%20Produccion%20Ecol%C3%B3gica_tcm30-79287.pdf

⁶¹³ DG Environment, European Commission (2019), 6th National report to the CBD - Spain

⁶¹⁴ <http://www.observatoriforestal.cat/propietat-i-planificacio/>

⁶¹⁵ <http://www.observatoriforestal.cat/superficie-forestal-certificada-pefc/>

The Spanish Inventory of Marine Species and Habitats⁶¹⁶ was launched by a Resolution on March 22, 2013, of the General Directorate of Sustainability of the Coast and the Sea;

The assessment of the state of the marine environment in relation to biodiversity descriptor, in accordance with the marine strategies of the Law 41/2010 has been completed;

Environmental objectives of the second cycle for the Spanish Marine strategies have been published in 2019;

Many of the fish stocks have been improved and the sector is becoming much more involved in biodiversity conservation efforts. Some management plans have been implemented and it has been considered to involve fishermen as frontline users (Interview with NGOs);

Data on seabed with Posidonia meadow, dune habitats and cave habitats not exploited by tourism are not available to understand national progress towards the objectives (Survey inputs from a regional authority).

Target 5

An invasive alien species detection system has been implemented at national level, in compliance with Royal Decree 630/2013, in addition to the systems developed by the Autonomous Communities in their territorial areas;

Different actions to control invasive species, such as Ruddy Ducks (since 1998), zebra mussels (in the River Ebro since 2001), Floridian turtles (Valencia, Rioja) and Argentinean parrots (Madrid, Catalonia) have been carried out.

Target 6

Spain has made progress in considering and addressing the role of the country in the commerce of species and progress has been made regarding the approval and implementation of a Plan to combat illegal traffic of species. In relation to this, the EU CITES convention on international trade of wild fauna and flora was applied in Spain with Regulations (EC) 338/97 and 865/2006;

Recently, there has been a change in the competences of the CITES administrative authority that see a stronger role for NGOs. These advances in planning and organizational changes have not yet been reflected in the objective of reducing the loss of global biodiversity, but it is expected that they will be reflected in the future if they are going to be accompanied by a reinforcement of human and economic resources for the fight against illegal traffic (Interview with NGOs);

The legislation for marketing forest biodiversity was adopted with the publication of Royal Decree 1088/2015 ensuring the legality of the marketing of wood and wood products (implementation of the FLEGT and EUTR regulations);

The Spanish Strategy for the Conservation and Sustainable Use of Forest Genetic Resources has been adopted;

Creation and operation of the online Land Stewardship Platform and publication of the fifth inventory of entities and land stewardship agreements in 2017;

Concerning fostering coordination mechanisms, the Spanish Company and Biodiversity Initiative was developed to involve the private business sector in the implementation of the objectives of CBD⁶¹⁷.

⁶¹⁶ <https://www.miteco.gob.es/fr/biodiversidad/temas/biodiversidad-marina/habitats-especies-marinos/inventario-espanol-habitats-especies-marinos/inventario-habitats-especies.aspx>

⁶¹⁷ DG Environment, European Commission (2019), 6th National report to the CBD - Spain

Evidence of unsuccessful implementation of focus targets

Target 1

According to NGOs, the overall balance is very negative, since only few of the defined specific objectives has been achieved at national level. According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)⁶¹⁸ and report "State of Nature of EU"⁶¹⁹, the state of conservation of species and habitats in Spain is even worse than the previous evaluations⁶²⁰. NGOs stated that there are clear examples of non-compliance, especially because the SPNHB is not sufficiently monitored. The evidence is even more alarming for species linked to the aquatic environment, for which the worsening of their conservation status has been drastic (Interview with NGOs);

Most of the habitats and species remain in an unknown or unfavourable state of conservation. Management plans for protected areas are not of sufficient quality and in most cases, they have not been developed using participatory processes (NGOs);

The Natura 2000 Network Spaces Management Guidelines are excessively general and have not been drawn up from discussion and consensus with relevant stakeholders at the regional policy level (Interview with a regional forest association);

There is a significant decline in bird populations in agricultural environments, because of the application of the CAP. Although 27% of the surface area in Spain is included in the Natura 2000 Network and thousands of family farms and ranches used sustainable management practices in these areas progress, progress in this target has not been significant (Survey inputs from a regional authority);

In the Balearic Islands, the status of conservation of the marine species such as Posidonia, and the coastal ecosystems, also associated with highly vulnerable protected species areas is especially negative. Tourist and recreational activity, as well as coastal urbanization, has continued its intense growth and regulatory protection measures have not been sufficient, so far, to alleviate these pressures (Survey inputs from a regional authority);

In Catalonia, the objectives defined by HD and BD have not been achieved. Indeed, in the period 2013-2018 most of the regional Habitats of community interest (59%) are in an unfavourable state of conservation, 22% are in a favourable state of conservation and 19% in an unknown state. Most of the species in the HD are in a bad unfavourable state of conservation and there are many species for which not enough knowledge is available to assess their conservation status. Current knowledge about pressures and threats is not enough. It is necessary to improve the knowledge of the pressures that can affect habitats and species in Catalonia (only 57% are known for habitats, 68% for species included in the HB and 66% for species in the BD)⁶²¹.

Target 2

Despite the improvements of conservation status for some species, progress in relation to this objective has been not significant and national biodiversity loss continues to affect the territory (Survey inputs from NGOs);

⁶¹⁸ https://www.miteco.gob.es/es/biodiversidad/temas/conservacion-de-la-biodiversidad/conservacion-de-la-biodiversidad-en-el-mundo/cb_mundo_plataforma_ipbes.aspx

⁶¹⁹ https://ec.europa.eu/environment/system/files/2020-10/the_state_of_nature_brochure.pdf

⁶²⁰ [Global trends in biodiversity and ecosystem services from 1900 to 2050](#)

⁶²¹ [Informes de aplicación de la Directiva Aves \(art. 12\) y la Directiva Hábitats El estado de la naturaleza en Cataluña \(2013-2018\)](#)

There is no evidence on compliance with the restoration of 15% of degraded spaces since the baseline of degraded ecosystems to be restored was not defined, nor the restored ecosystems have been counted. Despite specific restoration projects have been carried out at national level, no coordinated work has been done to achieve this goal in a planned way at the national level (Survey inputs from NGOs)

Regarding the improvement and establishment of green infrastructures, during the period 2010-2020 almost no work was done in this regard, except occasionally in some Autonomous Communities with actions to promote eco-logical connectivity. At country level, maps of current green infrastructure network and future restoration network still need to be developed to be able to reconcile land uses and restored areas where necessary (Survey inputs from a regional forest association);

In Catalonia, information on the design and implementation of green infrastructure (if it exists) is not available to the public. The division of competences between conservation and sustainable use of natural spaces demonstrates the lack of coordination at the administrative level. Relevant documents and plans (biological connector plan, partial plans) are not discussed with the sectors involved (Interview with a regional forest association).

Target 3

Data on the relationship between wild species and agriculture invasive species in agricultural areas is not available (Survey inputs from a farmer and ranchers association);

Intensive agricultural activity, one of the main causes of biodiversity loss, has not undergone an adequate transformation towards maintaining biodiversity. The main threat to species loss in Spain continues to be the unsustainable farming practices⁶²²;

New guidelines/ Natura 2000 Network management plans did not analyse sufficiently the consequences of the abandonment of large agricultural and forest areas (20% of total surface area) such as the risk of wildfires and natural disasters (Survey inputs from a regional forest association);

Guidelines for habitats and species improvement often contradict traditional practices and sustainable forest management guidelines. There are serious deficits in the preparation and processing of the management plans for the Natura 2000 spaces (Interview with a regional forest association).

Target 4

There are still overexploited commercial stocks, especially in the Mediterranean. Fishing continues to have a significant impact on some protected species, such as the porpoise (Interview with NGOs);

Impact on marine biodiversity caused by third-country fleets and boats below 12 meters are not accounted. This hinders achieving this target (Interview with an association of fishing enterprises);

According to fishing associations this target did not progress sufficiently also because limited actions have been taken to reduce the impacts from sectors other than fishing (tourism, transport, extractive activities) (Interview with an association of fishing enterprises).

⁶²² https://ec.europa.eu/environment/system/files/2020-10/the_state_of_nature_brochure.pdf

Target 5

Despite having a catalogue of invasive species and a national decree regulating them, the commercial use of some invasive species is allowed, and the control and prevention strategies needed for all of them have not been developed (Survey inputs from NGOs);

The impact of IAS Regulation has been quite limited so far, meaning that when there has been a conflict of interests, protecting the economy has been in the first place, rather than protecting biodiversity (even ignoring the scientific criteria of the Scientific Forum) (Survey inputs from NGOs).

Target 6

The promotion and guarantee of the integration of biodiversity conservation in International Cooperation programs is limited mainly due to financing shortages.

Unexpected or unintended consequences of implementing focus targets

Target 1

Rejection response by local actors for species reintroduction. In the Balearic Islands, the successful reintroduction of endangered species such as *Alytes muletensis* (ferreret) in the Serra de Llevant Natural Park or the recovery of the presence and behaviour of nesters of different species of raptors in the Mondragó Natural Park created a rejection response by some sectors of society that interpret the regulations and protection objectives as a threat to their activities. Similar social conflicts emerged because of the reintroduction of brown bear in specific areas (Survey inputs from a regional authority). This negative consequence is also due to the lack of clear information about convivence with emblematic species (Interview with NGOs).

Target 3

The role of farmers and ranchers in preserving biodiversity is undervalued (Survey inputs from a farmers and ranchers association);

Green roofs or other types of green infrastructures were not implemented since, according to the CAP - the simple fact of growing perennial trees was considered as green activity;

Increase in obstacles and difficulties for the implementation of sustainable forest management practices;

The implementation of Natura 2000 has not led to an increase in the budget dedicated to the management and improvement of natural resources. For example, funds allocated to sustainable forest management were reduced (Interview with a regional forest association);

Increase in complexity and costs both for administrators and managers. The sustainable management plans introduced limitations, did not compensate restrictions, and ultimately increased the administrative process (environmental impact assessment of activities that supposedly have a positive impact on the Natura2000 Network, etc.)

Target 4

Fishermen were not sufficiently involved in defining actions to preserve marine environment (Interview with an association of fishing enterprises);

The positive value of Fishermen's Cooperatives to work with local government is underestimated and even they were often targeted as responsible for marine biodiversity loss (Interview with an association of fishing enterprises);

The positive role of fishermen in collecting garbage from the sea is only partially recognized and lack of facilities located in ports to collect waste rescued by fishermen complicates this activity (Interview with an association of fishing enterprises).

Key factors which have contributed to achieving objectives

Target 1

Political will, administrative cooperation of the MITECO and the Autonomous Communities, budgetary investment and the existence of a common strategy contributed to the achievements obtained so far to improve terrestrial and marine habitats and species conservation status (Interview with NGOs);

The development of the Spanish Company and Biodiversity Initiative improved the involvement of private business sector in the implementation of the objectives of CBD⁶²³.

Key factors which have hindered the achievement of objectives

Evidence related to all targets

Dissemination of EUBS2020 not sufficient. Although the SPNHB includes a target (national target 5) focussed on promoting land stewardship and improving communication with society regarding biodiversity, it has not been fully met to date, thereby hindering the efficient dissemination of the SPNHB itself. Even though the online Land Stewardship Platform was created and it functions to foster dissemination and advice private and public entities, the promotion of communication mechanisms, such as through social networks, was not sufficient to achieve a wider dissemination of biodiversity conservation awareness;

Separation of competences between conservation and sustainable use of natural spaces hinders efficient coordination at the administrative level. It is needed to improve coordination mechanisms among implicated actors and the effectiveness of the units and administrations involved;

Policies, guidelines, and strategies require a multidisciplinary approach that is often missing as it is lacking an overall vision and the will to dialogue and work together with experts in fields such as aquaculture, agriculture, forestry management, livestock, etc.

Target 1

Lack of financial and personal resources has made it difficult to apply monitoring, evaluation, and conservation measures to protect species and habitats (Survey inputs from regional authorities);

Limited dissemination of information on the status of habitats and species in the regions and related conservation measures does not contribute to the development and implementation of management plans in Natura 2000 areas;

Limited integration of administrative departments responsible for the protection of species and habitats with the ones dealing with the sustainable use of natural resources. (Interview with a regional forest association);

In Catalonia region, lack of available information on the impact of climate change and its implications hindered the improvement of the conservation status of species and habitats (Interview with a regional forest association).

⁶²³ DG Environment, European Commission (2019), 6th National report to the CBD - Spain

Target 3

Agricultural practices with high impact on biodiversity (transformation to irrigation, intensification, use of pesticides, transformation of land uses, degradation of riversides, overexploitation of water resources, monocultures, forestry extractive activities, etc.) continue to be promoted through European and national funds;

The Natura 2000 Network management plans include limited measures that make agricultural activity compatible with the conservation of biodiversity in these areas (Survey inputs from a farmers and ranchers association);

Agricultural policies and insufficient collaboration among the actors have hindered the achievement of the target (Interview with NGOs);

Lack of communication and participation towards farmers. Little public support for incentives that value public services offered by farmers in favour of biodiversity (Survey inputs from a farmers and ranchers association);

Lack of funds for practices that conserve and improve biodiversity such as agroecological practices and sustainable hydrological-forestry management. For instance, organic production is not supported, apart from the minimum aid established in the CAP, and the agroecological management of agroecosystems and the territorialization and improvement of food systems are not favoured. Nor adequate measures have been established for the conservation of forest areas, such as fire prevention, protection against erosion, etc. Financial resources for researching these techniques and studies are limited (Survey inputs from an agroecology association).

Target 4

Insufficient involvement of fishing operators. Fishermen associations stated that they have not been sufficiently involved in the definition of the actions for preserving marine biodiversity. Although the relevance of the biodiversity management plans is recognized, fishermen consider measures to halt marine biodiversity as an imposition and a strong limitation for their annual incomes. The representation of the fishermen within the MEDAC⁶²⁴ decreased from 66% to 50%. The lower ratio of fishermen presence also reduced their perspectives in favour of other groups (Interview with an association of fishing enterprises);

Selectivity of the rules introduced to limit overfishing. A fishing sector association stated that non-European fleets operating in other seas, or even worse when operating in common seas, are not subject to the same rules. Moreover, rules are only applied to boats above 12 meters (Interview with an association of fishing enterprises);

Plans to reduce fishing activity are considered too short term. Stringent rules and lacking policies and mechanisms (social and economic measures) to support good practices create a negative economic impact on fishing businesses. This situation together with the lack of long-term guidelines for fishing reduction makes it difficult to achieve the target (Interview with an association of fishing enterprises);

Limited interventions and measures to reduce impact on marine environments linked to uncontrolled urbanization, commercial traffic, illicit effluents, water pollution (including the marine litter) have been carried out (Interview with an association of fishing enterprises).

⁶²⁴ <http://en.med-ac.eu/>

1.2.2 Efficiency

Key evidence on the cost efficiency of the Biodiversity Strategy as a whole

In the period from 2008 to 2017, the MITECO, through Fundación Biodiversidad, financed 90 projects on land stewardship for 4 M€. In the period 2009-2012⁶²⁵, the Ministry of Agriculture, Food and Environment promoted actions in the Natura 2000 Network in several autonomous communities, for a total amount of about 55 M€ under the European Regional Development Fund (ERDF)⁶²⁶;

In 2007 the management cost for the Natura 2000 Network in Spain was 943.7 M€ (68.81 €/ha). The annual costs range between 944 M€ (in 2007) and two annual estimations for short term desirable scenarios 1,557 M€ (114 €/ha) and 2,602 M€ (196.37 €/ha) if the expansion of protected areas and of the marine protected areas is considered. The benefits of the Natura 2000 Network are much higher than the costs⁶²⁷;

A first approximation indicates that the economic benefits of the Natura 2000 Network for Spanish society as whole amount to 43,661 M€ per year⁶²⁸;

Although the SPNHB includes a target dedicated to mobilization of financial resources towards biodiversity protection (national target 8), progress towards this national target has only been achieved at an insufficient rate. This means that national and sub-national biodiversity strategies have not been adequately funded. Even though the PAF of the Natura 2000 Network for the 2014-2020 funding period has been implemented, an evaluation on its effective application has not yet been carried out;

Studies on how to analyse market instruments that can be used to improve financing for biodiversity conservation have been carried out⁶²⁹. However, a working group to study fiscal mechanisms that specifically foster the conservation of biodiversity, as established in the SPNHB, has not been established yet;

However, the application of the Fund for Natural Heritage and Biodiversity was among the actions foreseen in the SPNHB, this fund is not yet in place⁶³⁰;

The project "Institutional approach for the promotion of land stewardship in the scope of the General State Administration (AGE - Administración General del Estado)" with the support of the Biodiversity Foundation of the Ministry of Agriculture and Fisheries, Food and Environment was developed in 2017⁶³¹. This project has shown a growing interest in finding common and innovative formulas to conserve natural heritage through public-private collaboration. It is expected that its results will have an impact on autonomous communities, contributing to build an adequate legal-administrative framework fostering land stewardship;

The State Fund for Natural Heritage and Biodiversity lacks a budget and the CCAA have significantly reduced their budget dedicated to biodiversity (Interview with NGOs);

Insufficient incentives or aids have been granted to farmers and ranchers who exercise sustainable management in protected natural areas (Survey inputs from a farmers and ranchers association).

⁶²⁵ Follow up Report of the Strategic Plan for Natural Heritage and Biodiversity (MITECO, 2013)

⁶²⁶ DG Environment, European Commission (2019), 6th National report to the CBD - Spain

⁶²⁷ Analysis of costs for the preservation of the Natura 2000 Network in Spain (MITECO, 2013)

⁶²⁸ Economic benefits of the Natura 2000 Network in Spain (MITECO, 2019)

⁶²⁹ <https://prioridadrednatura2000.es/sites/default/files/instrumentos-innovadores.pdf>

⁶³⁰ DG Environment, European Commission (2019), 6th National report to the CBD - Spain

⁶³¹ <https://www.miteco.gob.es/es/ceneam/grupos-de-trabajo-y-seminarios/custodia-territorio-en-politicas-publicas-de-age/custodia-territorio1.aspx>

Key evidence of benefits

The study Spanish National Ecosystem Assessment published in 2014⁶³² was the first attempt at the national level to understand the complex interactions between nature and society and wider benefits resulting from the implementation of conservation policies. The study underlined the need of introducing a significant change in perspective in Spanish conservation policies, linking the conservation of ecosystems with different components of human wellbeing. However, this natural capital prospective has been implemented only partially in developing national projects, strategies and plans.

NGOs and Regional authorities stated that the implementation of projects aimed at the conservation of biodiversity for terrestrial and marine habitats contributed to developing sustainable tourism and impacts positively in creating job opportunities.

Target 1

- The Balearic Islands is a good example of area where the implementation of biodiversity conservation measures on habitats and species resulted in wider socio-economic benefits. Indeed, this region has become a suitable area for naturalistic tourism and a setting for productions and filming related to the landscape and the environment (Survey inputs from a regional authority).

Target 3

Among the direct economic benefits⁶³³ there are: 1) financial contribution for providing different nutrients and OM (humus), with legumes, grasses, crucifers, etc. This value varies between €/150-300 ha compared to humus coming from manure, compost, etc.); 2) control of adventitious grasses (reduction of the cost for controlling grasses); 3) decrease of costs for controlling pests⁶³⁴ or diseases (thanks to the introduction of auxiliary fauna)⁶³⁵;

Sustainable forest management has become widespread. More than 70% of the wood and 95% of the cork put on the market comes from sustainable forest farms (Survey inputs from a regional forest association);

Different initiatives have been carried out to integrate best conservation practices into forest planning and management instruments, and through new financing and compensation mechanisms such as the LIFE Biorgest project⁶³⁶.

Target 4

“Pesca Neta”⁶³⁷ project demonstrated the benefits in fighting marine litter by removing waste plastics from the sea by fishermen (Interview with an association of fishing enterprises);

The first protocol drawn up in Catalonia to remove fishing nets and gear presented in 2018 incentivises development of initiatives to combat the environmental consequences of the loss of fishing tools in marine habitats;

⁶³² https://www.miteco.gob.es/es/biodiversidad/temas/conservacion-de-la-biodiversidad/ecosystems_human_well_being_tcm30-196684.pdf

⁶³³ EEA Estación Experimental Agraria de Carcaixent and the IVIA Institut Valencià de Investigacions Agràries

⁶³⁴ Sorribas, J., González-Cavero, S., Domínguez-Gento, A. & Vercher, R. 2016. Abundance, movements and biodiversity of flying predatory insects in crop and non-crop agroecosystems. *Agronomy for Sustainable Development*. 26-34.

⁶³⁵ González, S., Vercher, R., Domínguez Gento, A., and Mañó, P.; 2008; Biodiversity and distribution of beneficial arthropods within hedgerows of organic Citrus orchards in Valencia (Spain); Control in Citrus Fruit Crops, IOBC/wprs Bulletin Vol. 38, 2008, pp. 275-279

⁶³⁶ <http://lifebiorgest.eu/>

⁶³⁷ <https://pescaneta.com/>

In Catalonia region, the project «Avoid ghost fishing» has recovered since 2009 a total of 150 fishing gear abandoned on the Catalan coast with the crucial collaboration of fishermen, managers, NGOs and scientists. During 2020 the project also had the support of the Biodiversity Foundation of the MITECO and the Ministry of Agriculture and Fisheries, Food and Environment, through the PLEAMAR programme of the European Fund for Maritime Affairs and Fisheries. Such initiatives provide concrete benefits to the marine environment avoiding the passive capture of organisms that die from entanglement in fishing gear, the erosion of the ocean floor, the drawing of biological communities and the introduction of pollutants into the environment that can also be vectors of invasive species. Besides detecting abandoned fishing gear creating these initiatives involve fishermen itself in removing them and contribute to maximize citizens' awareness about serious environmental problem affecting marine biodiversity.

Key evidence of costs

The actions specified in national target 8 of the SPNHB are not budgeted, nor the strategy is accompanied by a specific budget for its compliance, so it is complex to define the costs. The budget going to the MITECO is known, but it is unknown to what it is destined. Reports including information on costs for implementing specific biodiversity conservation measures are limited or not publicly available (Interview with NGOs). The lack of these data makes it difficult to analyse the efficiency of the strategy itself. However, where data are available, the balance benefits/cost is positive. Low financial resources allocated to improve biodiversity will imply relevant social and environmental benefits (Survey inputs from NGOs).

Target 1

It is difficult to provide concrete examples of the costs implementing specific actions to achieve this target since segregate data about the costs are not available. Many investments have been made by Public Administrations, but there are no statistics or detailed data;

As an example, the list of priorities and related economic evaluation concerning the management plan of the Natura 2000 Network in Formentera (Balearic Islands) accounts for € 1,491,500⁶³⁸, with the following breakdown of costs:

Increase the level of knowledge for the effective improvement of the state of conservation of the types of habitats and Natura 2000 species, favouring lines of research that allow more detailed analysis: € 402,000;

Encourage the recovery towards a favourable conservation status for the types of habitats and Natura 2000 species that require it, in coherence with the conservation strategies or management plans approved to date: € 1,023,000;

Avoid and/or correct the degradation of the conservation status of the types of habitats and Natura 2000 species that have been caused by current activities or that may be caused by future ones. Guarantee the development of sustainable uses and activities, compatible with conservation: n.a;

Increase the level of knowledge, awareness and active social participation in the conservation of Natura 2000 spaces: € 66,500;

Stimulate cooperation between competent administrations: n.a.

⁶³⁸ https://app.alchemer.eu/response/download/file/247-132af265a5a4fd38603ff44900a00d01_20200521_PG_NATURA_2000_FORMENTERA_cast.pdf/id/90260004

Target 3

The restrictions of certain Management Plans implemented in protected natural areas dedicated to agriculture creates a loss of profitability for farmers (Survey inputs from a farmer and ranchers association);

The increase in the number of limitations and restrictions to foster sustainable forest management in the approval process for sustainable management plans is creating an additional cost for the sector. Delays in the approval terms of said instruments exceeding the legal term of 3 months generate further additional costs and no compensation measures are foreseen (Survey inputs from a regional forest association);

In La Rioja region, some measures addressed to the conservation of species have been carried out with limited investment and with quite positive results. Good results have been obtained in the forestry sector. However, there are some actions that require powerful investments such as the conservation of the European mink (Interview with a regional authority).

Target 4

Stringent rules to limit overfishing creates loss of profitability for fishermen (Interview with an association of fishing enterprises).

Evidence of socioeconomic impacts

Some interesting results have been achieved in increasing ecosystem services, green jobs and public procurement, as defined by *National Target 7*, but no significant changes are observed towards this national target, which is therefore halfway to being achieved;

Three initiatives (the Spanish Enterprise and Biodiversity Initiative (IEEB), the Empleaverde Program and the Empreverde Network) have been promoted by Fundación Biodiversidad to foster green jobs, and the Ecological Public Procurement Plan (2018-2025) was approved to promote a public consumption based on environmental parameters;

The restriction or limitation of certain activities can generate economic difficulties in certain sectors (fishing and agriculture), which may not be alleviated in the short term (Survey inputs from NGOs, an association of fishing enterprises and a farmers and ranchers association).

Target 1

Biodiversity conservation projects generate an important niche for stable employment and provide business opportunities, especially related to tourism. The lack of economic and human resources for their implementation has meant a loss of opportunity to generate new employment options and economic activities (Survey inputs from NGOs);

In the Balearic Islands, failure to halt biodiversity degradation is causing loss of beach surface (e.g., in the Es Trenc natural park), alteration of riverside habitats (e.g., in the Torrent de Na Borges); affectation of the fishing resources by affectation of the Posidonia meadows, etc. (Survey inputs from a regional authority).

Target 3

The depopulation of a large part of Spain is the consequence of agrarian policies that favour the concentration of the management of large areas of monoculture in the hands of few companies, most of them service companies, which do not establish a population in rural areas, hinder access to land and do not establish stable contracts. The loss of biodiversity associated with this agricultural management and the depletion of natural resources (water

and fertile soil), deteriorate the territory and reduce the quality of life (Survey inputs from an agroecology association);

In Catalonia, despite progress achieved so far, forest habitats are still suffering biodiversity loss; however, the activities focussed on the conservation and improvement of forest areas are coherent with the EUBS2020 (Interview with a regional forest association).

Target 4

The fishing sector is one of the most regulated and, due to the very high number of international vessels no subject to community rules, restrictions and limitations on their activity are causing job losses and worse labour conditions in the sector (Interview with an association of fishing enterprises).

1.2.3 Coherence

Coherence with the EU 2020 Strategy

In general, environmental policies have been consistent with the EUBS2020. The EUBS2020 helped to develop PAFs that have attracted funding from the European Maritime and Fisheries Fund (EMFF) and generate large projects aligned with it. However, except for the fisheries policy, the rest of policies in industry, agriculture and forestry sector are misaligned (Interview with NGOs);

At national level, several strategies have been carried out in favour of ecological production, and the development of the CAP has provided some measures in favour of biodiversity, such as agri-environmental measures within the Rural Development Plans (RDP) financed from the EAFRD (European Agricultural Fund for Rural Development) (Survey inputs from a farmers and ranchers association);

The National Strategy for green infrastructure connectivity and restoration (IVCRE Infraestructura Verde y de la Conectividad y Restauración Ecológica) as well as the National Plan for Adaptation to Climate Change include some measures and objectives coherent with EUBS2020 (Survey inputs from a regional forest association).

Concrete *examples of synergy* between the EUBS2020 targets and actions and other related EU or national policy objectives and implementation measures in Spain have been reported below:

In the Balearic Islands, among the example of coherent policies, instruments and measures with the EUBS2020 there are (Survey inputs from a regional authority):

Plans or strategies that promote sustainable agriculture (e.g. sustainable agriculture plans, organic farming, soil protection strategy): Law 3/2019, of January 31, on Agriculture of the Balearic Islands; Environmental restoration plan for the area affected by the Sa Canova fires, Artà; Environmental restoration plan for the area affected by the forest fire of August 14, 2016 in S'Espalmador, Formentera; Environmental restoration plan for the area affected by the S'Arenal d'en Castell fire, Es Mercadal; Decree 65/2019, of August 2, which declares the fight against the plague *Xylella fastidiosa* (Wells et al. 1987) of public utility in the autonomous community of the Balearic Islands and establishes the mandatory phytosanitary measures to fight against this plague and prevent it; etc.

Plans or strategies that promote the protection and sustainable management of forests: Decree 41/2005, of April 22, which approves the Special Plan to deal with the risk of forest fires;

Renewable energy plans and targets in synergy with biodiversity conservation: Law 10/2019, of February 22, on climate change and energy transition;

Flood protection plans that include ecosystem restoration / nature based solutions, avalanche or landslide protection strategies that require ecosystem restoration, other infrastructure plans that include ecosystem restoration / nature based solutions (railways, roads, energy etc.), river basin management plan / programme of measures requiring restoration, city plans to restore green infrastructure: Hydrological Plan of the Hydrographic Demarcation of the Balearic Islands (anticipated revision corresponding to the second cycle, 2015-2021), approved by Royal Decree 51/2019, of February 8; Special action plan in a situation of alert and eventual drought in the Balearic Islands, approved by Decree 54/2017, of December 15; Flood risk management plan for the Balearic Islands Hydrographic Demarcation, approved by Royal Decree 159/2016, of April 15;

Tools and measures under the Common Fisheries Policy, MSFD and Maritime Spatial Planning Policy that contribute to biodiversity: Within the framework of the Protocol on specially protected areas and the biological diversity of the Mediterranean, in the Balearic Islands there are 11 marine reserves that cover 63,700 ha: the Bay of Palma (1982), the North of Menorca and the Freus of Ibiza and Formentera (1999), the Migjorn de Mallorca Marine Reserve (2002), the Isla del Toro and Malgrats Islands reserves (2004), the Levante de Mallorca Marine Reserve, simultaneously with the Cala Rajada national reserve (2007), the Freu de sa Dragonera Marine Reserve (2016), the Punta de sa Creu de Formentera Marine Reserve and that of the northeast coast of Ibiza-Tagomago (2018), the Illa de l'Aire Marine Reserve in Menorca (2019), the Dragonera Island Marine Reserve of Fishing Interest (2020).

In Valencia region, among the example of coherent policies, instruments and measures with the EUBS2020 there are: 1) the Valencian Plan of Ecological production, with agro-composting implementation measures and support for biological control and advice on the use of green roofs and hedges; 2) various orders of support for innovation and cooperation in PE; the Valencian Plan for Cultivated Diversity, with actions for the conservation and recovery of traditional and local varieties; 4) Valencian catalogue of local and traditional varieties; 5) the local seed bank; 6) the activities of recovery of rivers and ravines, drainage channels from torrential rains with riverside vegetation and the Alzira green belt; 7) Policy fostering models on Economy of the Common Good⁶³⁹ and Green Routes⁶⁴⁰; within the CAP there are various Eco Schemes coherent with the biodiversity strategy such as green roofs, hedges and islands of biodiversity (Survey inputs from an agroecology association).

Coherence with EU Sectoral Policies

Although, national target 3 of the SPNHB is focussed on promoting the integration of biodiversity in different sectoral policies, there is no clear alignment between the EUBS2020 with sectoral policies where approaches to conservation are minor issues and incentives are available for practices contributing to the biodiversity loss (Interview with NGOs);

The strategy has not been integrated into fundamental policies. Among the example of incoherent policy instruments there are: 1) direct payments from the PAC and RDPs for moving to intensive crops by using phytosanitary products and fertilizers; 2) incentives for intensive forest plantations (eucalyptus, etc); 3) policies for the use of water resources, increased irrigation, etc; 4) policies for the construction of linear and transport infrastructures; 5)

⁶³⁹ <http://www.indi.gva.es/es/web/economia/economia-del-be-comu>

⁶⁴⁰ <https://www.valenciabonita.es/2018/01/05/las-vias-verdes-de-la-comunitat-valenciana/>

practices associated with hunting; 6) installation of renewable energies in places with an impact on biodiversity; 7) prevention of natural risks (Survey inputs from an agroecology association and a farms and ranchers association);

Often, there is no common goal among sectorial policies and halting biodiversity loss is not considered among the main issues when implementing actions in the territory. The synergy among sectorial policies both at national and regional level is not sufficient or inexistent (Survey inputs from NGOs);

Inconsistencies at the administrative level hinder positive synergies between the biodiversity strategy and sectorial policies (Interview with a regional forest association);

In agricultural sector, any of the national and regional plans support use outdated strategies, incentivising intensive agriculture. Such policies are incoherent with the EUBS2020 since they enhance to i) increase productive yields planning the use of agrochemicals (fertilizers and phytosanitary products); ii) obtain larger farms eliminating infrastructure "barriers" between terraces (often green spaces with wild species); iii) increase mechanization (to the detriment of biodiversity); iv) manage water in localized irrigation (reducing open-air channels, with permeable walls that allowed the life of riverside and aquatic species) and v) transform the areas to obtain steeper slopes (even at a contour line, without measures that minimize impacts, increasing erosion, reducing infiltration of rainwater into aquifers). Moreover, the use of herbicides, is still allowed (Survey inputs from an agroecology association and a farms and ranchers association);

In Valencia region, as examples of synergy between the EUBS2020 and agricultural policies there are the following instruments implemented to improve agrarian practices favouring biodiversity conservation (Survey inputs from an agroecology association):

<http://www.agroambient.gva.es/va/web/cief/catalog-valencia-de-varietats-tradicionals>;

<http://agricultura.gencat.cat/ca/detalls/Noticia/Publicacio-del-Decret-que-regula-el-Banc-de-Llavors>;

http://agricultura.gencat.cat/ca/tramits/tramits-temes/11162_Catalog-varietats-locales;

<http://agricultura.gencat.cat/ca/detalls/Article/Biodiversitat-cultivada>;

http://www.dogv.gva.es/portal/ficha_disposicion.jsp?L=1&sig=009649%2F2017.

Coherence with international biodiversity commitments

The SPNHB establishes national targets in line with the Global Strategy for Plant Conservation (GSPC) goals. In fact, action 10 of the specific objective 2.3 of the SPNHB foresees to “finalize and approve the Spanish Strategy for Vegetal Conservation (SSCV)” coherently with international CBD requirements. The Spanish Strategy for Vegetal Conservation was approved in 2014 and it is in line with the World Strategy for the Conservation of Plant Species⁶⁴¹.

Coherence with EU Biodiversity Strategy

The SPNHB is both the national response to the Strategic Plan for Biodiversity 2011-2020, including Aichi Biodiversity Targets and a fundamental element of the national Law 42/2007, of December 13, on Natural Heritage and Biodiversity⁶⁴²;

The specific objectives in the SPNHB are in line with the objectives established in the EUBS2020 and the principles and conclusions of the Convention on Biological Diversity (CBD).

However, the SPNHB might need to be completed, adapted or updated in the future, considering the results of its implementation and the updated international and EU frameworks.

⁶⁴¹ DG Environment, European Commission (2019), 6th National report to the CBD - Spain

⁶⁴² National Strategic Plan for Natural Heritage and Biodiversity 2011-2017 (MITECO, 2011)

1.2.4 Relevance

Relevance of EU Biodiversity Strategy

The EUBS2020 and its targets and actions defined in 2011 are considered relevant to preserve biodiversity in Spain. The overall targets defined in the SPNHB are relevant both to the EUBS2020 and Aichi Biodiversity Targets. However, a stronger commitment to the conservation of biodiversity is needed because biodiversity loss is increasing, and the problem has worsened significantly (Interview with NGOs).

Target 1

There have been no major changes since 2011, but the intensity of threats and pressures on habitats and species have evolved. Marine environment and coastal systems showed their special vulnerability in the climate change scenario (Interview with a regional authority and NGOs).

Target 3

The needs related to biodiversity in agriculture and forestry may still valid; however, given the decline in forest and agricultural biodiversity and the increasingly serious situation of ecological emergency, from mitigating the loss of biodiversity or recovering it, next step will likely be adapting to the consequences of this loss. This obliged change of actions is aggravated since biodiversity loss is seriously increasing, decade after decade. The step from the phase of network definition and consolidation to the real implementation of the targeted actions has not yet been taken in different areas of the country. Appropriate measures need to be put in place changing the approach adopted so far to avoid that decreases in biodiversity will increase even more in the next decade (Survey inputs from an agroecology association and a farms and ranchers association).

Target 4

In theory, the EUBS2020 is relevant to marine biodiversity needs but often actions are difficult to implement. The involvement of professionals in the fishing sector when planning actions to improve marine biodiversity is limited. This makes it difficult to have a clear picture about activities and problems fishermen encounter to respect the limitations imposed to reduce overfishing (Interview with an association of fishing enterprises).

Relevance to stakeholder needs

EUBS2020 is relevant to conservation goals and stakeholder needs, especially for actors working in the environmental sector. In other sectors the perception about the relevance of the strategy in preserving agriculture, aquaculture and forestry environments is less well-known. This could be also due to the insufficient dissemination of the strategy itself (Interview with NGOs);

The strategy is considered relevant by forestry sector, which recognizes the conservation of biodiversity as a fundamental part of the management of forest areas. Improving biodiversity of forest roads can enhance its vitality and productivity, and at the same time recovering pastures and cultivation areas can contribute to improve their biodiversity and can also reduce the risk of large forest fires by creating landscape discontinuities, for example (Survey inputs from a regional forest association);

It is recognized that conservation interests often converge with socio-economic interests. The achievement of a sustainable agriculture or fishing compatible with biodiversity conservation also implies a benefit for the different sectors involved. For example, overfishing interferes with seagrass habitats and the lack of quality of beaches depends on the regression of the dune ecosystems. Biodiversity loss impacts directly to potential income derived from tourism and the different actors involved (interview with a regional authority).

Relevance of EU Biodiversity Strategy to MS biodiversity needs

In general, the EUBS2020 responds to the main needs related to biodiversity in Spain and the SPNHB (following the lead of the EUBS2020) formulates a concrete vision for the present and future of the conservation of natural heritage and of biodiversity in the country, defining goals, objectives and actions that address the needs of conservation, sustainable use and restoration of the Spanish society;

EUBS2020 is relevant because it encompasses all sectors and many aspects for the conservation of biodiversity within those sectors. However, biodiversity is still considered as an independent sector, not a transversal one, demonstrating the strong lack of integration among sectors (Interview with NGOs);

EUBS2020 should put more emphasis on crucial aspects such as: impact of climate change on ecosystems and species, promotion and support of good practices for the improvement of biodiversity (extensive livestock, sustainable forestry, sustainable fishing, etc.), improvement of governance in protected natural areas (essential since most of the network is in private farms), fair distribution of costs and benefits of biodiversity conservation through compensation mechanisms, payments for environmental services, green taxation, etc. (Survey inputs from a regional forest association);

The EUBS2020 goals are not ambitious and concrete, especially on agriculture where no clear guidelines about specific targets for pesticides and organic farming are given (Interview with NGOs);

Although the EUBS2020 was relevant to agriculture, decrease in biodiversity has been evident in this sector. On the one hand, vegetation cover, hedges and other wild or feral areas related to the agricultural environment have been declining, and, on the other, the use of agrochemicals has been increasing at the expense of natural biological control and pollinators. The active policies in favour of the implementation of natural areas, plant covers, hedges, insectaries, etc., have been scarce (Agroecology association). Limited funds have been allocated in the agroforestry management to use alternative techniques of conservative natural biological control. The conservation, recovery and use of local and traditional agricultural varieties, or the recovery and conservation of endangered or interesting local or traditional livestock breeds, have not been clear objectives of the strategy and no specific funds were allocated to that (Interview with a regional forest association);

No clear incentives in the RDPs were provided to develop agroecology practices (Survey inputs from an agroecology association).

1.2.5 EU added-value

The added value of the EUBS2020 as a policy instrument to reduce biodiversity loss in Spain is recognized compared to the actions that would otherwise have been created only through national legislation (Survey results from NGOs, a farmers and ranchers association, regional authorities and interview with an association of fishing enterprises);

Spain had no biodiversity-related strategy nor targets in place prior to the EUBS2020. Before the elaboration of the SPNHB it was evident that knowledge and research production on biodiversity was insufficient and not updated⁶⁴³. The need to have a national strategy on biodiversity in line both with the provisions of Law 42/2007, of December 13, on Natural Heritage and Biodiversity and with the EUBS2020 was clear to transmit the benefits coming from the implementation of such plan to the whole society and incorporated them into decision-making processes⁶⁴⁴. Following the lead of the EU BS2020, the Spanish SPNHB was adopted in 2011;

The EUBS2020 marks ambitious targets in international conventions and define the guidelines for the Member States (Survey inputs from NGOs);

The EUBS2020 was an instrument needed to halt biodiversity loss, but not sufficient to achieve the fixed objectives. It has many handicaps due to inconsistencies in its application, lacks in effectivity and has insufficient legal ties for its compliance. There are several issues that have not been addressed such as the ambiguity of the objectives, the not legally binding character of the strategy, or the definition of who impose the sanctions (Survey inputs from a regional authority and NGOs)

Different are the identified **strengths** of the EUBS2020 as the main biodiversity policy instrument:

The EUBD2020 provided clear guidelines for the country and pushes it to carry out actions and measures for the conservation and protection that otherwise would have been less ambitious (Interview with NGOs);

It gives opportunities to access to EU funds;

Being an EU-wide Strategy is able to be applied without any exceptions to all Member States;

It has allowed to start the debate on some problems that must be faced locally, such as the need to restore habitats and recover species, but which have international implications (Survey inputs from NGOs);

It has confirmed that all economic sectors must be more actively involved and committed in initiatives for the protection of biodiversity (Interview with a regional forest association);

It has underlined the challenges that agriculture and livestock sectors must face, with regulatory support, to achieve a production more compatible with biodiversity conservation while dealing with the threat of new pests and invasive species (Survey inputs from an agroecology association and a farmers and ranchers association);

It has shown the challenges that fishing sector must comply courageous regulation and taking measures to regulate overfishing and increasing pressures on the seabed (Survey inputs from NGOs)

It has evidenced the need of more ambitious objectives and more courageous and effective measures to adapt territories to the effects of climate change;

It underlines the need of opening new horizons and strategies to ensure that the protection and recovery of biodiversity is understood as an opportunity to create new investment initiatives

⁶⁴³ National Strategic Plan for Natural Heritage and Biodiversity 2011-2017 (MITECO, 2011)

⁶⁴⁴ DG Environment, European Commission (2019), 6th National report to the CBD - Spain

and employment opportunities, since traditional models are becoming too vulnerable and not resilient for adaptation (Survey inputs from NGOs).

However, the EUBS2020 also have several **drawbacks and weaknesses** to consider:

The dissemination of the objectives has not reached all the actors. This implies a further rejection for implementing biodiversity conservation measures that are not fully understood, which limits the progression towards the defined targets. The EUBS2020 asks for a change of model that almost always generates reluctance by certain sectors (Interview with a regional authority);

Lack of interrelation with other sectoral policies (Survey inputs from a regional forest association and a farmers and ranchers association);

The member states are not obliged to adopt a minimum number of measures and actions, and targets are not legally binding (Interview with NGOs);

Lack of measurable and concrete objectives (and a missing baseline to establish these objectives) (Survey inputs from NGOs);

Lack of specific funding and resources for the implementation and fulfilment of the objectives;

Lack of mechanisms to guarantee coherence with related policies and guidelines and serious deficit in governance (Interview with a regional Forest association);

Lack of sufficient stakeholders' engagement (Interview with an association of fishing enterprises).

Despite the mentioned weaknesses, **withdrawing the existing** EU intervention would have created negative consequences:

Lack of transnational guidelines to base biodiversity conservation decisions on larger scale (networks, ecological corridors, marine corridors, migratory routes, etc.) (Survey inputs from NGOs);

Lack of European frameworks promoting initiatives for biodiversity conservation and sustainable resource management at the state and regional level (Survey inputs from a farmers and ranchers association);

Lack of forums for discussion and exchange of experiences, extrapolated or comparable allowing the development of indicators on a larger scale (Survey inputs from NGOs).

Several **alternative instruments** have been identified as suitable to achieve the EUBS2020 targets more efficiently:

The existence of a specific financing by certain European funds, such as the European Agricultural Fund for Rural Development, to compensate and encourage farmers and ranchers to carry out a sustainable activity in favour of biodiversity would have achieved better results (Survey inputs from a farmers and ranchers association);

More ambitious Common Agricultural Policy (CAP) and European Maritime and Fisheries Fund (EMFF), with greater actions and measures aimed at the protection and implementation of biological diversity would have enhanced the capability of achieving objectives in agricultural, forestry and aquaculture sectors. To contribute to that, rewards those who contribute to the health of people and to the improvement of the environment and protection of the climate and biodiversity should have been provided (Survey inputs from a farmers and ranchers association and interview with an association of fishing enterprises).

Evidence of additional benefits compared to MS action

The of the EUBS2020 gave impulse to the national regulatory framework aimed at environmental conservation and management. The existence of a European framework helped to defend or justify the necessary budgets and has helped to raise awareness and give meaning to many initiatives that otherwise would have been more difficult to frame. For some biodiversity conservation initiatives, the EUBS2020 has allowed to contextualize the proposals in the European guidelines, which makes them more solid. (Survey inputs from NGOs and a regional forest association);

The EUBS2020 supported both policymakers and managers. The dissemination of the monitoring reports in several contexts helped managers to know the reality of environmental management at a higher level than that of their field, thus knowing if the situation is consistent with that developed in the rest of the regions and allowing to take contextualized decisions (Survey inputs from NGOs).

The EUBS2020 facilitated the access to European funds (Survey inputs from NGOs, a farmers and ranchers association and an agroecology association).

Evidence of change in MS ambition and/or commitments due to Biodiversity Strategy

Without the EUBS2020 there would be a lower national commitment to the conservation of biodiversity. The national ambition in decreasing biodiversity loss would be much lower, much less ambitious goals would be set and there would be less motivation to achieve them due to lack of external control. The EUBS2020 guided to meet certain objectives, helped drawing up management plans and implementing national plans and strategies (Interview with NGOs and a regional authority).

Evidence of change in sectoral ambition due to Biodiversity Strategy

NGOs stated that there was no real change in sectoral ambition due to the adoption of the EUBS2020. They underline that not sufficient attention has been given to identify what are the real problems of missing integration between the different sectoral policies to create more synergy among them and the EUBS2020 (Interview with NGOs).

Other:

NGOs stated that it may be important to understand the grade of knowledge of the EUBS2020 by citizens or other relevant actors to adapt awareness actions accordingly (Interview with NGOs); According to NGOs, infringement procedures should be addressed more in detail, already in the EUBS2020, to avoid having discouraging measures that are too soft at national level (Interview with NGOs).

1.3 Conclusions

Adopted in 2011, the Strategic Plan on Natural Heritage and Biodiversity (SPNHB) defined national targets for the period 2011-2017, following the lead of the European Biodiversity Strategy towards 2020, as well as the Aichi targets.

1.3.1 Effectiveness

Thanks to the existence of a common strategy and the support of EU financial instruments, political will, administrative cooperation of the MITECO and the Autonomous Communities, numerous actions and measures have been promoted to preserve and restore biodiversity of Spanish terrestrial and marine ecosystems. However, most of the SPNHB objectives have not been fully met and the plan has not been updated since its completion in 2017. Lack of financial and human resources, discontinuity of projects, lack of well-established lines and long-term objectives and insufficient information about many species, habitats and threats, have hindered achieving the SPNHB targets.

Concerning target 1, important results have been achieved in the development and use of the Spanish Inventory of Natural Heritage and Biodiversity. Advances in the application of the Habitats and Species Directives, especially in the designation of protected areas and in the protection of species have been made. However, there remain many aspects which have not yet been adequately developed: for example, most sites still lack conservation objectives and measures, and many plans and projects have been approved despite their adverse impacts on the Natura 2000 network. There are clear examples of non-compliance especially because the SPNHB is not sufficiently monitored. Most habitats and species remain in an unknown or unfavourable state of conservation. The evidence is even more alarming for species linked to the aquatic environment whose conservation status has been drastically worsened. Management plans for protected areas are not of sufficient quality and in most cases, they have not been developed by using participatory processes.

Concerning target 4, numerous actions focussed on marine biodiversity protection have been carried out thanks to LIFE projects. Marine Natura 2000 Network has received an important improvement in the designation of protected areas that increased from 1% (2012) to 8% (2017). The Spanish Inventory of Marine Species and Habitats has been launched and an assessment of the state of the marine environment in relation to biodiversity has been completed. However, there are still overexploited Mediterranean commercial stocks, unsustainable fishing activities continue to have a significant impact on some protected species and habitats and negative impacts caused from anthropic activities (urban development, marine litter, transport activities, etc.) is still modifying marine habitats.

1.3.2 Efficiency

Apart from a first approximation indicating the economic benefits of the Natura 2000 Network for Spanish society as whole, specific economic quantification of actions carried out to improve biodiversity are not available. Reports which define the costs for each specific conservation measure are limited, or not publicly available. Limited financial resources hindered monitoring activities as well as the potential to check on the progress towards meeting the targets and the efficiency of the strategy itself. However, where data are available the benefits/cost balance is positive. Projects implemented to conserve terrestrial and marine habitats biodiversity resulted in wider socio-economic benefits, including job creation job opportunities, such as in the tourism sector.

Some positive results are evident in an increase of ecosystem services, green jobs and public procurement. However, no significative changes are observed in implementing a perspective linking the conservation of ecosystems with different components of human wellbeing - natural capital perspective - in developing national projects, strategies and plans. Despite the mentioned positive economic impacts, the restriction or limitation of certain activities in preserving biodiversity, can generate economic difficulties in certain sectors (fishing and agriculture), which may not be alleviated in the

short term. Therefore, sustainable techniques may be limited if there are no incentives and no social protection for those who implement good practices.

Although the national target 8 of the SPNHB was dedicated to mobilization of financial resources towards biodiversity protection, progress towards this national target have been achieved, but at an insufficient scale. In fact, despite different projects contributing to halt biodiversity decline were financed, from surveys and interviews it emerged unanimously that national and sub-national biodiversity strategies have not been adequately funded.

Concerning target 1, various actions were promoted in the Natura 2000 Network by the MITECO in several Spanish autonomous communities thanks to ERDF funds. However, it is difficult to provide concrete examples of the costs of implementing specific actions to achieve this target, since segregate data about the costs are not available. Many investments have been made by Public Administrations and there are few statistics or detailed data available. Despite the limited information about costs, species and habitat conservation projects generate an important niche for stable employment and provide business opportunities, especially related to tourism. The lack of economic and human resources for their implementation has meant a loss of opportunities to generate new employment options and other economic activities. On the other hand, the restrictions of certain Management Plans implemented in protected natural areas dedicated to agriculture, has resulted in a loss of profits for farmers. The separation of competences between conservation and sustainable use of natural spaces hindered efficient coordination and synergy at the administrative level. Insufficient collaboration among the actors clearly impeded the achievement of the target.

Concerning target 4, in an effort to reduce marine environmental pollution, initiatives that detect abandoned fishing gear and seek to reduce marine litter were implemented. These initiatives provide concrete benefits to marine areas by involving fishermen and promote public environmental awareness on marine biodiversity. To ensure sustainable fishing, some marine areas were closed, and legally binding over-fishing limitations were introduced. These generated disappointment among fishing enterprises that claim job losses, reduction of annual income, selectivity of the rules only applicable to European fleets, insufficient involvement in the definitions of measures and missing acknowledgement for their role as floating marine litter collectors. Greater stakeholder participation is a crucial step to achieve better results in limiting overfishing. This may also assist to have both a more complete picture of the activities and problems fishermen encounter and increase fishing sector's awareness of the existing threats to marine biodiversity in the Mediterranean Sea and in the Atlantic Ocean.

1.3.3 Coherence

In general, environmental policies have been consistent with the EUBS2020, which is a positive overall. Although the national target 3 of the SPNHB is focussed on promoting the biodiversity integration different sectoral policies, there is no clear alignment between the EUBS2020 and industry, agriculture, and forestry sectors. The strategy has not been fully integrated into fundamental policies. In most of agricultural and forestry policies, biodiversity conservation is a minor issue. Intensive agriculture, monocultures, extractive forests activities, uncontrolled or not penalized overexploitation of aquifers and hydrological works to change irrigation systems on a large scale are practices supported and incentivized by sectorial policies although contributing to biodiversity loss. Environmental policies encourage the installation of renewable energy plants to mitigate climate change but they impact on biodiversity. Environmental assessment studies carried out before their implementation define this impact and the related mitigation measures.

Concerning target 1, since 50% of the Spanish territory is dedicated to agriculture, policies related to this sector have a special relevance to species and habitats preservation in agricultural areas. Apart from strategies carried out in favour of biodiversity such as ecological production measures, many of the national and regional plans (guided by the Common Agricultural Policy) incentivize unsustainable practices based on intensive agriculture and massive agrochemicals products use. Such agricultural practices are in contrast with the EUBS2020 due to their negative impact on species and habitats present in some agricultural areas. This incoherence may be addressed by implementing measures to achieve production that is more compatible with biodiversity conservation and considering the threat of new pests and invasive species, for example.

Concerning target 4, the EUBS2020 helped to develop PAFs that have captured funding from the European Maritime and Fisheries Fund (EMFF) and generated large projects aligned with it. Among the different sectorial policies, the Common Fisheries Policy is acknowledged as the most aligned with the ESB2020, but also the one creating the strongest rejection by the sector involved. Fishermen indeed claim that rules are too stringent, and their income is suffering because of imposed limitations.

1.3.4 Relevance

EUBS2020 is recognized as relevant because it encompasses all sectors and many aspects important for the conservation of biodiversity within those sectors. However, biodiversity is perceived as an independent area, not a transversal one, demonstrating a clear lack of integration among sectors. This could be also due to insufficient dissemination of the strategy itself. Limited involvement of stakeholders might imply a subsequent rejection of biodiversity conservation measures that are not fully understood. Biodiversity policies, guidelines and strategies may require a multidisciplinary approach that is often missing as it is lacking an overall vision, and the will to dialogue and work together with experts in fields such as aquaculture, agriculture, forestry management, livestock, etc.

In response to main needs related to biodiversity conservation in Spain, the EUBS2020 should have put stronger emphasis on crucial aspects such as: promotion and support of best practices to improve biodiversity (extensive livestock, sustainable forestry, sustainable fishing, etc.), improve protected natural areas (essential since most of the network is in private farms), fair distribution of costs and benefits of biodiversity conservation through compensation mechanisms, payments for environmental services, green taxation, etc.

Concerning target 1, the EUBS2020 is still relevant since there have been no major changes since 2011, but the intensity of threats and pressures on habitats and species has evolved. Marine environment and coastal systems showed their special vulnerability to climate change. Objectives and actions should be calibrated periodically based on climate change impact, recorded from 2011 to today, and further adaptations are likely needed as these impacts evolve over the next decade.

Concerning target 4, in theory, the EUBS2020 is relevant to marine biodiversity needs but often actions are difficult to implement. The involvement of fishermen when planning actions to improve marine biodiversity is limited. This makes it difficult to have a clear picture of the activities and problems fishermen encounter with respect to the limitations imposed to reduce overfishing.

1.3.5 EU added-value

The EUBS2020 propelled the national regulatory framework focussed on environmental conservation and management. The existence of a European framework helped to defend or justify the necessary budgets allocated to limit biodiversity loss, raised awareness and gave meaning to many initiatives that otherwise would have been difficult framing without an adequate environmental approach.

The EUBS2020 served as a guide to meet certain targets, helped to elaborate management plans and implement national plans and strategies, but it was not sufficient in fulfilling its objectives. According to surveys and interviews, it has many handicaps due to inconsistencies in its application. Its objectives were found to be vague, and that it lacked effectiveness, sufficient legal implications for its compliance, and clear definition of who imposes the sanctions.

Despite the mentioned weaknesses the added value of the EUBS2020 as a policy instrument to reduce biodiversity loss in Spain is widely recognized. Indeed, without the European strategy there would be a lower national commitment to biodiversity conservation, less ambitious objectives and lower motivation to achieve them due to lack of external control.

The SPNHB, in line with the EUBS2020, has provided guidelines for the country and includes actions and measures for biodiversity conservation and protection that otherwise would have been less ambitious. Despite the progress achieved in Spain, financial and organizational limitations diffculted the achievement of the defined biodiversity targets. A more active involvement and commitment of all economic sectors in initiatives focussed on biodiversity protection may open up new horizons to change traditional development models and make them less vulnerable and more resilient to climate change.

2 Italy

2.1 Introduction

2.1.1 Overview of key biodiversity state, trends, pressures and drivers

The huge variety of habitats and species and the high levels of endemism make Italy one of the European countries richest in biodiversity. The great variety of environments ranges from the mountainous areas of the Alps and the Apennines to the plains and the Mediterranean coasts. The Italian richness of flora and fauna in the country includes one third of European animal species, half of European plant species and many endemic animal and plant species⁶⁴⁵.

An important part of the territory is intensively exploited. Some habitat types are degraded and are losing their ability to provide traditional ecosystem services. Since the middle of the last century, biodiversity in Italy has undergone a very strong reduction, particularly due to land consumption. Among the main pressures on the biodiversity of the country are agriculture, alien species and the development of infrastructures for industrial, commercial, residential and recreational use⁶⁴⁶.

In Italy, it was clear the need to initiate a broad environmental restoration action, in favour of the recovery of ecosystem services, the protection of natural heritage and, above all, for adaptation to climate change. The climatic and health emergency reinforces the need for environmental recovery action. Concrete proposals for the "rehabilitation of nature" were needed to follow the path towards a concrete and widespread renaturation of the territory, indispensable actions to promote climate change adaptation.

The first attempt to illustrate the status and trend of biodiversity in Italy and provide a basic scenario useful to the elaboration of a national biodiversity strategy was the development in 2005, with the publication of "Status of Biodiversity in Italy - Contribution to National Biodiversity Strategy"⁶⁴⁷.

From this publication, it emerged that two of the main obstacles concerning knowledge of biodiversity at the national level were: 1) the difficulty in bringing together the numerous sources of information available throughout the territory (academic, agency, public, private, local and central) and 2) the complexity in creating cooperation between the State, the Regions and the Autonomous Provinces to refine national and local knowledge in order to produce appropriate tools for identifying national targets.

The high value of biodiversity and the existing threats demanded for a deep analysis of the status of conservation of the territory, the definition of priority measures and the implementation of effective actions to halt the biodiversity loss. The Italian National Biodiversity Strategy (NBS) and its mid-term review up to 2020 are intended to guide the implementation of the conservation of biodiversity based on the protection and recovery of ecosystem services and their essential relationship with human life.

2.1.2 Overview of the national biodiversity policy framework, governance and overall progress towards the EU and global 2020 biodiversity targets

⁶⁴⁵ <https://www.isprambiente.gov.it/it/attivita/biodiversita/le-domande-piu-frequenti-sulla-biodiversita/come-si-presenta-la-situazione-della-biodiversita-in-italia>

⁶⁴⁶ https://wwf.it/awsassets.panda.org/downloads/24_10_20_report_biodiversita_in_italia_status_e_minacce.pdf

⁶⁴⁷ 4th National report to the CBD - Italy (MATMM, 2009)

The Italian National Biodiversity Strategy (NBS) was released in 2010, one year before the publication of the European Biodiversity Strategy towards 2020 (EUBS2020), and it was updated in 2016 in line with the objectives set out in the EUBS2020.

The NBS covers the period from 2011 to 2020 and defines 3 national strategic targets: 1) Biodiversity and ecosystem services, 2) Biodiversity and climate change, and 3) Biodiversity and economic policies.

1. National Strategic target 1: Biodiversity and ecosystem services

By 2020, ensure the conservation of biodiversity, or the variety of living organisms, their genetic diversity and the ecological complexes of which they are part, and ensure the protection and restoration of ecosystem services in order to guarantee their key role for life on Earth and human well-being;

2. National Strategic target 2: Biodiversity and climate change

By 2020, substantially reduce the nationwide impact of climate change on biodiversity, by defining the appropriate measures to adapt to climate changes and mitigate their effects and by increasing the resilience of natural and semi-natural ecosystems and habitats;

3. National Strategic target 3: Biodiversity and economic policies

By 2020, integrate biodiversity conservation into sectoral and economic policies, also in terms of new employment opportunities and social development, reinforcing the understanding of benefits of ecosystem services that originate from it and the awareness of the cost of losing them.

To achieve these targets, 15 “Work Areas” were defined: 1. Species, habitat and landscape; 2. Protected areas; 3. Genetic resources; 4. Agriculture; 5. Forests; 6. Inland water; 7. Marine environment; 8. Infrastructures and transportation; 9. Urban areas; 10. Health; 11. Energy; 12. Tourism; 13. Research and innovation; 14. Education, information, communication and participation; 15. Italy and global biodiversity. For each Work Area main threats and/or criticalities, specific targets to counter such threats and priority measures to be undertaken are identified. There is no priority of action in the different work areas and sectoral policies, rather a synergy that produces the best possible result to preserve biodiversity and ecosystems.

The 3 strategic targets, the specific targets related to the 15 work areas, the correspondence with the EUBS200 targets and their priority actions are included in the following table. Other national legislation/policies related to the NBS are also reported.

Table 2-1 Mapping of national targets to the Targets of the EU Biodiversity Strategy to 2020

EU Biodiversity Strategy 2020	IT National targets	Related strategies/action plans/measures
Headline target: halt the loss of biodiversity and the degradation of ecosystem services	<p>National Strategic target 1: Biodiversity and ecosystem services</p> <p>National Strategic target 2: Biodiversity and climate change</p> <p>National Strategic target 3: Biodiversity and economic policies</p>	<p>The Italian National Biodiversity Strategy (NBS) 2010</p> <p>Other National legislation/policies related to the NBS:</p> <ol style="list-style-type: none"> 1. The Law no. 221/2015 "Environmental measures for promoting green economy and limiting the excessive use of natural resources". 2. The National Strategy of Adaptation to Climate Change, which provides the framework for actions to reduce the impact of climate change on the environment and on socio-economic sectors. 3. The Framework Law on Protected Areas (Law 394/91), Sea Protection (Law 979/82), and respective subsequent amendments comprise the main regulatory principles for terrestrial and marine protected areas in Italy. 4. Law 61/2006 on the establishment of Areas of Ecological Protection (AEP). 5. Legislative Decree 2017/230 on Invasive Alien Species to safeguard species conservation. 6. The National Strategy for Sustainable Development (2017) constituting the framework for the NBS. 7. The National Strategy for Sustainable Development was adopted in 2017 as a strategic reference framework for sectoral and territorial policies focused on sustainability and capable of addressing environmental, economic and social issues.
	Specific targets in Work area 1: Species, habitats and landscape	Priority measures:
Target 1,2	<p>1a. Species and habitat:</p> <p>Improve knowledge on number, characteristics and conservation status of habitats and species and the ecosystem services that they offer; implement monitoring actions. (Aichi target 19)</p>	<ol style="list-style-type: none"> 1. Promote programs and initiatives aimed at improving knowledge on the substantial features, threat factors and the conservation status of species, habitats and related ecosystems, 2. Promote the creation and consolidation of green infrastructure for a sustainable use of natural resources, to strengthen the resilience of ecosystems to climate change and supporting national adaptation policies and measures.
Target 6	Incorporate in legal provisions questions as habitat and species conservation, sustainable use of natural resources. (Aichi target 2,4)	

EU Biodiversity Strategy 2020	IT National targets	Related strategies/action plans/measures
Target 1,2,5	Implement dedicated policies aiming to pledge a satisfactory status of habitats and species conservation. (Aichi target 4,5,9,14,17)	3. Implement programs preventing, monitoring and eradicating invasive alien species. 4. Implement policies on sustainable hunting, poaching reduction and migratory species conservation.
Target 2,6	1b. Landscape: Integrate legal provisions with landscape conservation issues, with specific reference to large and local scale action planning. (Aichi target 2,4,17)	5. Implement the objectives of the Natura 2000 network, especially regarding the identification of sites in the marine environment, to the designation of Special Areas of Conservation offshore or onshore, to the effective implementation of conservation measures and to the achievement of the conservation status satisfactory for habitats and species.
Target 1	Specific targets in Work area 2: Protected Areas Improve the management of protected areas in order to create synergies. (Aichi target 11) Encourage ecological connectivity among protected areas, as an essential instrument for the continuity of ecosystem services (Ecological Networks). (Aichi target 11) Strengthen National PAs system. (Aichi target 11)	<i>Priority measures:</i> 1. Implement conservation projects on species, habitats, ecological processes and ecosystem services. 2. Strengthen governance and local partnerships to ensure the achievement of the environmental quality objectives set by the Habitats and Birds Directives, by the Water Framework Directive and the Marine Strategy Framework Directive. 3. Implement programs of awareness raising, information and education on the theme of Biodiversity and its conservation. 4. Implement programs for training personnel working in protected areas and programs for sharing knowledge and best practices.
Target 6	Specific targets in Work area 3: Genetic Resources Improve knowledge of the national and international heritage of genetic resources of fauna and flora (nature, distribution, state of conservation). (Aichi target 19) Increase awareness of the opportunities stemming from their sustainable use and the risks connected to genetic erosion and pollution. (Aichi target 13,17,18)	<i>Priority measures:</i> 1. Implement information programs, communication and awareness raising on numbers, characteristics and conservation status of national genetic resources. 2. Implement policies aiming to the conservation of national genetic resources of fauna and flora. 3. Incentivize the contribution of Botanical Gardens, Germplasm Banks, Zoos and Aquariums for in situ and ex-situ conservation and for the recovery of Biodiversity and implement programs and measures for the conservation of particularly endangered species.

EU Biodiversity Strategy 2020	IT National targets	Related strategies/action plans/measures
	Achieve CBD's third target in order to obtain a fair and equal benefit sharing derived from the use of genetic resources. (Aichi target 16,17)	<p>4. Safeguard ancestral species of crops and livestock at risk of extinction or genetic pollution.</p> <p>5. Prevent genetic pollution of wild animals in the herd of terrestrial and marine species and restocking activities.</p> <p>6. Mitigate the genetic impact of non-indigenous species.</p>
Target 3	<p>Specific target in Work area 4: Agriculture</p> <p>Implement policies aiming to preserve and sustainably use agricultural biodiversity, to protect and to promote agricultural and forestry practices of high nature value (HNV). (Aichi target 2,3,5,7,8,13,14,15,17,18)</p>	<p><i>Priority measures:</i></p> <p>1. Maintain and, if necessary, recover ecosystem services of the agricultural environment being damaged, favouring agricultural production systems that prevent the chemical, physical and biological degradation of soil and water.</p> <p>2. Promote the defence of the territory through integrated policies that foster sustainable agriculture, avoiding the abandonment and/or the marginalization of agricultural areas to ensure that the farmers take on the role of custodians of their own lands.</p> <p>3. Promote the protection and enhancement of local and native species and act to prevent the risks connected to the introduction of genetically modified cultivation.</p> <p>4. Incentivize control, prevention and awareness raising of operators in the agricultural sector concerning the damage caused by pesticides and the use of biological and integrated control techniques in agriculture.</p> <p>5. Support the maintenance of ecosystems and the rural landscape through a focused management of agricultural land to create and/or maintain a kind of "green infrastructure".</p>
Target 2,3	<p>Specific targets in Work area 5: Forests</p> <p>Implement policies aiming to protect forests, mitigate climate change by improving the contribution of forest environments to the carbon cycle, foster the restoration and maintenance of the ecosystem services of forest formations. (Aichi target 2,3,4,5,7,14,15,17)</p>	<p><i>Priority measures:</i></p> <p>1. Encourage the inclusion of Biodiversity protection in all levels of forest planning (management plans of protected areas, conservation measures, management plans of Natura 2000 sites) and the use of the National Inventory of Forests and Forestry Carbon Sinks as a basic inventory system of the Italian forest resources.</p>

EU Biodiversity Strategy 2020	IT National targets	Related strategies/action plans/measures
	<p>Deepen knowledge on species amounts, characteristics and conservation status of National forestry and undertake related monitoring activities. (Aichi target 19)</p> <p>Develop adequate level of integrated planning between forestry, agriculture, environment, river basins and urbanistic-infrastructure sector. (Aichi target 2,7)</p> <p>Step up certification process for forestry, with reference to the two systems now operating in Italy (the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC)). (Aichi target 7,17)</p>	<p>2. Promote interdisciplinary research projects that evaluate the multifunctional aspects of the sustainable management of forest systems, to maintain a high level of biodiversity, to better understand the impact of climate change, to counter the degradation of forest ecosystems and to promote the welfare of local communities.</p> <p>3. Implement sustainable forest management principles, ensuring a continuous monitoring process of the forest conservation status, recovering the forest potential that has been damaged by climatic events, plant pathologies and fires by using native species even though not fast-growing.</p>
Target 1	<p>Specific targets in Work area 6: Inland waters</p> <p>Protect and conserve at river basin scale inland water ecosystems and related ecosystem services, tackling bio-diversity loss and degradation and, where possible, promoting its restoration and making a sustainable use of water systems. (Aichi target 11,14)</p> <p>Improve knowledge of water systems status, in order to better assess human activities impact, and climate change effects on physical and biological processes. (Aichi target 19)</p>	<p><i>Priority measures:</i></p> <p>1. Implement measures aimed at improving the efficient use of water resources and the re-use of purified wastewater to ensure the sustainable use of water systems (water, sediment, biota)</p> <p>2. Limiting human pressure on inland waters exerted by the seasonal demand from tourism also through seasonality reduction and changing ways of tourism (sustainable fishing tourism sectors)</p> <p>3. Ensure that the needs of Biodiversity Conservation of inland water ecosystems and the relative ecosystem services are included in sector and economic policies.</p>
Target 4	<p>Specific targets in Work area 7: Marine environment</p> <p>Protect and preserve coastal and marine environment, tackling deterioration and biodiversity loss, and related ecosystem services; where possible maintain and/or restore good condition in marine ecosystems. (Aichi target 4,5,6,10,11,12,14,15)</p>	<p><i>Priority measures:</i></p> <p>1. Foster scientific research in coastal and marine environment, to understand, prevent and mitigate biodiversity loss caused by human activities and climate change.</p> <p>2. Promote the establishment of a network of marine protected areas in the Mediterranean.</p>

EU Biodiversity Strategy 2020	IT National targets	Related strategies/action plans/measures
	<p>Deepen knowledge on numbers, characteristics and conservation status of marine habitats and species, as well as on impacts deriving from humane activities and climate change. (Aichi target 19)</p> <p>Ensure integration between biodiversity's need for costal and marine environment and economic and sectorial policies, with the aim to secure a sustainable use of resources. (Aichi target 2,3,4,6,17)</p>	<p>3. Increase the spatial protection measures of coastal and marine environment, in order to achieve the goal of protecting at least 10% of that environment, as provided by Aichi Target 11 and by the Marine Strategy Framework Directive.</p>
Target 6	<p>Specific targets in Work area 8: infrastructure and transportation</p> <p>Reduce impacts on biodiversity deriving from building and operating of infrastructures, and to curb soil consumption. (Aichi target 2,4)</p>	<p><i>Priority measures:</i></p> <ol style="list-style-type: none"> 1. Integrate of infrastructures in the ecological network. 2. Promote sustainable types of mobility in urban areas. 3. Increase of green spaces in urban areas that can serve as pollutant filtration systems. 4. Adopt and implement naturalization and bioengineering techniques while integrating infrastructures in the environment. 5. Implement and update skills on environmental issues (with special emphasis on biodiversity conservation) of the human resources involved in the infrastructure and transportation supply chain.
Target 2,6	<p>Integrate in land planning policies related to mobility, infrastructures and transports, in order to achieve a simultaneous assessment of impacts on environment and biodiversity. (Aichi target 2,4,17)</p>	
Target 2,6	<p>Specific targets in Work area 9: Urban areas</p> <p>Integrate in urban planning targets related to the conservation of biodiversity (Aichi target 2,4,17)</p> <p>Improve knowledge on ecological status of urban ecosystems (Aichi target 19)</p> <p>Protect and preserve urban ecosystems</p>	<p><i>Priority measures:</i></p> <ol style="list-style-type: none"> 1. Promote best energy-saving technologies in buildings and reducing paved and cemented surfaces to ensure soil permeability and restore a more natural water cycle. 2. Promote drawing and implementation of urban plans with special emphasis on the aspects of nature and biodiversity, including those of urban soils. 3. Create and maintain ecological corridors in urban areas; optimize waste cycle. 4. Promote the environmental redevelopment of urban areas by encouraging integrated projects for the recovery of built areas and natural habitats.
	<p>Specific targets in Work area 10: Health</p>	<p><i>Priority measures:</i></p>

EU Biodiversity Strategy 2020	IT National targets	Related strategies/action plans/measures
	<p>Integrate aspects relevant to public health in programs and actions aiming to preserve biodiversity (Aichi target 17)</p> <p>Deepen knowledge of threats and impacts on health derived from change of biodiversity linked to climate change</p> <p>Look after and manage in a sustainable manner plant and animal species in order to guarantee food security and therapeutic value</p> <p>Prevent illness and diseases from biological imbalance</p>	<ol style="list-style-type: none"> 1. Develop tools to monitor and prevent the impact of biodiversity loss on specific species and habitats. 2. Implement actions aimed at providing information and raising public awareness about synergy between biodiversity conservation and human health and welfare at a national level.
Target 6	<p>Specific targets in Work area 11: Energy</p> <p>Mitigate impact on biodiversity from energy supply (Aichi target 2,4)</p> <p>Integrate energetic policies with environment and land planning (Aichi target 2,4,17)</p>	<p><i>Priority measures:</i></p> <ol style="list-style-type: none"> 1. Integrate the specific objectives of the Strategy into the National Energy Plan. 2. Promote energy efficiency to reduce the consumption of primary sources. 3. Apply the Strategic Environmental Assessment (SEA) to integrate environmental issues in the drafting of sustainable energy programs and plans.
Target 6	<p>Specific targets in Work area 12: Tourism</p> <p>Prevent and minimize impact on biodiversity and landscape from tourism, and to promote restoration initiatives (Aichi target 2,4).</p> <p>Promote integration between conservation and sustainable use of biodiversity and development of tourism (Aichi target 2,4,17).</p>	<p><i>Priority measures:</i></p> <ol style="list-style-type: none"> 1. Provide basic information, also through specific indicators, allowing users to make assessments and informed decisions at every level about tourism and biodiversity. 2. promote education, training, information and awareness of sustainable tourism and critical consumption of resources. 3. promote sustainable tourism keeping in mind the national image in global markets, develop biodiversity, the resources and the characteristics of the different geographical areas.
Target 6	<p>Specific targets in the Work area 13: Research and innovation</p> <p>Promote and back up scientific research on biodiversity and on functioning of ecosystems. (Aichi target 19)</p>	<p><i>Priority measures:</i></p> <ol style="list-style-type: none"> 1. Create operational databases and dedicated portals to make steering policies possible, provide up-to-date figures for environmental assessment procedures, enhance and disseminate knowledge, and increase the level of biodiversity awareness.

EU Biodiversity Strategy 2020	IT National targets	Related strategies/action plans/measures
	Collect data on biodiversity by implementing the monitoring, in order to implement the related indicators. (Aichi target 19)	2. Develop global systems for exchanging scientific knowledge and supporting cooperation among countries, relevant international organizations, research institutes and NGOs to further global monitoring of biodiversity
Target 6	<p>Specific targets in Work area 14: Education, information, communication and participation</p> <p>Reinforce education, information and communication role as public awareness tools from biodiversity matters. (Aichi target 1,17)</p> <p>Improve information, training and public awareness degree on importance of biodiversity among policymakers, teachers and public manager. (Aichi target 17,18)</p>	<p><i>Priority measures:</i></p> <ol style="list-style-type: none"> 1. Make all information on Biodiversity clear, accessible and comprehensible. 2. Introduce Biodiversity education in academic programs. 3. Foster sharing and exchange of good practices among subjects the field of education for environmental sustainability and Biodiversity conservation.
Target 6	<p>Specific targets in Work area 15: Italy and global biodiversity</p> <p>Contribute to enhancing the effectiveness of international governance for Biodiversity and ecosystem services to implement the CBD on a global level. (Aichi target 17,20)</p> <p>Increase, in real terms, the financial resources allocated to projects that directly foster Biodiversity and drastically reduce the impact that international actions and exchanges have on Biodiversity and the ecosystems on a global scale. (Aichi target 17,20)</p>	<p><i>Priority measures:</i></p> <ol style="list-style-type: none"> 1. Foster international cooperation projects in third countries to eradicate poverty and preserve biodiversity. 2. Develop report on circular economy and efficient use of resources. 3. Develop indicators to measure and monitor the circularity of the economy and the efficient use of resources.

2.1.3 Choice of targets to focus the national case studies, and justification

Although information related to all strategy targets is provided in the following subchapters, special attention has been dedicated to gather information related to Target 2 and 4.

The choice of those targets to focus the Italian case study is mainly due to the strong need to promote ecosystems restoration, green infrastructure and soil protection in the territory and the request to address marine management issues in the Mediterranean coasts.

Soil and land are essential ecosystems that deliver valuable services such as the provision of food, energy and raw materials, carbon sequestration, water purification, nutrient regulation, pest control, and support for biodiversity and recreation. In Italy, land and soil continue to be degraded by a wide range of human activities, often combined with other factors. An evident impact of the transformations of the landscape due to land consumption results from the fragmentation of the territory, a process that generates a progressive reduction of the surface of natural and semi-natural environments and an increase in their isolation. More than a third of the national territory in 2019 was classified as highly or very high fragmentation areas with an increase, compared to 2012, of more than one percentage point for both classes⁶⁴⁸.

Marine biodiversity is decreasing. The loss of this great value represents one of the major Italian environmental problems. Every year, processes such as the loss of coastal habitats, pollution, over-exploitation of natural resources and global warming threaten marine biodiversity in an ever deeper and more irreparable way. The Mediterranean, due to its wealth of biodiversity, is one of the most important ecosystems in the world but phenomena such as the increase in average annual temperatures, marine litter and unsustainable fishing practices are drastically altering its flora and fauna.

2.2 Country-specific biodiversity target focus

2.2.1 Effectiveness

Overall progress towards the Biodiversity Strategy

The Italian NBS adopted in October 2010 constitutes an instrument for integrating the conservation and sustainable use of natural resources into national sector policies and covers the period from 2011 to 2020⁶⁴⁹. To analyse the progress towards the achievement of the NBS strategic objectives and specific goals in all work areas, a report on the implementation of the strategy is issued every two years. To evaluate the effectiveness of initiatives and their progress, a set of indicators is used for the assessment of the measures taken in achieving desired outcomes. The preliminary set of hypothesized indicators included 10 indicators aimed at representing and evaluating the state of biodiversity and 30 indicators aimed at assessing the effectiveness of the actions carried out by the country to achieve the objectives of the strategy⁶⁵⁰.

The Italian Ministry of Environment also elaborates a set of indicators to collect data on biodiversity, which can be related to the international and European biodiversity strategies. These indicators (status and evaluation indicators) have been used by the Ministry and elaborated from decades by the Italian National Institute for Environmental Protection and Research (ISPRA). The indicators are embedded in

⁶⁴⁸ https://ec.europa.eu/environment/soil/index_en.htm

⁶⁴⁹ 6th National report to the CBD - Italy (Convention of Biological Diversity, 2019)

⁶⁵⁰ https://www.minambiente.it/sites/default/files/archivio/allegati/biodiversita/snb_set_preliminare_indicatori_strategia.pdf

the model DPSIR (Drivers, Pressures, State, Impact and Response) (Survey inputs from a national farmers association. The work achieved by the Ministry is remarkable and fully compatible with both the EUBS2020 and the Convention on Biological Diversity (CBD). Specific monitoring of the implementation of the strategy was carried out using such indicators⁶⁵¹.

The taken measures have allowed to implement an important number of systemic and transversal actions to strengthen coordination between public administrations for biodiversity conservation, but they have been partially effective⁶⁵². In the first two years (2011-2012), starting point of the Strategy, the initiatives implemented were almost completely absent and there was a great lack of information and priorities necessary for the implementation process⁶⁵³. In 2015-2016 the status of implementation of priorities in the 15 working areas of the NBS evidenced an overturned situation: activities in progress were predominant (59%) with an already defined implementation process, initiatives not started were extremely low (0.5%), various priorities were completed (7.5%) and there were different activities with implementation processes to be defined and various information gaps (9%)⁶⁵⁴. In 2017-2018 there was progress in almost all work areas compared to the previous two years leading, in some cases, to the achievement of environmental objectives. The status of implementation of priorities shows an increase in ongoing activities from 59% in the third NBS evaluation report to 60.80% in the fourth report. The initiatives not started are extremely low (0.5%), while an increase in the implemented activities was registered, reaching 21.60%⁶⁵⁵. The high percentage of activities in progress (60.80%), highlights the significance of the actions correctly implemented to achieve the objectives of the NBS.

Some obstacles related to the taken measures emerged: limited financial resources, non-homogeneous levels of the initial datasets and not sufficient commitment of all institutional levels to achieve the NBS objectives⁶⁵⁶.

Key success/failure stories on the implementation of the Biodiversity Strategy in MS

Target 1

The multi-stage process of Special Areas of Conservation (SACs) designation has advanced involving shared agreements between the State and Regions. Databases for Appropriate Assessment (AA) procedures and Natura 2000 sites management have been created at regional level⁶⁵⁷. Over recent years, data from monitoring programmes carried out by scientific societies, institutions and amateurs are increasingly converging and being organised in georeferenced and expert validated databases, at both local and national scales. However, the two sub-objectives of objective 1 of the EBS2020 have not been achieved⁶⁵⁸, indeed terrestrial and inland water species/habitats show a still critical situation for both species and habitats. The number of populations remaining unknown in the short-term trend is still high due to lack of information. Funding for the management of Natura 2000 sites appears inadequate in terms of both economic and administrative and technical burdens.

⁶⁵¹ <https://www.minambiente.it/pagina/strategia-nazionale-la-biodiversita>

⁶⁵² Mid-term review - Third period (2015-2016) Report on the implementation and efficacy of the Strategy (MATMM, 2018)

⁶⁵³ First period (2011-2012) Report on the implementation and efficacy of the Strategy (MATMM, 2014)

⁶⁵⁴ Mid-term review - Third period (2015-2016) Report on the implementation and efficacy of the Strategy (MATMM, 2018) and Second period (2013-2014) Report on the implementation and efficacy of the Strategy (MATMM, 2016)

⁶⁵⁵ Fourth period (2017-2018) Report on the implementation and efficacy of the Strategy (MATMM, 2020)

⁶⁵⁶ 6th National report to the CBD - Italy (Convention of Biological Diversity, 2019)

⁶⁵⁷ <https://www.sivic.servizirl.it/vic/#!/homePublic>

⁶⁵⁸ Final Report on the implementation of the national strategy for Biodiversity by 2020, currently being prepared by MATMM

Target 2

Numerous actions of active protection with demonstrative value have been implemented to maintain and restore habitats and species by natural parks, provincial and regional administrations. At a national level, regulations and studies aimed at biophysical and, secondarily monetary, ecosystem services have been particularly important to stimulate projects aiming to improve the status conservation of ecosystems. At local level, thanks to European funding projects (H2020, LIFE), many Italian Municipalities have developed projects of urban regeneration, greening, urban forestry, also in collaboration with public and private organizations and stakeholders. However, the unsuccessful implementation of actions for preserving ecosystems and their services is mainly related to the insufficient budget needed for restoring degraded ecosystems. The main activities are developed in the protected areas but in urban areas the restoration of degraded and contaminated areas is very difficult. A further difficulty for the creation of green infrastructures in historical city centres is linked to the constraints on protected historical assets.

Target 3

There is a slight improvement in the actions taken in the 2nd pillar of the EU Common Agricultural Policy (CAP) to halt biodiversity losses in arable farmlands mostly due to the large increase and CAP support to organic production (Italy is the 4th EU organic producer according to EUROSTAT statistics), less usage of inputs (especially PPs and fertilizers), investments for environmental purposes such as the building of dry stone walls, buffer strips and ponds close to the agricultural sites. The implementation of coordinated projects has led many farmers to increase ecological connectivity through rural development interventions. Many interventions to protect agrobiodiversity were financed by the European Agricultural Fund for Rural development (EAFRD) at regional level (In Italian: Programma di Sviluppo Rurale (PSR)). However, agriculture is still one of the main threats to biodiversity⁶⁵⁹. In fact, the general state of health of agroecosystems is not satisfactory in the country and the situation is particularly worrying in the agricultural systems of the plains. Despite the attempts to raise awareness of the agricultural sector on agrobiodiversity issues, the approach to agriculture and animal husbandry remains marked by an intensive and specialized model, that is not very suitable for the prevalently mountainous and hilly context that distinguishes Italy. Cross compliance is too mild and not sufficient to guarantee the protection of species, ecosystems, water quality and protection of the soil ecosystem.

Target 4

The Common Fisheries Policy in recent years has highlighted particular attention to the conservation of species and habitats, while the European Maritime and Fisheries Fund (EMFF) (In Italian Fondo Europeo per gli Affari Marittimi e la Pesca (FEAMP)) provides measures for the replacement of fishing gear with other less impacting ones and interventions for the conservation of marine SCIs with the contribution of fishermen. Interventions for the purchase of devices for the mitigation of interactions with protected species are also financed. However, the failure in achieving target 4 is demonstrated, in some cases, from the poor verification of the application of the rules by the Member States, and in other from the real difficulty in respecting too stringent and therefore substantially inapplicable rules by the fishing operators. The lack of common rules both for European and international vessels in international in the Mediterranean Sea is leading to economic and biological difficulties that makes null and void the efforts undertaken to introduce more sustainable fishing practices and healthier seas.

⁶⁵⁹ The final report on the implementation of the national strategy for Biodiversity in 2020, currently being prepared by MATTM

Target 5

Since 2016 there has been a regulatory and procedural process focus to the application of the European Regulation no. 1143/2014 on the provisions aimed at preventing and managing the introduction and spread of invasive alien species that started from the approval of Legislative Decree 230/2017. At local level, interventions for the control/eradication of alien species in marine and land area have been carried out, when possible, following the national guidelines for the management of invasive alien species of European Union interest. Although recognizing the relevance of both the European regulation 1143/2014 and the legislative decree 230/2017 in giving precise indications to counteract the spread and expansion of invasive alien species, they do not provide practical tools to rely on. Moreover, the communication of what the adoption of the regulatory instruments entails for citizens has not been made, and insufficient actions are being taken towards the legal trade in animals and plants.

Target 6

Various information and awareness campaigns have been promoted on the conservation of genetic resources and fair distribution of the benefits. Numerous projects that go in the direction of global environmental improvement have been carried out at national level, but a comprehensive long-term planning is missing. This gap is mainly linked to lack of coordination, consistency, efficiency in managing protected areas.

Evidence of successful implementation of focus targets

Target 1

Nature 2000 network management database, useful framework for organizing standardized conservation measures and essential element for designing the Special Areas of Conservation, is maintained and updated;

Seven issues of Red Lists of Italian fauna and flora species have been published from 2014 to 2018 as part of the IUCN Red List National Programme;

Protected areas system to achieve the long-term conservation of nature with associated ecosystem services and cultural values has been established: the Italian protected areas, together with the Natura 2000 network, covers 21% of land area and 19.1% of marine area (Interview with a public authority);

The first Report on synergies between Natural Capital and Cultural Capital in the National Parks, demonstrating the crucial role of protected areas play for a sustainable economic development, has been developed;

Reports have been produced every 6 years within the Habitat Directive (92/43/CEE) and Bird Directive (147/09/CE) giving an important overview on conservation status of species and habitats;

The policy document containing "Guidelines for the identification of additional specific objectives for the areas designated for the protection of habitats and species for which water quality is important for their conservation " has been developed by MATTM and ISPRA experts. This document is aimed at harmonization on a national scale the elaboration of the local River Basin Management Plans, regarding sustainable use of Community surface and groundwater (Survey inputs from a national public research institution);

After the infringement case n. 2015/2163 (only 18% of Sites of Community Importance (SCIs) were designated as SACs by the six-year deadline mandated by the Habitat Directive (HD), the Ministry of the Environment (MATTM) and Regions have accelerated the SAC designation process. As a result, by September 2020, 2,278 of 2,347 SCIs (97%) had been designated as

SACs⁶⁶⁰. For all of them general and specific conservations measures have been adopted. Moreover, for more than 90 % of their habitats, conservation measures have been identified and taken (Survey inputs from an environmental company);

ISPRA, on behalf of MATTM, published a standardized protocol for monitoring of conservation status of species and habitats. Those guidelines enable the collection of harmonised data at a national level for terrestrial and freshwater species and habitats, through standardised methodologies, improving the monitoring and reporting of the EU nature law mechanism and making it more consistent and up-to-date (Survey inputs from an environmental company). To this end a specific portal for Nature Directive reporting has been set up⁶⁶¹;

An example of national database for monitoring on birds is www.ornitho.it, a platform that also hosts the databases of other animal taxa (e.g. dragonflies, amphibians, reptiles, marine and terrestrial mammals) and specific monitoring programmes on rare and alien species (Survey inputs from an environmental company);

New standardized monitoring⁶⁶² programmes established on Species Directive have been introduced as a fundamental way to achieve objectives by using replicable and consistent methods (Survey inputs from a research institution);

Of the various species groups, mammals and fish have shown the most frequent improvements in conservation status because of measures taken. A link between restoration measures (mainly promoting the population growth or restoring the species' habitats) and positive trends in global conservation status assessments has been recorded for some species or species groups, for example: large carnivores such as the Brown Bear (*Ursus arctos*), Grey Wolf (*Canis lupus*), with depleted populations and among insects saproxylic beetles (Survey inputs from an environmental company);

Networks such as the Information, Education and Environmental Education INFEA system with its territorial organizations (Local Education Authority (LEA), Environmental Education Centres - (CEA)), the National Coordination of the local Agendas 21, the Parks and Protected Areas networks and Environmental Associations have been developed to contribute to sharing experiences and building both nationally and locally relations and partnerships⁶⁶³;

In Calabria region, 100% of the 178 SCIs have been designated as SCAs and, for them, specific conservation measures have been adopted (Survey inputs from a regional authority);

In Trentino, the "Networks of reserves"⁶⁶⁴ were introduced as a new way of managing and enhancing the Natura 2000 network that converts the concept of ecological network into institutional terms. It represents an interconnected system of habitats, whose biodiversity is to be safeguarded by creating and/or strengthening connections and exchanges between protected areas and isolated natural elements, thus counteracting fragmentation. The Reserves Networks have seen a strong implementation with the LIFE11/NAT/IT/000187 'TEN' - Trentino Ecological Network Project, which has encouraged their activation, also helping to identify the map of hotspots of floristic and faunal biodiversity located beyond outside Natura 2000 areas, functional to the completion of a coherent ecological network (Survey inputs from a provincial research entity and a provincial authority).

⁶⁶⁰ <https://www.minambiente.it/pagina/sic-zsc-e-zps-italia>

⁶⁶¹ www.reportingdirettivahabitat.it

⁶⁶² Oberosler et al. 2017 Mammalian Biology 87 (2017) 50-61

⁶⁶³ 6th National report to the CBD - Italy (Convention of Biological Diversity, 2019)

⁶⁶⁴ Provincial law n. 11/2007, art. 47

Target 2

The annual reports on the state of natural capital in Italy, direct consequence of the Law n.221 of 28 December 2015 on natural capital, have been elaborated primarily to orient both to the characterization and evaluation of the state of natural capital and to the progressive definition of models and methods for the quantification of the Ecosystem Services (ESs) (Survey inputs from a national public research institution). The first Report on Natural Capital (2017) included the cartography of ecosystems, the assessment of their preservation state and methodologies for estimating and assigning a monetary value to Natural Capital. The second Report on Natural Capital (2018) introduced important information on impact of climate change on the ecosystems and ecosystem services and the main elements of pressure on the assets of Natural Capital (consumption of soil and the fragmentation of natural and semi-natural ecosystems on a national and eco-regional scale) (Survey inputs from a national public research institution);

At the local level (administrative regions), maps have been produced identifying territories with a low level of conservation, where interventions to restore ecosystems are scheduled or planned (surveys inputs from regional authorities);

The fifth Report on soil consumption in Italy has been published in 2018 providing an updated picture of the transformation processes of the territory that continue to cause the loss of the soil and its functions and related ecosystem services (Survey inputs from a national public research institution);

Numerous projects aimed at maintaining and restoring ecosystems are underway to improve the conservation status of habitats and species, especially related to rivers and stream ecosystems and wetlands from the local to the national level. Concrete examples of local projects financed by European funding are:

H2020 Urban Green Up project (<https://www.urbangreenup.eu/>) developed by the Municipality of Mantua with replacement of trees and creation of green urban areas in the city centre (Survey inputs from a regional public association);

GAIA Urban Forestry LIFE project (<http://lifegaia.eu/>) developed by the Municipality of Bologna with local private organizations for urban forestry represents a consolidated tool of public-private partnership. The aim of GAIA project is to face climate change by planting trees directly in the municipal territory (Survey inputs from a regional public association);

Veneto ADAPT LIFE project (<https://www.venetoadapt.it/>) developed in the Veneto Region area by the Municipalities of Padua, Treviso, Vicenza, Union of Medio Brenta Municipalities, Metropolitan City of Venice, for the implementation of Adaptation Plan and pilot interventions for the re-naturalization of rivers in urban areas (Treviso and Vicenza) and urban trees planting in the Basso Isonzo River Park (Padua) (Survey inputs from a regional public association);

The Soil4LIFE Project (<https://soillife.eu/>) focuses on promoting the sustainable and efficient use of soil in Italy and Europe by maximizing the provision of ecosystem services (including productive ones) without worsening and, where necessary, improving the soil matrix in the chemical, physical and biological properties that enable it. The project includes a set of actions focused on training activities and awareness campaigns that promote sustainable land use which is also connected to biodiversity (Survey inputs from a national farmers association);

The Life project “Sic2Sic” has been carried out to promote a conscious and active citizen’ participation to the protection of nature. It tracks a network of connections among 169 Natura 2000 sites, by cycling 6000 km in 7 regions representative of Italian biodiversity.

In Trentino, thanks to PSR 2014-2020 funds - operations 443 and 441 focus on the recovery of habitats in a regressive phase and the restoration of ecological connectivity - interventions for habitats recovery were financed, in addition to the construction of pools and underpasses for amphibians (Interview with a civil and social organization);

In Trentino, active protection actions mainly managed by the provincial administration, have been implemented for the restoration of degraded habitats and for the protection of community and local species (Survey inputs from a Provincial authority);

In Calabria region, active protection interventions were carried out on 52 SACs (8 marine and 44 land). Considering that the degraded sites at the regional level are mainly those belonging to the ecosystem types “marine and coastal waters” and “rocky habitats, dunes and low-intensity vegetation”, the restoration of ecosystems is above the 15% set by target 2 (Survey inputs from a regional authority);

In Lombardy region, the project Park of San Colombano (Suzzara, Mantua) along the Po which has allowed the Municipality to define a project, started about 25 years ago, acquiring concessions for state-owned land, planting over 300,000 trees and autochthonous shrubs, and restoring some wetlands of the old course of Crostolo. Today the Park is among the widest riparian woods of the Po and is an area accessible to the population and local associations (Survey inputs from a national public research institution).

Target 3

Rural Development Programmes for the period 2014-2020 were approved in 2015 and within the “Natura 2000 and Rural Development” programme, various projects and initiatives on agriculture and its relationship with biodiversity have been developed;

The Strategic Plan for Innovation and Research in the Agricultural, Food and Forestry Sector for the period 2014-2020 was published in 2014;

During EXPO 2015, important attention was given to the link between food and biodiversity. In particular, the pavilion “the biodiversity park” was dedicated to the enhancement of the natural heritage and biodiversity of natural protected areas, including the experiences and excellences of organic farming in Italy;

The event EU Natura 2000 Day was promoted in 2018 by the CREA (Council for agricultural research and analysis of the agrarian economy), the Ministry of Agriculture, Food and Forestry Policies (MIPAAF) and the Ministry of the Environment to promote meetings and idea exchanges among relevant national and regional stakeholders on the themes of Natura 2000 and biodiversity, protected areas and sustainable agriculture;

The Mountain Agriculture Forum was organized in 2017 by the National Rural Network 2014-2020 led by the CREA and the MIPAAF to promote a co-creation and sharing of proposals for sustainable development of mountain areas.

Guidelines for conservation and characterization of plant, animal and microbial biodiversity of interest for agriculture was elaborated in 2012 from INEA (Istituto Nazionale di Economia Agraria) with the contribution of the MIPAAF;

Natura 2000 measures showed in the period 2017-2018 a poor interest from the farmer’s perspective, but they were still valuable to enhance the overall biodiversity situation in Italy.

All the measures taken to avoid further biodiversity losses are currently ongoing and outcomes will be seen in the next years (Survey inputs from a national farmers association);

In Trentino, a participatory approach for planning interventions in support of agrobiodiversity (management of meadows rich in species, delayed mowing for the protection of the quail king, maintenance of hedges and walls dry) was financed through EAFRD funds (PSR 2014-2020 - operations 16.5.1 and 4.4.3), with the direct involvement of individuals and farms (Survey inputs from a Provincial authority);

In Calabria region, the agricultural area managed with the organic farming method has reached about 30% of the total Utilized Agricultural Area (UAA) in 2020, with 150,000 hectares of organic farming on approximately 450,000 hectares of regional UAA. Within the Natura 2000 Network, 50% of the UAA is managed with the organic farming method (36,000 hectares out of 70,000 hectares). In 2020 the "forest management plan" has been prepared for the entire public forest area. For private companies there is a requirement for areas above 100 hectares (Survey inputs from a regional authority).

Target 4

The first cycle of implementation of the Italian Strategy for the Marine Environment for the period 2012-2018 was published in 2012;

The case study on natural capital accounting in Marine Protected Areas was elaborated in 2014;

In the two-year period 2015-2016, new marine areas were included in the Specially Protected Areas of Mediterranean Importance list according to the Barcelona Convention, already including 10 Italian Marine Protected Areas;

The ISEA project (Standardized Intervention of the Effective management of marine protected Areas) has been implemented;

The Interreg-Med programme (2014-2020) has co-financed several initiatives that tackle the issue of marine litter. The Mediterranean Biodiversity Protection Community, co-financed by Interreg Med and the European Regional Development Fund and featured by PANACeA, is one of these networks and aims at ensuring harmonized approaches to provide transferable evidence-based solutions on this growing challenge in the region⁶⁶⁵.

Target 5

The approval of the European regulation 1143/2014 regarding invasive alien species, and its implementation in the Italian regulatory system through the legislative decree 230/2017, represented a significant step forward in the fight against alien species. For the first time there is a list of species subjected to maximum attention, the invasive alien species of European Union interest, that is constantly updated. The most positive aspect is that for each species, the national institutions provide the necessary documentation to understand the negative impacts they bring to elaborate national action plans (Survey inputs from a provincial research entity and national public research institution);

At a national level, ISPRA is drafting guidelines for the management of each invasive alien species of European Union interest (Survey inputs from a national public research institution);

At local level, even prior to the entry into force of the European Regulation 1143/2014, numerous Italian regions had defined and adopted the Regional Law of Blacklists of invasive alien species

⁶⁶⁵ <http://www.etc.uma.es/mediterranean-biodiversity-interaction-with-marine-litter-new-knowledge-base/>

- (primarily about plant species) that contains a higher number of species compared to the European Union interest list (Survey inputs from a national public research institution);
- Italy was among the first countries to introduce integrated pest control principles. After the first period of implementation, the new National Action Plan (NAP) for the sustainable use of plant protection products, envisaged by Directive 128/2009, was approved. Furthermore, the central and regional phytosanitary service is being updated and implemented, also to manage invasive alien species in an effective and timely manner (Survey inputs from a national farmers association);
- The Citizen Science project “MONitoring CSMON-LIFE” has permitted to activate campaigns on topics such as climate change, presence of alien species, protection of rare species and monitoring of environmental alteration;
- In Trentino, containment interventions of invasive alien species as well as the experimentation of fighting techniques were financed by PSR 2014-2020 funds operation 443. Through the Networks of reserves, investments were made in raising awareness and training about management of invasive diseases and their spread prevention (Survey inputs from a provincial authority);
- The EMFF also foresees interventions for the control/eradication of alien species in marine and lagoon areas. In some cases, as in the case of the blue crab *Callinectes sapidus*, the species can be used commercially and therefore the control of the populations can also take place through fishing catches (Survey inputs from a business association).

Target 6

- In 2015 and 2016, various information and awareness campaigns were promoted on the conservation of genetic resources and fair distribution of the benefits. In 2016 a workshop was organized to illustrate the contents of the Nagoya Protocol and the EU Regulation n. 511/2014, which was attended by both members of the institutions and the concerned public and private sectors;
- The web portal “NaturalItalia” has been developed to play a central role in the exchange of information among different sectors to contribute to the conservation and sustainable use of biodiversity in Italy. This platform has been used as a national infrastructure for the promotion and marketing of environmental tourism for the sustainable exploitation of the nation’s natural heritage formed by Biodiversity and by the Protected Natural Areas;
- A global network of standardized biodiversity assessment sites, called TEAM Network was created to fund measures to increase protection of these areas in relation to global biodiversity assets (Survey inputs from a research institution);
- Different electricity production companies collaborate with the bodies managing the protected areas to ensure that their activities, mainly concerning hydroelectric plants and their impact on water resources and noise, are compatible and sustainable for the environment and for the maintenance of its natural balance. Withdrawals and releases of water are managed in compliance with the concessions issued by the competent Authorities and with current legislation focus on protection of the ecosystem and protected species (Survey inputs from an Italian company);
- Different initiatives and projects (ATOPICA, VectorNet) have been carried out to study the links between health and biodiversity in the field of water, food, vectors, allergies and infective diseases;

The EDEN project: European competition for the development of sustainable tourism has been carried out and the new Rimini Paper for Sustainable and Competitive Tourism has been developed;

Informative infrastructures and network on biodiversity have been developed (NaturalItalia Portal and the National Biodiversity Network);

The document "Towards a circular economy model for Italy" was published in 2017 by the Ministry of the Environment, Land and Sea (MATTM) and the Ministry of Economic Development (MISE), with the aim of providing a general framework for the circular economy as well as defining Italy's strategic positioning on the issue;

The document "circular economy and efficient use of resources - Indicators for measuring the circular economy" was published in 2018 by the Ministry of the Environment and the Protection of the Territory and the Sea in collaboration with the Ministry of Economic Development and with the support technical-scientific of ENEA, with the aim of identifying indicators suitable for the Italian context to measure and monitor the circularity of the economy and the efficient use of resources (Survey inputs from a national public research institution);

International cooperation projects in third countries to eradicate poverty and preserve biodiversity have been carried out (Albania Project, Global Strategy for the Islands, BENIN/BURKINA FASO/NIGER/TOGO Project);

On the international front, many Memorandums of Understanding have been signed with several emerging countries to implement actions to mitigate and adapt to climate change;

TECUM project (Tackling Environmental Crimes through standardized approach) has been carried out as example of European and international effort which aimed to strengthen the fight against environmental crimes.

Evidence of unsuccessful implementation of focus targets

Target 1

Only 10% of habitats included in the HD is in a favourable status, while 47% and 39% of habitats experienced an unfavourable-inadequate and unfavourable-bad status respectively. As regards species, assessments show that 43% of species revealed a favourable conservation status, 36% an unfavourable-inadequate status and 16% an unfavourable-bad one. The most threatened species groups include fish (39%), amphibians (15%) and vascular plants (12%). Article 12 reporting on birds shows that 17% and 8.7% of breeding and wintering populations, respectively, declined over 2007-2018 period. Knowledge of marine taxa is still very incomplete, with 66% species having unknown trends⁶⁶⁶;

Terrestrial and inland water flora is in a favourable Conservation State (CS) in 43% of cases and unfavourable in 54% (inadequate 41%, bad 13%), the fauna is in favourable CS for 44% and unfavourable for 54% (36 % inadequate, 18% bad). Terrestrial and inland water habitats are found in CS that is favourable in 8% of cases and unfavourable in 89% (49% inadequate, 40% bad) showing a general negative trend compared to the previous reporting cycle⁶⁶⁷. The comparison between the last two reporting periods (2007-2012 and 2013-2018) shows a clear trend towards an increase in knowledge, with a reduction in the percentage of evaluations with unknown CS for all groups (Interview with a public authority);

As for birds, the checklist included 307 species, 336 different populations, of which 268 breeding populations, 56 wintering populations and 12 migratory populations. The reporting has shown,

⁶⁶⁶ Article 17 of national 2013-2018 report

⁶⁶⁷ IV report pursuant to Article 17 Habitats Directive

for the period indicated, that in despite of a certain number of breeding populations with a positive demographic trend (82, equal to 31% of the total number of breeding) or stable (41, equal to 15%) in the short-term, many other populations show a negative trend (59 populations, 22%)⁶⁶⁸. The number of populations for which, due to lack of information, the short-term trend remains unknown is still high (86, corresponding to 32%) (Interview with a public authority);

The reports regarding the Habitats and Birds Directives, with the annexed Standard Forms and Conservation Objectives and Measures, are extremely difficult to apply due to their excessive precision and request for data. Property of Italian Natura 2000 sites is often very complex involving numerous private owners and stakeholders, and this makes both their monitoring and the implementation of effective, precise and mandatory conservation measures very difficult (Survey results from a regional authority, a national farmers association an environmental company);

The monitoring and management of Natura 2000 sites by administrations is poorly implemented and too fragmented in actions (Interview with a public authority). Overall, monitoring is relatively complete only for some taxa (e.g. birds) and some habitats. Especially for invertebrates, data are incomplete or totally lacking, as monitoring programmes have only recently started and only for some taxa (e.g. Butterfly Monitoring Scheme in 2018). For some species of particular relevance in terms of the international importance of Italy's populations (e.g. Wolf, Brown Bear, Alpine Ibex and Apennine Chamois), there are ongoing monitoring projects, even if the degree of territorial coverage is sometimes incomplete (Survey inputs from a Italian company);

Moreover, the involvement of science underlying actions and strategies is still too limited. Despite the efforts made, the perception of ordinary citizens regarding the Natura 2000 network remains very poor, even if in recent years it seems to have improved;

Although the Ministry of the Environment has developed the "Mettiamoci in Riga" project to adapt the data provided by the various regional administrations to EC standards, it has never indicated, even in past years, a realistic and feasible line to follow for the different regions, but always looking for unattainable results⁶⁶⁹;

In Trentino, the provincial administration does not allocate sufficient funds for the monitoring of species and habitats, it becomes complex to verify their conservation status as well as the effectiveness of habitat recovery interventions in the regressive phase and restoration of connectivity. An update of the conservation measures is urgent to make them effective and clearly inserted in the provincial regulatory and sanctioning framework (Survey inputs from a provincial authority).

Target 2

The definition of monetary valuation / quantification methodologies for The Ecosystem Services (ESs) is still very recent. The uncritical application of monetary valuation methods can be dangerous especially in the evaluation of regulatory support of ESs. For a correct monetary evaluation, it seems necessary to overcome the approach whereby the monetary evaluation passes through an evaluation of the "willingness to pay" (Survey inputs from a national public research institution);

The restoration of open spaces (meadows) in the mountains in abandoned areas is subject to increased uncontrolled afforestation which requires urgent interventions to avoid an increase

⁶⁶⁸ Latest reporting pursuant to art. 12 of Directive 147/2009 / EC (period 2013-2018)

⁶⁶⁹ 6th National report to the CBD - Italy (Convention of Biological Diversity, 2019)

in the danger of fires, a reduction of the usability of the territory, a loss of landscape value and increased hydrogeological risks (Survey inputs from a regional authority);

The poor financial consistency led administrations to choose the actions to be implemented based on territorial and local priorities not in relation to biodiversity urgencies. A further barrier is the high fragmentation of ownership and difficult involvement of the private individuals for individual actions;

In Trentino, that is crossed by one of the main ecological barriers of the Alps, no investment has been made despite the focus that emerged from the Life + TEN project. Proof of this is that the population of bears, the result of the Life Ursus reintroduction project, still confined to the west of the Valle dell' Adige, without contact with dispersed individuals from Friuli Venezia Giulia who sometimes arrive in eastern Trentino (Survey inputs from a provincial authority and Interview with a civil and social association).

Target 3

50% of agricultural habitats are characterized by an inadequate state (U1), followed by 40% with a bad one (U2)⁶⁷⁰. Percentage breakdowns of the overall state of conservation and of the trend were also drawn up for natural and semi-natural grass formations. These formations are characterized by an unsatisfactory state of conservation, divided by 51% in an inadequate state (U1) and 46% in a bad state (U2). The evaluations with a favourable status (FV) were found to be very low, equal to 2%. Nationally, the trend is decreasing for 46% of the assessments, followed by a stable trend for 30% of the cases (Interview with a public authority);

As for birds, while showing a moderate decline in all ornithological areas, the decline is more evident for the three ornithological areas associated with the most important agricultural systems, namely the plains, the Mediterranean pseudo-steppes, and the hills. In the plains there is a decrease of 45%, compared to 26% for the hills and 10% for the Mediterranean pseudo-steppes (Interview with a public authority);

The capability of the CAP in contributing to reduce arrest biodiversity loss is limited due to the fact that often incentives for the agricultural production are given without considering their impact on biodiversity (Interview with a public authority). Although the work done between the MATTM and the MIPAAF, many criticalities remain in the CAP implementation: access difficulties for small farmers who are often the most virtuous in the protection of biodiversity; non-activation by the Regions of the 2000 Natura allowance measures; too low premium ceilings; too much bureaucracy; unclear rules for access to allowances (in relation to cross-compliance (Survey inputs from a national farmers confederation);

Leaving the implementation of non-productive investments for biodiversity to the initiative of the individual does not prove to be a winning strategy: investments for biodiversity remain few and small from the point of view of investments, not sufficient to make a difference. Despite having already managed to share some specific biodiversity aspects within the PSR actions, a longer time horizon is needed to be able to share and plan specific actions within the agricultural sector in Italy;

Unfortunately, even if the use of high-risk phytosanitary products fell critically in three decades, the alternative methods such as Integrated Pest Management (IPM) were not followed up properly by the Italian government and is still a framework which should be better managed (Survey inputs from a national farmers association);

⁶⁷⁰ IV National Report on the implementation of the Italian Biodiversity Strategy

Due to the lack of up-to-date data and precise and punctual indicators, it is not possible to estimate correctly and completely what has already been achieved by agriculture in terms of the environment, biodiversity and ecosystem protection. There are no reliable indicators to measure the results and impact of direct payment schemes and rural development programs in relation to biodiversity⁶⁷¹;

The few agri-environmental indicators available to monitor how environmental issues have been integrated into the CAP are not always updated despite they are very important to measure progress in agrobiodiversity. Among the indicators with no data available or data related to 2010 or previous years can be found: 1) change in land use; 2) risk of land abandonment; 3) genetic diversity; 4) agricultural land of high natural value; 5) exceeding the critical load for nitrogen; etc. Among indicators that are, at the latest dated back to 2014 or previous years there are: 1) agro-environmental commitments; 2) land cover; 3) agriculture with a high natural value; 4) water extraction in agriculture; 5) crop diversification; etc. (Survey inputs from regional authorities);

As regards the forest habitats included in the HD, the macro-category "Forests" includes 40 forest habitats distributed in the Alpine (ALP), continental (CON) and Mediterranean (MED) biogeographical regions. The percentage distribution of the overall conservation status in the different biogeographical regions shows a general unsatisfactory situation, particularly evident in the Alpine region. In the continental and Mediterranean regions, on the other hand, there are favourable conservation status assessments of 14% and 11% respectively. Overall, the forest area located in Natura 2000 areas went from 29.74% in 2011 to 30.06% in 2016, a positive trend also shows the national area certified according to the Sustainable Forest Management schemes (Survey inputs from regional authorities and a national farmers association).

Target 4

Rules of fishing practices are considered too stringent and substantially inapplicable by fishing operators, which find extreme difficulties in respecting them besides reducing their annual income linked to the closure of some marine areas (Interview with an association of fishing enterprises);

The poor verification of the application of the rules is certainly a relevant gap in making fishing more sustainable and seas healthier (Survey inputs from a business association);

Despite the efforts to generate evidence on the quantity and type of litter (floating marine litter, beach litter and seabed litter), knowledge gaps on the impacts of marine litter on marine life, not to mention the whole ecosystem functions, and the final implications for human health, are still to be filled (Interview with an association of fishing enterprises);

Among the evidence of unsuccessful implementation of target 4 there are: 1) the case of the continuous regression of Posidonia meadows and 2) the enormous extension of the SCIs identified in Tuscany and Veneto/Emilia Romagna for the protection of bottlenose dolphins and sea turtles (Survey inputs from a business association).

Target 5

Operational difficulties to combat invasive alien species are experienced in marine areas given the size of the problems. The presence of alien species in the Mediterranean is linked to both climate change and different forms of pollution (including the pollution caused by ballast

⁶⁷¹ Special Report of the EU Court of Auditors "Biodiversity in agricultural land: the contribution of the CAP has not stopped its decline"

waters) problems of a higher level compared to a sectorial strategy (Survey inputs from a business association);

The spread of invasive alien species must be tackled not only through the identification of the most important species through the EU regulation but also with widespread contrasting actions that provide for a varied range of measures: from the definition of a sanctioning regime to the overcoming of commercial logics that lead both to the continuous search for exotic species for gardening and to the spread of commercial cultivations of invasive exotic species (Survey inputs from a national trade union and a national public research institution);

Among the criticalities it must be added the failure to define a list of exotic species of national interest (as required by the European Regulation) on which Italy has not yet legislated (Survey inputs from a national trade union);

Japan Polygon was not included in the list of invasive species. The fight against these species requires more drastic solutions, through the inclusion of procedures aimed at containment in the sectorial regulations (e.g. management of aggregates, earth movements, etc.). The control of exotic animal species is even more complex, also for ethical reasons, to be overcome by defining as soon as possible killing and elimination protocols (Survey inputs from a provincial authority).

Target 6

A consistent and efficient long-medium term planning is required at national level in a territory with a surface of protected area equal to 10.5%. This process needs to involve different cross-sectorial players to execute active protection actions (Survey inputs from a Provincial authority).

Unexpected or unintended consequences of implementing focus targets

Target 1

Positive unexpected consequence attributable to the implementation of the EBS2020 have included that:

The MATTM, requested by the Parliament to the Government, published in 2016 its first catalogue of environmentally friendly subsidies and environmentally harmful subsidies as part of a general effort of the Country aiming to design ambitious and efficient environmental and economic policies (Survey inputs from an environmental company);

Italy has placed restrictions on its subsidies for solar energy to ensure that photovoltaic cells in rural areas are placed in a way that safeguards local agro-food traditions, biodiversity, cultural heritage and landscapes (Survey inputs from an environmental company);

Italy's budget law of 2018 introduced a 'green bonus' providing tax deductions for properties that include significant green cover in urban environments⁶⁷² (Survey inputs from an environmental company).

Target 2

As positive consequences, the NBS, coherently with the EBS2020, has given impetus to the creation of tools and initiatives for the enhancement of the national Natural Capital, as the base for the development of a green economy. Moreover, the NBS stimulated the need of setting up environmental accounting systems and promoted the integration of biodiversity into the

⁶⁷² Global biodiversity outlook: <https://www.cbd.int/gbo/>

programming tools, in the implementation of measures, in territorial planning, as well as specific legislative instruments for the protection of nature (Survey inputs from an environmental company);

However, there are both direct and indirect negative unexpected aspects related to target 2 to consider such as: 1) the increasing damage from wildlife - constraints that turn into competitive disadvantages on the market for the farms that fall into protected areas or Natura 2000 sites, 2) lack of professional figures in Public Administrations able to work on the planning and implementation of measures, 3) lack of knowledge of the Natura 2000 system by farmers and operators residing in the sites, 4) lack of knowledge by involved bodies about the role of agricultural enterprises within the sites, 5) lack of communication initiatives highlighting the benefits of Natura 2000, 6) insufficient promotion of dedicated PSR measures, 7) lack of a tool or a methodology for calculating compensation, 7) difficulty in accessing funding procedures and long times to receive contributions (Survey inputs from a national farmers confederation);

Limited interventions from EC in checking the sustainability of projects approved from administrations in despite of the negative opinion from the competent offices in the matter of impact (Interview with a Civil and Social organization).

Target 4

The introduction of community rules limiting fishing only for European vessels in international seas is making Italian vessels no longer competitive. In fact, third countries vessels fish in the Mediterranean (within the international borders) when it is forbidden for European ones;

Fishing rules set by Italian Ministry of Agricultural Policies about the permission to fish only during certain days of the week are creating inequality even between Italian and Croatian fleets. In fact, in the Adriatic Sea the Italians cannot fish in specific days of the week while the Croatians can;

The positive role of fishermen in collecting garbage from the sea is only partially recognized. Once waste are rescued from the sea, fishermen become responsible for their disposal and the related cost. There is a lack regulations about this topic besides a lack of structures located in ports to collect waste rescued by fishermen (Interview with an association of fishing enterprises).

Target 5

The obligation to report the possession of invasive species of European Union interest has favoured their abandonment in the wild by the owners, who did not understand the reasons for this measure (Survey inputs from a provincial research entity).

Key factors which have contributed to achieving objectives

Evidence relating to all Targets

Financial contributions received by Italy through the EU financial instruments (LIFE+ instrument and Horizon 2020, previously FP7) have been fundamental in promoting activities aimed at improving the state of marine and terrestrial species and habitats in Italy and to contribute to biodiversity related research projects (Survey inputs from an environmental company). Both instruments have also furnished an additional input to raising awareness of the importance of protecting biodiversity (Interview with an association of fishing enterprises and survey inputs from a business association).

Key factors which have hindered the achievement of objectives

Data to understand national progress towards EBS2020 is partially available and it is not sufficiently understandable to all stakeholders. Data flow should be faster and more efficiently disseminated. (Interview with a public authority and regional authorities);

The defined indicators used to monitor the national progress towards the objectives of EBS2020 are difficult to use. The NBS foresees every two years the elaboration of a report on the implementation and effectiveness of the strategy itself. To this end, a preliminary set of 10 status indicators and 30 effectiveness indicators proved to be difficult to use and, in many cases, brought the need to verify the achievement of the objectives and define the trends only with qualitative assessments instead of quantitative ones (Interview with a public authority). Aichi targets have clear indicators that should have been adopted, but this has not been done systematically (Survey inputs from a research institution). An indicator measuring the economic resources obligatorily destined to environmental protection is missing and this gap makes it difficult to understand how much it was allocated specifically to biodiversity preservation (Interview with a regional authority);

NBS incorporated stakeholder participation but not sufficiently. The elaboration of the strategy was preceded by a multi-stakeholders' consultation process. However, the actors' involvement in the development and implementation phases of the NBS was not sufficient. It would be necessary to increase participation and consultation with some stakeholders, especially in the private sector to increase the awareness of the greatest possible number of associations of categories about biodiversity issues and englobe their perceptions and suggestions when planning objectives, measures and actions (Interview with regional authority, a public authority and a civil and social organization);

Poor synergy between Regions and bodies managing protected sites. Coordination among the Italian bodies managing of protected areas at local level and regional entities should be improved (Interview with a public authority, a regional authority, a public authority and a civil and social organization);

The limited financial resources are the main barrier for an efficient and complete monitoring that currently is financed exclusively from the budget of the provincial administration as these kinds of initiatives cannot be financed by EAFRD (PSR at national level) or other EU/national funds (Survey inputs from regional authorities, national farmer association, national confederation of farmers, an environmental company, a provincial authority and a provincial research entity);

A more effective system to mobilise and track/monitor the use of financial resources for nature conservation coming from different funding programmes is needed. The items reported in the monitoring assessments should be consistent with those reported in the conservation

measures, to ensure a direct link between them and facilitate comparison tasks. In general, a methodology or scheme for reporting and Prioritized Action Framework (PAF) must be established in advance, so that the various administrations are able to define a program capable of integrating effectively with the European ones (Interview with a public authority, a regional authority, a public authority and a civil and social organization);

A more general barrier for achieving the objectives of the EUBS2020 is certainly represented by the Italian regulatory and planning structure which prevents effective strategic planning. Moreover, a general simplification of management and requirements procedures currently envisaged would be necessary, placing the focus on biodiversity in the strict and applicative sense (Survey inputs from an environmental company a regional authority);

Even if there is no evidence on that, it is important to highlight the fact that policies to be implemented need a factor of stability which the Italian framework cannot provide due to the changes in governments in the last years. This is certainly a hampering factor hindering the achievement of the objectives (Survey inputs from a national farmers association).

Target 1

The estimate of the available resources for the 2014-2020 period was lower than the regional financial needs for Natura 2000 (MATTM, 2017) (Survey inputs from an environmental company);

A more general barrier is the drastic cuts to public administration budgets at national, regional and local level, including those dealing with the environment. The reduction and almost elimination of provincial authorities, which are responsible for the environment, has greatly reduced their capacity to monitor protected areas within their territorial competences (Survey inputs from an environmental company and Interview with a civil and social organization);

There is a lack of standardized data on key species and ecosystems and a strong gap in time and capacities between studies and data management/use/interpretation/communication (Survey inputs from a research institution).

Target 2 and Target 3

There is an urgent need to proceed with the economic evaluation and recognition of the ecosystem services produced by farms through their activities;

Financial and organizational aspects (limited economic resources, lack of staff turnover and limited professional figures in the public administrations) are considered among the key factors hindering the implementation of the targets

The achievement of target 3 requires even greater synergy and coordination between policies for biodiversity and agricultural policies. Too often, regions are unable to finance measures aimed at biodiversity through the CAP, because they are too complex, or when available funding is not enough. On the other hand, many agricultural incentives are still aimed at intensive agriculture. It is necessary to introduce changes into existing rural development models;

An Italian Environmental Restoration Plan is lacking. It is necessary to promote a plan aimed at a greater "densification" to contrast the continuous consumption of land (the law on land consumption still must be approved in the Senate) otherwise it is extremely difficult achieving objectives in the current situation. The achievement of targets 2 and 3 is hindered by the impact of land consumption in Italy, which occurs also in protected areas, in areas restricted for landscape protection, areas with medium hydraulic hazard, landslide hazard areas and in seismic hazard areas (Survey inputs from an environmental company);

The late adoption of PAF and the lack of economic resources with a destination bound to environmental protection, have slowed down the achievement of the set objectives;

Among the causes that make achievement of targets difficult in agricultural areas causing a decline of biodiversity there is also to the simplification of the landscape, with the fragmentation of habitats and the significant threats to the species, such as the use of all categories of plant protection products: fungicides, insecticides and acaricides, herbicides, chemical inputs and agronomic practices using fertilizers;

The areas hosting the largest share of biodiversity are often highly required for their exploitation. For instance, the economic interests linked to winter tourism and ski lifts in the mountainous areas of Trentino are in antithesis with the achievement of the biodiversity objectives;

There is the need of integrating the National Forest Strategy to make it consistent with the objectives and guidelines of the EUBS2020 and the Green Deal to protect ecosystem services and forest biodiversity. Without a detailed forest planning that affects the entire Italian forest heritage (currently only 18% of the forest area is currently managed with this type of tools) would be difficult to promote an integrated and multifunctional management of public and private forests, which are fundamental to achieve forest biodiversity objectives (Survey inputs from a national trade union);

There is a need to identify adequate, easy to apply and understandable tools so that the objectives of the EUBS2020 and the NBS do not remain on paper, as it happened in large part for those of the previous decade (2010-2020) (Interview with a regional authority);

Monitoring could be improved in peri-urban areas that suffer from a presence of widespread urbanization which, in some way, compromises the potential ecological connectivity (Interview with a regional authority).

Target 4

In recent years, national legislation has tried to ensure sustainable fishing, and some fishing areas have been closed and strict rules -difficult to respect- have been introduced (Interview with an association of fishing enterprises). The limited involvement of relevant stakeholders such as the representatives of the companies, makes it challenging to have a real picture of the situation, which is far from the indications of the directives (Survey inputs from a business association);

The NBS delivered insufficient results not because of a lack of efforts from the operators of the fishing sector, but because the sea is a shared environment without real borders, and rules applied are extremely selective. Not all fleets are subject to the same laws and this leads to economic and biological difficulties that make efforts ineffective. Mediterranean tables (with African countries for example) should be organized from EC, to promote common recommendations and rules to achieve results in a common environment such as the sea (Interview with an association of fishing enterprises);

Only the vessels above 12 meters are georeferenced and subject to restrictions. There is no regulation to extend GPS to smaller vessels as well (Interview with an association of fishing enterprises).

2.2.2 Efficiency

Key evidence on the cost efficiency of the Biodiversity Strategy as a whole

A tracking system to evaluate the efficiency and efficacy of the NBS is not yet clearly designed and implemented for specific biodiversity measures. However, it is possible to have a picture of the state of implementation of the general objectives related to biodiversity, considering the expenditure allocated to achieve specific outputs⁶⁷³. The target relating to the doubling of financial resources related to biodiversity for developing countries was achieved⁶⁷⁴;

The resources allocated by the State to primary expenditure for environmental protection and for the use and management of natural resources amounted to approximately 4.7 billion euros in 2017, equal to 0.7% of the total primary expenditure of the national budget. Over the past few years, the volume of primary expenditure has been decreasing, from € 8.3 billion in 2010 to € 4.7 billion in 2017. However, it is interesting to note the different trend that involved the two individual items: on the one hand, the expenses for the protection of biodiversity (CEPA 6 “Protection of biodiversity and landscape”) have decreased and, on the other, the resources for the use and management of flora and fauna (CRUMA 12 “Use and management of wild flora and fauna”) record an increase. An important share of expenditure destined to the environment, more than half of the resources, were allocated to the “protection and remediation of the soil, subsoil and surface waters” (30.5%), “other environmental protection activities” (13.2%) and “biodiversity and landscape” (12.2%)⁶⁷⁵;

Under the European Regional Development Fund (ERDF), about € 241 million have been allocated in Italy for investments to reach the expected results 6.5 “Contributing to reverse the losses of terrestrial and marine biodiversity, including the biodiversity related with rural landscape, through restoring and protecting ecosystem services”; and 6.6. “Improving the standard of tourism supply and fruition in natural areas”. Within ERDF 2014-2020, measures supporting biodiversity are included. Most resources (€ 389.9 million for the whole 2014-2020 period) are allocated in the less developed Italian regions (south of Italy) and divided in three types of interventions: € 132.8 million for “085 Protection and enhancement of biodiversity, nature protection and green infrastructure”; € 125.9 million for “086 Protection, restoration and sustainable use of Natura 2000 sites” and € 131.2 million for “091 Development and promotion of the tourism potential of natural areas”⁶⁷⁶;

Under Rural Development Regional Programmes (RDRP), about € 1.9 billion have been allocated for the entire thematic objective (TO6) “Preserving and protecting the environment and promoting the efficient use of its natural resources”. TO6 includes resources for the achievement of other environmental results, such as: improvement of waste management, water management, etc. At the end of 2017 about € 1.6 billion was allocated under the RDRP for objectives related to the focus area 4a) “restoring, preserving and enhancing biodiversity, including Natura 2000 areas, and areas facing natural or other specific constraints, and high nature value farming, as well as the state of European landscapes;” this represents the 22% of total allocation for the whole 2014-2020⁶⁷⁷;

For the Operational Programme European Maritime and Fisheries Fund (EMFF), the amount allocated is € 215 million. The LIFE Programme (environmental and climate action sub-

⁶⁷³ 6th National report to the CBD - Italy (Convention of Biological Diversity, 2019)

⁶⁷⁴ Fourth period (2017-2018) Report on the implementation and efficacy of the Strategy (MATMM, 2020)

⁶⁷⁵ Ecorendiconto” published 2019 from the Ministry of Finance is dated concerning the financial year 2018 and reporting data on resource mobilization, expenditures made by Central Administration (Ministries) to biodiversity.

⁶⁷⁶ 6th National report to the CBD - Italy (Convention of Biological Diversity, 2019)

⁶⁷⁷ 6th National report to the CBD - Italy (Convention of Biological Diversity, 2019)

program) has financed a total of 132 projects in Italy from 2014 to 2017. In the same period the sub-program Nature and Biodiversity financed 26 projects⁶⁷⁸;

The biodiversity issue is related to many factors, which means that many funds are necessary to tackle it. From consultations emerged the need to improve, at national level, the allocation of specific resources for the implementation of the strategy enhancing the coordination between the various national and regional administrations, and at Community level improving the coordination between the different funds allocated for biodiversity;

Overall, the financial allocation from the PSR is not sufficient to cover the overall costs. Moreover, numerous priority initiatives (e.g., habitat and species monitoring) are not yet eligible for funding. In the fishing sector, the only funding was attributed to the Marine Protected Areas and to the offshore areas of the National Parks. There is no perception of what damage can be caused by the loss of biodiversity, and it is not clear what the consequences are, even in terms of sanctions by the European Commission;

Financial resources to be used in addition to the Multiannual Financial Framework - MFF 2021 -2027 of the European Union are needed ("Next Generation EU" fund is a possible example) (Survey inputs from a national trade union).

Key evidence of benefits

Target 1 and Target 2

The funds and actions aimed at the conservation of biodiversity and the restoration of ecosystems contribute to the maintenance of the rural landscape characterizing Italy with positive effects in terms of use of the environment (Survey inputs from a provincial authority);

The presence of large portions of protected natural territory in different regions in Italy has also favoured an enormous tourist development that impacts positively in creating job opportunities and specialization opportunities for local companies. In recent years, "green" tourism has grown considerably, favouring the birth of small family-run accommodation facilities in contexts not used to mass tourism and of farmhouses. By revitalizing rural contexts with high biodiversity losses, various activities can be organized such as experiential teaching for children that often have to use multimedia to understand these concepts (Interview with a Regional authority);

The employment (direct "green" jobs and also indirect ones) created in 2011 at national level, included: 98,585 people in national parks 1,565,677 people in regional parks and 633,831 people in Natura 2000 sites⁶⁷⁹ (Survey inputs from an environmental company);

The employment created in 2015 in Lombardy region⁶⁸⁰ included: 36,630 people in Natura 2000 areas corresponding to 1% of the Region and 5.8% of the total employed in the same areas at national level. Of these 17.3% worked in commerce, 15.1% in construction, 9.3% in catering and 8.2% in the housing sector. As for agriculture, 12.4% of the entire Lombardy area is represented by fields under the protection of Natura 2000, equal to 150,814 hectares. Of these fields, almost half, 44.1%, is used for pastures and meadows, 28.1% is represented by woods that refer to farms, 17.5% is used as arable land. A residual part is represented by greenhouses: 77 hectares, 0.11% of the regional total. Compared to the total number of farms present at the provincial level, those of the Natura 2000 municipalities represent 32%, with

⁶⁷⁸ 6th National report to the CBD - Italy (Convention of Biological Diversity, 2019)

⁶⁷⁹ Research on green employment linked to biodiversity (Unioncamere, 2020)

⁶⁸⁰ Lombardy LIFE project Gestire (2015)

peaks of 70% in the province of Sondrio, 47% in Mantua, 44% in Lecco and Varese (Survey inputs from an environmental company);

In Trentino, a socio-economic evaluation of the benefits deriving from the management of the Natura 2000 sites through the networks of reserves was carried out as part of action D2 of the Life + TEN Project⁶⁸¹. The main benefits detected are linked to the enhancement and promotion of the natural peculiarities of the territory, the support and development of small farms and sustainable tourism though proved to be very expensive actions for the competent Provincial Service (Survey inputs from a provincial authority and a provincial research entity).

Target 3

Investing in the conservation of agrobiodiversity means investing in the landscape, tourism, authenticity and uniqueness of the local product, but above all in the quality of life of local communities that live on agriculture and in agricultural contexts. Similar are benefits due to the actions aiming to protection of ecosystem services and forest biodiversity (Interview with a civil and social organization and survey inputs from provincial authority).

Target 4

Fishing better, in a more sustainable way, could give a positive result to the sector itself even, from a business perspective, since the reduction of available products would increase the product demand with the consequent increase in the price and income for fishermen. However, to make this mechanism possible is fundamental that craft fleets (also the international ones) respect the same rules in international seas (Interview with an association of fishing enterprises);

For the fisheries and aquaculture sector, if incentives for implementing good practices were available, the socio-economic impacts could be positive. Otherwise, the impact is negative as any measure implemented for the conservation of biodiversity has in the short-term an impact on fishing activities and therefore on the economy of businesses (Survey inputs from business association);

There are bans for the Italian vessels (that only can fish 5 days a week) that are not applied to fleets from other Mediterranean countries (e.g. Turkey, Libya, Tunisia, Algeria). This has negative repercussions on the income of the Italian fleets that are forced to sell a lower price in a not impartial international market. There is no social cushion to protect fishermen and the consequences of lost earnings fall entirely on companies (Interview with an association of fishing enterprises).

Target 5

- The fight against allochthon plants would have important positive repercussions on the management of the vegetation in the riverbed and on the stability of the banks besides preserving local biodiversity (Interview with a civil and social organization).

⁶⁸¹http://www.lifeten.tn.it/binary/pat_lifeten/monitoraggi_monitoring/LifeTEN_D2_Report_Versione_Finale_201807_02.1530537807.pdf

Key evidence of costs

Target 1

On key evidence of costs, the national reference is the PAF (Prioritized Action Frameworks) drawn up by the various regions. The preliminary estimate of fully implementing the EU Natura 2000 network in Italy (green infrastructures and species protection) for the 2014/2020 EU programming cycle have been reported on the CBD Financial Reporting Framework⁶⁸². Costs range calculated on an experimental basis on 11 PAFs range from € 1.8 to 2.5 billion. This implies annual costs ranging from € 267.6 to € 424.7 million, which corresponds to an average value of approximately €281 million per year, of which 46% refers to operating costs and the remaining 54% to one-time costs (Interview with a public authority);

Analysing the distribution of needs based on the types of measures required, it appears that most resources (65.5%) are allocated to the maintenance and restoration of habitats; on the other types of measures, the resources are equally distributed. From the analysis of the individual regional PAFs, a univocal and generalized need to find sufficient resources to implement habitat and species monitoring plans strongly arises. Those resources are necessary both for the purposes of European reporting, and to deepen the state of knowledge and acquire elements needed to address management interventions (Interview with a public authority);

As part of the Life + TEN Project, the PAF of the Autonomous Province of Trento was developed with an estimate of the costs for the management of the Natura 2000 Network in the province (Survey inputs from a provincial authority).

Target 2

Restoring ecosystems by providing biogenetic material typical of protected areas or any different rural area is expensive (Interview with regional authorities). This is especially true for plant species that are now normally, in a more economical way, imported from third countries but are alien and therefore potentially dangerous (Survey inputs from a regional authority);

The evaluation of the main ecosystem services provided by the soil and lost due to the new artificial coverings produces also potential economic damage that exceeds € 3 billion every year⁶⁸³, which still underlines the financial barrier as the main reason for its missing implementation.

Target 3

- Concerning the costs for implementing actions to achieve more sustainable agriculture and forestry, the figures for public expenditure in the second pillar of the CAP are: 1,026.38 billion spent for environmental agri-climate payments (corresponding to the 35% of the planned expenditure); 959.82 millions for organic agriculture (corresponding to the 32%); natural or other specific constraints (ANCs) amount to 976.60 millions spent (33%) (Survey inputs from a national farmers association).

Evidence of socioeconomic impacts

Target 1 and Target 2

Loss of habitats requires more and more resources for their recovery/improvement (Survey inputs from a Provincial authority). In addition, the failure in implementing the EBS2020 would have

⁶⁸² <https://chm.cbd.int/database/record/5BF16163-204D-9261-5172-EB83C1DA1226>

⁶⁸³ State of nature in the EU-Results from reporting under the nature directives 2013-2018 and Rapporto ISPRA sul consumo del suolo, dinamiche territoriali e servizi ecosistemici edizione 2020

created negative socio-economic impacts relating to job creation, investment, life quality and health impacts;

Often activities proposed in Natura 2000 sites that impact negatively on the conservation of biodiversity but create medium-sized economic interests are still carried out, even if the competent authority issues a negative opinion about them. Those activities certainly favour economic development but do not consider the ecosystem services provided by the natural component of the sites (Survey inputs from a provincial research entity);

There is a great consensus on potential economic damage resulting from a failure to implement the strategy for maintaining and restoring ecosystems, but the actions need to be shared and approved by both local administrators and private citizens. In fact, a territory could, for example, be made safer by adopting native grassland species for the stabilization of the slopes, thus preventing landslides (Interview with a regional authority).

Target 3 and Target 4

A decrease in biodiversity can affect companies and professional operators dedicated to specialized agriculture and aquaculture in addition to entrepreneurial figures, such as livestock breeders, fishermen, social cooperatives and NGOs, who can contribute to meet the needs between agriculture and landscape, fishing and sustainable sea, conservation and maintenance, biodiversity and ecosystem services. Figures such as researchers, technicians and public relations are indispensable for experimentation and for the dissemination of useful and beneficial interventions and practices (Survey inputs from a national trade union);

The failure of the implementation of the EBS 2020 in achieving more sustainable agriculture and forestry will: 1) increase human-wildlife conflicts related to lack of proper management or communication on wildlife (Survey inputs from a research institution); 2) cause poor management of protected areas; 3) impact the local socio-economy and 4) minimize or even ignore sustainable measures adopted by farms causing a loss of competitiveness towards other companies (Survey inputs from a national farmers confederation);

Failure in the dissemination of IPM techniques will cause a loss of soil quality due to likely economic losses that farmers would suffer for being not able to invest adequately to replace the current Performance Phosphate Products (PPPs) with low-risk substances. Biodiversity losses will likely lead to the abandonment of agricultural businesses, thus abandonment of the soil, which leads to degradation and repercussions on biodiversity, instead of sustainable soil management (Survey inputs from a national farmers association);

Increase in water purification costs, in hydrogeological instability due to the increasing waterproofing of the soil in specialized agricultural contexts and increase in the costs of treating health problems related to unhealthy contexts (high pesticide rate) are negative socio-economic consequences linked to EUBS2020 implementation failure in agricultural sector (Interview with a Regional authority).

2.2.3 Coherence

Coherence with the EU 2020 Strategy

Among the concrete examples of synergy between the Biodiversity Strategy targets and actions and other EU or related national policy objectives and implementation measures in Italy, these were detected:

Plans, strategies and measures dedicated to mitigating and adapting to climate change⁶⁸⁴;
Plans or strategies that promote sustainable agriculture (e.g. sustainable agriculture plans, organic farming, soil protection strategy)⁶⁸⁵;
Plans or strategies that promote the protection and sustainable management of forests⁶⁸⁶;
Flood protection plans that include ecosystem restoration / nature-based solutions, avalanche or landslide protection strategies that require ecosystem restoration, other infrastructure plans that include ecosystem restoration / nature-based solutions (railways, roads, energy etc), river basin management plan / programme of measures requiring restoration, city plans to restore green infrastructure⁶⁸⁷;
Plans or strategies that promote responsible business conduct and sustainable supply chains (e.g. due diligence measures)⁶⁸⁸.
Common Fisheries Policy and EMFF that contribute to the conservation of marine biodiversity through the application of specific measures. However, there is no national support planning as the national rules are only the transposition of the EU ones.

The indications, tools and plans provided by the European Water, Pesticides, Floods Directives and the other mentioned European policies are theoretically in synergy with the biodiversity strategies, but unfortunately even if they contain shared objectives, often in their application they consider only their individual objectives, without overall evaluating the possible implications on the other environmental components (Survey inputs from a Provincial authority).

Coherence with EU Sectoral Policies

Strong synergies between the NBS and EUSB2020 targets and actions and other EU Sectoral Policies within Italy can be detected through the National Rural Development Programme. Agricultural, zootechnical and forestry activities carried out in the Natura 2000 sites can coexist with the conservation of biodiversity with mutual benefits, as demonstrated by the national rural Network. (Survey inputs from an environmental company). However, the potential of a synergy between conservation of biodiversity and agro-forestry-pastoral activities carried out in the Natura 2000 sites (SACs / SCIs and SPAs) was still completely unexpressed in the 2014-2020 programming period (Interview with a public authority and regional authorities and survey inputs from an environmental company);

Often CAP is in contrast with biodiversity principles since production objectives prevail against actions designed to preserve ecosystems (Interview with a public authority and regional authorities). To achieve more coherence among the two policy instruments, a strong commitment may be required in the national and regional programming phase. Improved planning and implementation of CAP measures, with adequate and widespread information, will facilitate their application to the financing of conservation measures in the territories of the Natura 2000 network (Interview with a public authority, regional authorities and a civil and social organization).

⁶⁸⁴ <https://www.minambiente.it/comunicati/parchi-minambiente-al-maxifondo-ridurre-le-emissioni-di-co2-combattere-i-cambiamenti>

⁶⁸⁵ <http://www.pianetapsr.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/2058>

⁶⁸⁶ <https://www.reterurale.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/19419>

⁶⁸⁷ <https://www.isprambiente.gov.it/it/pubblicazioni/rapporti/sinergie-fra-la-direttiva-quadro-sulle-acque-e-ledirettive>

⁶⁸⁸ <https://welforum.it/la-legge-di-bilancio-2020-e-gli-obiettivi-di-sviluppo-sostenibile/>

Coherence with international biodiversity commitments

The NBS is linked to other international or European processes, such as: Mid-Term Review of the European Biodiversity Strategy (2015); the “Fitness Check” process of the EU Birds and Habitat Directives and the 2030 Agenda for Sustainable Development, with 17 sustainable development goals (SDGs).⁶⁸⁹

Coherence with the EU Biodiversity Strategy

The NBS and its mid-term review up to 2020 are in line with EU policies dealing with biodiversity and with the objectives set by the EUBS2020, the CBD Strategic Plan for Biodiversity 2011-2020 and the Aichi Targets;

The NBS creates positive synergies with the following national legislations, policy strategies and plans:

The Italian Law no. 221 of 28 December 2015⁶⁹⁰ on natural capital, management and enhancement of biodiversity. The first two Reports on Natural Capital in Italy, published as consequences of this law, let both to strengthen the knowledge of a tremendous amount of data on ecosystems and their state of conservation and to have a physical and monetary evaluations of the Natural Capital in Italy;

The National Strategy for Sustainable Development⁶⁹¹. In the context of the objectives and targets of the United Nations 2030 Agenda, it was adopted in 2017 as a strategic reference framework of sectoral and territorial policies that allows to start a structural development path focused on sustainability and able to face the environmental, economic and social issues;

The new National Energy Strategy (SEN)⁶⁹². To deal with the growing impacts of climate change it was adopted in 2017 to define the development of the energy sector by 2030 by stimulating an increase in energy efficiency and the use of renewable resources, favouring the decarbonization process;

The (draft) National Plan for Adaptation to Climate Change of 2018 (in approval phase)⁶⁹³ that was elaborated from the Italian Ministry for Environment and submitted to public consultation in 2017.

Some examples of **conflicts** and incoherence between the EUBS2020 targets and actions and other EU or related national policy objectives and implementation measures in Italy have been detected:

Concerning target 2, there is incoherence in the case of plans dedicated to increasing connections and transport, which can make entire local ecosystems disappear. In this case, appropriate mitigation and restoration strategies must be studied to reduce the impacts and allow each species to survive (Survey inputs from a regional authority);

Also, interventions related to the mitigation of hydrogeological risk often involve a significant loss of biodiversity. This happens because operating methods able to mitigate or cancel the negative impacts on the environmental component are not considered in the design phase of such interventions (Survey inputs from a provincial research entity);

Concerning target 4, coherence of EUBS2020 is more of a strategic nature (Survey inputs from a business association). There are no data to confirm the results obtained from the

⁶⁸⁹ 6th National report to the CBD - Italy (Convention of Biological Diversity, 2019)

⁶⁹⁰ https://www.minambiente.it/sites/default/files/archivio/allegati/GPP/legge_28_12_2015_221.pdf

⁶⁹¹ https://www.minambiente.it/sites/default/files/archivio_immagini/Galletti/Comunicati/snsvs_ottobre2017.pdf

⁶⁹² <https://www.mise.gov.it/images/stories/documenti/Testo-integrale-SEN-2017.pdf>

⁶⁹³ <https://www.minambiente.it/sites/default/files/archivio/allegati/clima/pnacc.pdf>

implementation of restrictive fishing policies. There are no results about the fishing companies at least to give satisfaction to the sector that makes efforts to respect European laws (Interview with an association of fishing enterprises). Moreover, impediments to fishing activities were introduced but not incentives for good practices. In the EMFF, for example there were no incentives for vessels using engines with a lower environmental impact (Interview with an association of fishing enterprises).

2.2.4 Relevance

Relevance of EU Biodiversity Strategy

The EUBS2020 and its targets and actions defined in 2011 are considered relevant to preserve biodiversity in Italy (Survey inputs from a public authority, a national farmers association, a provincial research entity and regional authorities). Biodiversity needs did not change so much since 2011, so actions carried out are solid, but it is important to evaluate what has been achieved over this decade, improving subtopics that have not been assessed yet, and adapt others that are ongoing (Survey inputs from a national farmers association, a provincial research entity);

Although the strategy may still be valid, objectives and actions should be calibrated periodically based on the strong influence of climate change recorded from 2011 to today (Survey inputs from a provincial authority). The phenomena linked to climate change constitute, even at the regional level, a significant emergency that has worsened in the last decade (Interview with regional authorities and survey inputs from a provincial authority);

Finally, the pandemic urgencies in progress demonstrate the high-priority need of incorporating the consequences of the anthropogenic pressure as one of the main causes of biodiversity loss (Survey inputs from a regional authority).

Target 2

The relevance of the EUBS2020 in addressing the conservation and restoration of ecosystems and promoting the creation and consolidation of green infrastructure is recognized. However, greater attention should also be given to the Italian and European coasts, proposing an integrated management, a sustainable and careful use of renaturalization, investing in environmental recovery of coastal areas (Survey inputs from a national trade union);

However, actions should be adjusted according to the urgent and growing emergency of desertification, which affects the productive capacity of the soils. The reduction of organic matter in the soils, in many regional agricultural areas, is contributing to the degradation of the ecosystem balance (Survey inputs from a regional authority).

Target 4

- The EUBS2020 is in general relevant to protect and preserve the coastal and marine environment and halt the biodiversity loss of the related ecosystem services in the fishing sector and marine sector, deepening the knowledge on impacts deriving from human activities and climate change. The objectives fixed in 2011 were broad enough, so the actions undertaken are still valid (Survey inputs from a business association). However, the limited involvement of fishing companies during the definition of sustainable fishing rules made it difficult to see the need of introducing same rules in international seas. Sustainable fishing rules to preserve the status of marine habitats and species need to be addressed in a more international perspective involving also other countries (e.g. Libya, Morocco) (Interview with an association of fishing enterprises).

Relevance to stakeholder needs

The needs of stakeholders have been considered during the entire process of formulation of the NBS. In fact, its preparation, implementation and updating has required a multidisciplinary approach and a strong sharing collaboration between political decision makers and central and regional administrations, with the support of the academic and scientific experts to promote social and cultural development, while at the same time achieving the objectives of biodiversity conservation⁶⁹⁴;

Within this specific work area, stakeholders' needs are addressed by various programmes and initiatives aimed at achieving the objectives of the NBS, from the protection of species and habitats to the increase of knowledge on their state of conservation and geographical distribution, from the confrontation of the urgent problem of invasive alien species to the acceleration of progress towards the protection of the marine environment⁶⁹⁵;

The Italian NBS targets are directly linked to the protection of marine and terrestrial biodiversity, evaluation and mainstreaming of the Natural Capital and green infrastructures;

The strategy objectives are strongly connected to the activities involved in farming business and the agricultural subsidies of the CAP (both the first and second pillar) financed several projects that directly and indirectly concern the protection of natural capital (Survey inputs from a national farmers association). Projects providing tools supporting rural municipalities in choosing management strategies suitable for protecting the environment and the quality of life of the communities are another example of relevance to those specific actors;

Although, the strategy and its targets and actions showed its relevance in the mentioned examples, they have very little strength compared to other interests such as economic development, and therefore always remain at the bottom of the ranking of issues to consider (Survey inputs from a provincial research entity);

For instance, the stakeholders in the fishing sector claimed a limited involvement in the phase of defining the objectives and measures that may affect them (Interview with an association of fishing enterprises and survey inputs from a business association);

In the agricultural sector the maintenance and increase of species in danger of disappearing was detected as a gap to be addressed. Moreover, the strategy seems not relevant to maintain local production traditions built over centuries of history, that cease to exist where the typical elements of a production and artisan chain are not present within the actions foreseen in the Strategy (Survey inputs from a regional authority).

Relevance of EU Biodiversity Strategy to MS biodiversity needs

On a theoretical level, the EUBS2020 would respond effectively to Italy biodiversity needs, but tools and demands used to try to reach the set objectives are not efficient (Survey inputs from a provincial research entity). Common needs were also used as inspiration to develop the section "PLANET" of the National Strategy for Sustainable Development adopted in Italy in 2017;

There is no general governance framework in the EU to guide the implementation of biodiversity commitments agreed at national, European or international level (Survey inputs from a national farmers confederation). The Strategy laid the basis for achieving objectives, but the final realization was lacking. Among the gaps, it is certainly worth noting that there are no reliable indicators to measure the results and impact of direct payment schemes and rural

⁶⁹⁴ The Italian National Biodiversity Strategy 2011-2020) (MATMM, 2010)

⁶⁹⁵ 6th National report to the CBD - Italy (Convention of Biological Diversity, 2019)

development programs in relation to biodiversity. The absence of parameters to quantify the ecosystem services of farms also negatively affects the implementation of the measures (Survey inputs from a national farmers confederation). In some sectors, more ambitious objectives are needed, accompanied by strong instruments, which can accompany a change of model (as in the new Farm to Fork strategy regarding the reduction of pesticides). For example, the introduction of incentives in the agricultural sector for companies implementing good practices in line with biodiversity conservation may avoid reducing their competitiveness (Survey inputs from a national farmers confederation);

The EUBS2020 made it possible to consolidate, even if with a long delay, the path relating to the structuring of the Natura 2000 network and made it possible to implement concrete actions in agriculture and forestry for an increasingly conscious use of natural resources (interview with a regional authority and survey inputs from a regional authority);

The current strategy does not consider the natural dynamism of natural and semi-natural habitats and species present on the territory and their natural fluctuations (Survey inputs from a Provincial authority);

Biodiversity is not yet understood as a crucial issue for determining the resilience of a system that also includes man. The strategy must enhance biodiversity not only focusing on single Natura 2000 site or specific species on the planet but as fundamental element for the permanence of the same human species (Survey inputs from a regional authority). Human and natural systems are progressively more interlinked, which needs integrated strategies and increasing people's culture on biodiversity (Interview with a regional authority).

2.2.5 EU added-value

The EUBS2020 has influenced other EU policies at EU, national and local level, as well as the Italian Biodiversity Strategy adopted in 2010 that was adapted in 2016 following the lead of the EU Strategy. Improvements on biodiversity conservation started in 2011 when Italy adopted the national biodiversity strategy to reach the Aichi targets and comply with the EUBS2020 (Survey inputs from an environmental company);

It had an added value above all in raising awareness especially among stakeholders in the fishing and agriculture sectors. Today those sectors are more ready to participate;

Preceded by a multi-stakeholders' consultation process, the Italian strategy was approved before the European one (2010)⁶⁹⁶. However, it was revised in 2016, when some more programming indications used to measure the impacts of the adopted actions have been based on the EU Biodiversity Strategy and the Aichi targets⁶⁹⁷. Therefore, it is recognized the **additional** value resulting from the EUBS2020 compared to the value that would otherwise have been created by Italy action only through national legislation.

The identified **advantages** of the EUBS2020 as the main biodiversity policy instrument include:

The EUBS2020 provides an excellent tool to pave the way to a restoration of degraded ecosystems across EU Member States and stresses the need to act in relation to climate change (Survey inputs from a national farmers association). It develops a cross-border policy that stands above individual state interests, and that provides boundaries within which Member States are required to stand (Survey inputs from a Provincial authority). As all strategies with a temporal validity, it requires MS to define a deadline to concretise the objectives of the strategy

⁶⁹⁶ The Italian National Biodiversity Strategy 2011-2020) (MATMM, 2010)

⁶⁹⁷ 6th National report to the CBD - Italy (Convention of Biological Diversity, 2019)

establishing quantitative objectives that allow measuring progress (although in some cases it has been difficult to quantify) (Survey inputs from an environmental company);

Among other advantages, the EU biodiversity strategy forces the review of existing natural capital management policies and it is understood directly by most of the stakeholders affected by its activation and represents a general instrument, which can be applied in different circumstances (Interview with a regional authority). It pays attention to semi-natural habitats, for which their maintenance is highly dependent on the involvement of the owners (Survey inputs from a Provincial authority).

However, the EUBS2020 also have several **drawbacks** and **disadvantages** to consider:

It provides a silos approach to biodiversity policies that does not take sufficiently into account the cultural, social and political realities (Survey inputs from an environmental company). It appears as not very flexible and it leaves the assessment of many policy areas to be carried out during the implementation (Survey inputs from a national farmers association);

In some cases, the EUBS2020 fails to make a firm connection with the economic development of businesses and activities (Survey inputs from a national confederation of farmers). It does not sufficiently underline the need to have more connected financial instruments and a concrete network of clusters which allow the sectorial communities to benefit from subsidies related to biodiversity and climate change policies (Survey inputs from a national farmers association). In the agricultural sector, farmers and local communities in rural areas have not been organized and supported for instance for the creation of consortia (Survey inputs from a national farmers association);

The EUBS2020 conceives the rules that MS must comply according to a central European logic which does not always adapt well, for example, to the present situation of the sub-Alpine or Mediterranean areas, where there is a high value of biodiversity. In such cases, different species lists, and criteria may be adopted for applying the strategy (Survey inputs from a provincial research entity). Its application has required and still requires significant efforts in drafting the administrative formalities required by the directive (objectives, measures, etc.), subtracting resources from the execution of actions on the territory (Survey inputs from a Provincial authority). Finally, it does not clearly indicate the control or sanction instruments to implement to prevent damage to species (Interview with regional authorities).

Despite the mentioned disadvantages, withdrawing the existing EU intervention would have created negative consequences:

The lack of a common strategy for the protection and enhancement of biodiversity at European level would jeopardize the protection of animal and plant species and the areas in which they live. Not having a European reference framework for the protection and management of areas would drastically increase the deterioration of the state of ecosystems and worsen biodiversity issues across boundaries (Survey inputs from a regional public association). The deficit of a EUBS2020 would compromise habitat conservation in some Members States that do not have legislation on this sector (Interview with regional authorities);

Stopping the existing EU intervention would imply a sharp slowdown in policies linked to biodiversity protection, less strength in the definition of national objectives, a severe delay in the implementation and achievement of the objectives of the biodiversity strategy, a limited possibility of accessing to EU funds, a reduction of interest related to nature conservation becoming even less relevant at the provincial and national level (Interview with a Regional

authority and survey inputs from a provincial research entity). As the strategy has been strongly connected to the CAP, its absence would mean a disruption of the common rules applied to the EU agriculture with the consequent termination of agro-climatic and environmental payments, which are currently the main financing instrument for measures related to biodiversity (Survey inputs from a national farmers association).

Several **alternative instruments** have been identified as suitable to achieve the EUBS2020 targets more efficiently:

- The integration of EUBS2020 targets in other EU Strategies such as the Climate Change Adaptation and Mitigation Strategy, the Urban Sustainable Development Strategy and the Soil Consumption Strategy, for example, would have achieved better results (Survey inputs from a regional public association);
- Alternative instruments such as a specific European Fund for the Environment would have reduced conflicts in the destination of economic resources and would have strengthened the effectiveness of the strategy (Survey inputs from a regional authority);
- The definition of a new EU legislative framework for soil protection would have increased the effectiveness of the existing incentives and measures and would have enhanced Europe's ability to achieve future objectives (Survey inputs from a national trade union);
- The introduction of self-regulation tools measuring the improvement of the state of ecosystems in the most harmonized possible way could have been also an alternative system to improve the effectiveness of the strategy (Survey inputs from a regional authority);
- In the agriculture sector, the creation of Areas with Natural Constraints (ANC) would have allowed an efficient way to halt biodiversity losses. A positive aspect would be a more resilient and even more sustainable rural environment with advantages in know-how sharing and other sharable benefits for farmers and rural communities (Survey inputs from a national farmers association).

Evidence of additional benefits compared to MS action

- The attempt to tackle a cross-border issues at EU level certainly has additional benefits and allows, if a way is found to implement the measures effectively, to achieve objectives that MS alone could hardly achieve (Survey inputs from a national confederation of farmers). The relevance of a trans-national network in a Community strategy represents an added value and makes direct and indirect actions on habitats and species more binding, to maintain the coherence of the network itself (Interview with a regional authority);
- The application of programming tools for site management, in habitats crossing physical or geographical boundaries, without the guide of the European community, would probably have been difficult;
- The use a standardized and centralized management of wildlife data following consistent data collection protocols showed to be much more valuable than dozens of independent efforts (Survey inputs from a research institution).

Evidence of change in MS ambition and/or commitments due to the Biodiversity Strategy

- The adoption of the NBS created a change in Italian commitment towards ecosystem preservation, creating the basis to build co-responsibility among involved entities in the implementation of the measures to achieve the defined objectives (Survey inputs from a Provincial authority);

The guide provided by the NBS resulted in greater strength at the local level (provinces and regions) in continuing the application of EU directives to restore a variegated and resilient nature in all landscapes and ecosystems (Survey inputs from a national trade union). Indeed, many landscapes in danger of disappearance, such as, for example, dunes, are placed under constant protection and observation, because it was understood that they are fundamental for the reproduction of numerous species (survey inputs from a regional authority).

Evidence of change in sectoral ambition due to the Biodiversity Strategy

The Italian biodiversity strategy was drawn up before the European one (2010). However, the EUBS2020 impacted the NBS since it was revised in 2016, and some more programming indications used to measure the impacts of the adopted actions have been based on the ones of EUBS2020, as well as the Aichi targets (Survey inputs from a national farmers association and an environmental company);

The NBS is the result of a participation and co-creation process involving various institutional, social and economic actors committed to work together to halt the decline of biodiversity;

The NBS and its mid-term review constitute therefore a tool for integrating the needs of conservation and natural resources sustainable use into national sector policies, in line with the objectives set out in the EUBS2020. The 3 strategic objectives of the Italian strategy (Biodiversity and ecosystem services, Biodiversity and climate change and Biodiversity and economic policies) were partially achieved with the contribution deriving from the various sector policies identified in 15 work areas (Survey inputs from a regional public association);

In general terms, specific paragraphs from national strategy have been included in all national/regional/provincial plans. For example, the provincial waste plans give special attention to avoid the negative impact of inadequate waste management in Natura 2000 sites (Survey inputs from a Provincial authority).

2.3 Conclusions

The Italian National Biodiversity Strategy was released in 2010, one year before the publication of the European Biodiversity Strategy towards 2020 but it was adapted in 2016 following the lead of the European Strategy, as well as the Aichi targets.

2.3.1 Effectiveness

The financial contributions received by Italy through the EU financial instruments certainly contributed to the achievement of the EUBS2020 objectives. Indeed, the taken measures have allowed to implement an important number of systemic and transversal actions aimed at the conservation of biodiversity and the restoration of terrestrial and marine ecosystems with positive effects on the environment.

Concerning target 2, numerous actions of active protection with demonstrative value have been implemented to maintain and restore habitats and species by natural parks, provincial and regional administrations. At a national level, regulations and studies underlining the value of ecosystem services have been particularly important to stimulate projects aiming to improve the conservation of ecosystems. At local level, thanks to European funding projects (H2020, LIFE), many Italian Municipalities have developed projects of urban regeneration, greening, urban forestry, also in collaboration with public and private organizations and stakeholders. However, the restoration actions

have been undertaken mainly in protected areas while for highly contaminated urban areas their implementation was limited mainly for financial constraints.

Concerning target 4, the Common Fisheries Policy in recent years has highlighted particular attention to the conservation of species and habitats, while the EMFF provides measures for the mitigation of interactions with protected species. However, results achieved so far on the marine biodiversity conservation are limited since they are given by the sum of interventions aimed at reducing the impacts of the multi-sectorial activities (fishing, aquaculture, tourism, transport, extractive activities, etc.) and those by pollution caused from anthropic activities and climate change. The fishing sector was regulated with increasingly stringent measures to limit the threats represented by over-fishing while, limited interventions have been introduced to reduce the negative impact due to urban development, water pollution (including the marine litter) and habitat modifications induced by human activities.

2.3.2 Efficiency

The different measures implemented in the Italian regions with high biodiversity have generally created positive socio-economic impacts relating to job creation, investment, life quality and health impacts. A decrease in biodiversity can affect companies and professional operators dedicated to specialized agriculture and aquaculture in addition to entrepreneurial figures, such as livestock breeders, fishermen, social cooperatives, NGOs and researchers.

Some obstacles related to the taken measures emerged: limited financial resources, non-homogeneous levels of the initial datasets, progress indicators difficult to use, and not sufficient commitment of all institutional levels to achieve the NBS objectives.

A greater mobilisation and optimization of the use of the available financing sources and a more effective tracking system remain the major obstacles to achieve the NBS and EUBS2020 and Nature Directives objectives. A greater coordination at the different levels and sectoral competences in integrating biodiversity into the EU funds programs is needed;

The limited financial resources represent a barrier for an efficient and complete monitoring that currently is financed exclusively from the budget of the provincial administration as these kinds of initiatives cannot be financed by EARFD or other EU/national funds. The drastic cuts to public administration budgets at national, regional and local level, including those responsible for the environment, has greatly reduced their capacity to monitor protected areas within their territorial competences;

Data to understand national progress towards EBS2020 is partially available and it is not sufficiently understandable to all stakeholders. Data flow should be faster and more efficiently disseminated. The defined indicators used to monitor the national progress towards the objectives of EBS2020 are proved to be difficult to use and, in many cases, brought to the need to verify the achievement of the objectives and define the trends only with qualitative assessments instead of quantitative ones;

A more general barrier for achieving the objectives of the EUBS2020 is the Italian regulatory and planning structure, which prevents effective strategic planning. The fact that policies to be implemented need a factor of stability which the Italian framework cannot provide due to the changes in the last years in governments over decades is certainly a hampering factor hindering the achievement of the objectives;

The limited interventions from the EC in checking the sustainability of projects approved from administrations in despite of the negative opinion from the competent offices has been considered a of key factors hindering the implementation of the targets;

To improve the effectiveness of targets achievement it would be appropriate to encourage the exchange of good practices and experiences at the level of Member States and neighbouring regions of the same biogeographical areas. Moreover, it would be necessary to simplify bureaucracy of the application of the tools, management and requirements procedures currently envisaged so that the objectives of the EUBS2020 and the NBS do not remain on paper, as it happened in large part for those of the previous decade (2010-2020).

Concerning target 2, the unsuccessful implementation of actions for preserving ecosystems and their services is mainly related to the insufficient budget needed for restoring degraded ecosystems. The main activities are developed in protected areas, whereas in urban areas the restoration of degraded and contaminated areas is more difficult. Prioritizing actions, programming the economic and financial resources necessary for the concrete realization of the objectives and identifying the most appropriate regulatory, technical and financial instruments are actions needed to ensure the launch of an effective renaturation action in the country. The absence of an Italian Environmental Restoration Plan is an important barrier to arrest the impact provoked by the continuous land consumption in the country, which occurs also in protected areas, areas restricted for landscape protection, areas with medium hydraulic hazard, landslide hazard areas and seismic hazard areas. There is an urgent need to proceed with the economic evaluation and recognition of the ecosystem services.

Concerning target 4, national legislation has tried to ensure sustainable fishing and limiting over-fishing by closing some fishing areas and introducing rules that are considered too stringent and substantially inapplicable by fishing operators. The poor control of the rules' application may encourage improper behaviours. Measures implemented for the conservation of marine biodiversity through sustainable fishing actions generally have a negative short-term impact on the income of fishermen, especially if no incentives and no protection social cushions are available for those who implement good practices. That may bring to the abandonment by young people and the closure of fishing businesses. However, "fishing better", in a more sustainable way, may give a positive result to the sector itself even, from a business perspective, since the reduction of available products would increase the product demand with the consequent increase in the price and income for fishermen. However, to make this mechanism possible is fundamental that craft fleets (also the international ones) respect the same rules in international seas. A greater participation of stakeholders may be a crucial step to achieve better results in limiting overfishing. On one hand, it may support in having a real picture of the situation; and on the other, it may increase fishing sector awareness on the existing threats for marine biodiversity in Mediterranean Sea that calls for an increase in marine protected areas. As marine litter is concerned, despite the efforts to generate evidence and the understanding of its concerns and to reduce the pressures coming from marine litter as well as its impacts on biodiversity and ecosystems in the Mediterranean region, knowledge gaps on the impacts of marine litter on marine life, the whole ecosystem functions, and the final implications for human health, are still to be filled.

2.3.3 Coherence

The indications, tools and plans provided by the European Water, Pesticides, Floods Directives and the other European policies are theoretically in synergy the EUSB2020, but even if they contain shared objectives, often in their application takes into consideration only their individual

objectives, without overall evaluating the possible implications on the other environmental components;

The NBS creates positive synergies with legislations, policy strategies and plans developed at national level and related to natural capital, management and enhancement of biodiversity, sustainable development, soil consumption and adaptation to climate change, but the direct integration of the NSB targets in those national plans and strategies would have achieved better results;

Strong synergies between the NBS and other EU Sectoral Policies within Italy can be detected with the CAP and the National Rural Development Programme. Agricultural, zootechnical and forestry activities carried out in the Natura 2000 sites can coexist with the conservation of biodiversity with mutual benefits, as demonstrated by the national rural network. However, often the CAP is in contrast with biodiversity principles, since the production objectives prevail against actions designed to preserve ecosystems. To achieve more coherence among the two policy instruments, a strong commitment is required in the national and regional programming phase.

Concerning target 2, there is incoherence in the case of plans dedicated to increasing connections and transport, which can make entire local ecosystems disappear. Also, the interventions related to the mitigation of hydrogeological risk often involve a significant loss of biodiversity. The natural areas hosting the largest share of biodiversity are often highly required for their exploitation (e.g. economic interest linked to tourism development), often in antithesis with their preservation. This happens because actions able to mitigate or cancel the negative impacts on the environment are not considered in the design of such interventions.

Concerning target 4, coherence of EUBS2020 is more of a strategic nature. There are no data to confirm the results obtained from the implementation of restrictive fishing policies and acknowledge the efforts made from the sector to respect European laws. Moreover, restrictions to fishing activities were introduced, but not incentives for good practices. In the EMFF, for example there were no incentives for vessels using engines with a lower environmental impact.

2.3.4 Relevance

The EUBS2020 and its targets and actions defined in 2011 are considered relevant to the needs to preserve biodiversity in Italy. Biodiversity needs did not change so much since 2011 so actions carried out are solid, but it is important to keep informed of what has been achieved over this decade, improving subtopics that have not been assessed yet, and adapt and calibrate the objectives and actions that are ongoing based on the strong influence of climate change that has worsened from 2011 to today;

Although, the recognized relevance of the EUBS2020, its targets and actions, they have very little strength compared to other interests such as economic development, and therefore often remain at the bottom of the ranking of issues to consider.;

The relevance of the NBS to stakeholder needs is in part demonstrated by the fact that the elaboration of the strategy was preceded by a multi-stakeholders' and a multidisciplinary consultation process involving political decision makers, national and regional administrations and academic and scientific experts to promote social and cultural development in line with biodiversity conservation. However, the actors' involvement in the development and implementation phases of the NBS was considered not sufficient to represent the interests and

perspectives of all player. It emerged the need to increase participation and consultation with some stakeholders, especially in the private sector (especially fishing and agricultural) to increase the awareness of the greatest number of associations of categories about biodiversity issues and englobe their perceptions and suggestions when planning objectives, measures and actions;

Concerning target 2, the relevance of the EUBS2020 in addressing the conservation and restoration of ecosystems and promoting the creation and consolidation of green infrastructure is recognized. However, greater attention should also be paid to the Italian and European coasts, proposing an integrated management, a sustainable and careful use of renaturalization which must be the keywords of the future, investing in recovery and requalification work also of the coasts. Actions should be adjusted according to the urgent phenomena growing emergency such as desertification, which affect the productive capacity of the soils. The reduction of organic matter in the soils, in many regional agricultural areas, is contributing to the degradation of the ecosystem balance.

Concerning target 4, the EUBS2020 is in general relevant to protect and preserve coastal and marine environment and halting the biodiversity loss of the related ecosystem services fishing sector and marine sector deepening the knowledge on impacts deriving from humane activities and climate change. The objectives fixed in 2011 were broad enough that the actions undertaken are still valid. However, the limited involvement of fishing companies during the definition of sustainable fishing rules made it difficult to see the need of introducing same rules in international seas. The involvement of Mediterranean third countries (e.g. Turkey, Libya, Tunisia, Algeria) to address in a more international prospective the existing over-fishing may contribute in preserving the status of marine habitats and species.

2.3.5 Added value

After having compared the advantages and disadvantages of having the EUBS2020, analysed the potential consequences of its absence, and identified the alternative instruments that could be more efficient in achieving the biodiversity objectives in Italy, it was recognized the additional value provided from the EU strategy as right policy instrument to contribute to halting Italian biodiversity loss.

The EUBS2020 promoted policies linked to biodiversity protection and more strength in the definition of national objectives, reinforced the implementation and achievement of the objectives of the NBS, increased opportunities to access to EU funds and interest related to nature conservation both at the provincial and national level. The adoption of the NBS created a change in Italian commitment towards the ecosystems' preservation creating the basis to build co-responsibility among involved entities in the implementation of the measures to achieve the defined objectives;

The guide provided by the NBS provided a greater strength at the local level (provinces and regions) in continuing the application of EU directives to restore a variegated and resilient nature in all landscapes and ecosystems and act in relation to the rapid climate change, which is affecting terrestrial and marine ecosystems at a tremendous high-speed rate. It develops a cross-border policy that stands above individual state interests, and that provides boundaries within which member states are required to stand. As all strategies with a temporal validity, it requires MS to define a deadline to concretise the objectives of the strategy establishing

quantitative objectives that allow measuring progress (although in some cases it has been difficult to quantify);

It had an added value above all in raising awareness especially among stakeholders in the fishing and agriculture sectors. Surely today those sectors are more ready to participate.

The NBS, in line with EUBS2020, has furnished several objectives and instruments to measure progress of the territory in halting biodiversity degradation and, though financial and organizational limitations have hindered the achievement of the established targets, it prepared the basis to build a more efficient EU Biodiversity Strategy to 2030 in synergic co-creation with the relevant players of the different sectors of the economy.

3 Greece

3.1 Introduction

3.1.1 Overview of key biodiversity state, trends, pressures and drivers

Due to its diverse micro-climatic conditions and unique geomorphology, Greece holds exceptional biological wealth, which includes many endemic species. As a biodiversity hotspot, Greece substantially contributes to the European biological capital, hosting 88 different habitat types, 292 bird species, and 301 other species of Union interest. However, the state of biodiversity in Greece is deteriorating. Only 63% of the habitats and 33% of species covered by the EU Nature Directives are considered to be in a good conservation status, while populations of farmland and forest birds are keep decreasing (2.6% decrease in farmland birds and 38.15% in forest birds, between 2007 and 2016).⁶⁹⁸ Altering natural processes, intensive agriculture, and urban expansion are the predominant threats against species and habitats in Greece.⁶⁹⁹ One of the main drivers negatively affecting biodiversity in Greece is the loss of natural and semi-natural ecosystems, as Greece has one of the highest rates of expansion of artificial surfaces in the EU between 2006 and 2012⁷⁰⁰. In addition, habitat fragmentation is also an important driver, since only 24% of Greece's terrestrial area is farther than 1km away than the nearest road, which is particularly low compared to the European and global average⁷⁰¹. At the same time, although Greece's environmental footprint has been decreasing, ecological deficit is -2.71 Gha/per person.⁷⁰² Finally, the environmental implementation review of Greece highlights past and current unsustainable policies on land use, agriculture, fisheries, transport, and tourism and climate change as the main drivers negatively impacting biodiversity.⁷⁰³

3.1.2 Overview of the national biodiversity policy framework, governance and overall progress towards the EU and global 2020 biodiversity targets

As a party of the UN Convention on Biological Diversity (CBD), Greece has ratified and is implementing the CBD's Strategic Plan for Biodiversity 2011-2020. Using the Strategic Plan as a framework, Greece defined its own national Strategy for Biodiversity for 2014-2029, which is the primary biodiversity-related policy instrument in the country. The national Strategy is implemented by the Ministry of Environment and Energy in collaboration with other relevant stakeholders - i.e. central and regional services, the local government administration, socio-economic actors, NGOs, and research institutions. The overarching objective of the Strategy is to achieve the Aichi targets of the UN Strategic Plan to Biodiversity 2011-2020. Therefore, the targets included in the Greek Strategy closely follow the structure and rationale for the Aichi targets. The national Strategy is operationalised by accompanying consecutive 5-year Action Plans. Together with the EU Biodiversity Strategy, these elements constitute the complete policy framework for Biodiversity in Greece.

The correlation of the EU and Greek targets is shown in Table 1-1. It depicts which of the General and Specific National Targets of the Greek Biodiversity Strategy correspond to the six Targets of the EU Biodiversity Strategy for 2020. Per the table, not all targets of the national Strategy for Biodiversity

⁶⁹⁸ ΕΚΠΑΑ (2018). Φύση-Βιοποικιλότητα. Έκθεσης Κατάστασης Περιβάλλοντος 2018 (Nature-Biodiversity. State of the Environment Report 2018)

⁶⁹⁹ *ibid*

⁷⁰⁰ *ibid*

⁷⁰¹ *ibid*

⁷⁰² *ibid*

⁷⁰³ EC (2019). The Environmental Implementation Review 2019. Country Report Greece. SWD(2019) 138 final

2014-2029 (in total 13 General Targets) correspond to a target from the EU 2020 Strategy. Moreover, the Headline target of the EU Biodiversity Strategy is not explicitly covered by any of the targets of the national Strategy.

Greece's overall progress to achieve the EU, global, and national biodiversity targets is limited. As mentioned in Section 2.1.1, there is partial progress made towards achieving Target 1 and Target 2 of the EU Biodiversity Strategy to 2020 and only limited progress in achieving Targets 3 to 6. In terms of the global (and national) biodiversity targets, according to Greece's 6th National Report to the CBD, 8 out of the 13 Aichi targets are on track to be achieved, 3 targets indicate no significant change, and 2 insufficient progress.⁷⁰⁴

Table 3-1 Mapping of national targets of the Strategy for Biodiversity 2014-2029 and related actions and measures to the Targets of the EU Biodiversity Strategy to 2020

EU Biodiversity Strategy 2020	EL National targets	Related strategies/action plans/measures
Headline target: halt the loss of biodiversity and the degradation of ecosystem services	N/A	Greece has adopted a National Strategy for Biodiversity 2014-2029 and its accompanying 5-year Action Plan, which was approved in 2014 and due to be revised in 2020
Target 1: Fully implement the Birds and Habitats Directives	General National Target 1: Increase knowledge for the assessment of biodiversity status	Project LIFE IP 4NATURA: <ul style="list-style-type: none"> Implement concrete conservation measures and apply legal instruments for habitats and species of Community interest; Formulate, legally approve and implement at least 10 Action Plans for selected habitats and species of EU interest; Implement at least 12 Management Plans in the four participating administrative regions, covering the Natura 2000 network; Strengthen coherence among N2000 sites and improve their connectivity; Build capacity, knowledge and awareness of key stakeholder at all levels (local to national) on the Nature Directives; Provide a geospatially oriented database system for the Natura 2000.
	General National Target 2: Conservation of national natural capital and ecosystem restoration	
	General National Target 3: Organization and operation of a National System of Protected Areas and enhancement of the benefits from their management	
	Specific National Target 11.1: Integrating biodiversity issues informal and non-formal education and the promotion of the value of biodiversity	
	Specific National Target 11.2: Promoting environmental awareness of biodiversity conservation.	
Target 2: Maintain and enhance	General National Target 1: Increase knowledge for the assessment of biodiversity status	Greece expanded its marine protected areas, as the national part of the Natura 2000 network, from 6% to 19.6% of its total marine area
		Greece adopted the National Action Plans for " <i>Neophron percnopterus</i> " and " <i>Anser erythropus</i> " and the Regional Action Plan for " <i>Falco naumanni</i> "

⁷⁰⁴ CBD (2019). Greece - Sixth National Report. Available at: <https://chm.cbd.int/database/record?documentID=248558>

EU Biodiversity Strategy 2020	EL National targets	Related strategies/action plans/measures
ecosystems and their services	General National Target 2: Conservation of national natural capital and ecosystem restoration	<ul style="list-style-type: none"> Prevent extinction of these species of avifauna; Stabilise their population; Improve their conservation status.
	General National Target 13: Gaining appreciation of ecosystem services and promoting the value of Greek biodiversity	
	<i>(indirectly)</i> General National Target 5: Enhancing the synergies among the main sectoral policies for the conservation of biodiversity. Establishing incentives	
Target 3: Increase the contribution of agriculture and forestry to maintaining and enhancing biodiversity	Specific National Target 5.5: Ensuring the compatibility of agricultural, fishing and forestry activities with biodiversity conservation.	<p>Greece has adopted the National Strategy for sustainable rural development which is implemented through the National Rural Development Programme (RDP) 2014-2020</p> <ul style="list-style-type: none"> Among others aims at promoting sustainability of the agri-food system and rural areas, through the protection and integrated management of natural resources and the environment <p>Greek Government recently adopted relevant legislation (Law No. 4351/2015) on the development of Management Plans for all grazing lands of the country</p> <ul style="list-style-type: none"> contribute substantially to the rational management, exploitation and distribution of grasslands, as well as to the support of livestock farming <p>Greece introduced a National Forest Strategy (Ministerial Decision 170195/758)</p> <ul style="list-style-type: none"> Among others aims at conserving the unique biodiversity of the Greek forests in terms of their genetic resources, species, ecosystems, and landscapes.
	Specific National Target 3.2: Application of exemplary and innovative practices in the productive sectors and tourism based on the management plan of each area for biodiversity conservation and management	
	<i>(indirectly)</i> General National Target 1: Increase knowledge for the assessment of biodiversity status	
	<i>(indirectly)</i> General National Target 2: Conservation of national natural capital and ecosystem restoration	
Target 4: Ensure the sustainable use of fisheries resources	General National Target 5: Enhancing the synergies among the main sectoral policies for the conservation of biodiversity. Establishing incentives	<p>The Operational Programme for Fisheries and the Sea 2014-2020 offers funding opportunities for an environmentally sustainable, resource-efficient, innovative fish sector.</p> <p>Main priorities of implemented policies:</p> <ul style="list-style-type: none"> the sustainable management of fishery resources, though the implementation and monitoring of related management plans; the prevention, reduction and elimination of illegal, unreported and unregulated fishing;
	<i>(indirectly)</i> General National Target 2: Conservation of national natural capital and ecosystem restoration	
	<i>(indirectly)</i> General National Target 3: Organization and operation of a National System of Protected Areas and enhancement of the benefits from their management	

EU Biodiversity Strategy 2020	EL National targets	Related strategies/action plans/measures
	(indirectly) General National Target 8: Protection of biodiversity from invasive alien species	<ul style="list-style-type: none"> the control of areas where banning measures have been taken; the implementation of a fishery data collection programme; and the facilitation of fishermen in efficiently and commercially organizing their activities.
Target 5: Control invasive alien species	General National Target 8: Protection of biodiversity from invasive alien species	<p>The INTERREG Project INVALIDIS launched in 2018 aims at addressing:</p> <ul style="list-style-type: none"> knowledge gaps in ecosystems' vulnerability to biological invasions and species' distribution; lack of awareness about IAS environmental and socioeconomic risks; low level of cooperation between key stakeholders for the implementation of IAS management measures; and conflicts of interest <p>Management measures to reduce the impact of invasive species of €1,000,000.00 - Projected end: 2023</p>
Target 6: Help avert global biodiversity loss	General National Target 9: Enhancing international cooperation for biodiversity conservation	<p>Greece has participated in numerous ecosystems and species protection projects of transboundary cooperation with neighbouring countries in the Balkans and Eastern Mediterranean.</p> <p>Greece has introduced additional implementing provisions for CITES including a licensing scheme to control international movements of threatened and endangered species.</p> <p>Greece is currently in the process of issuing the necessary legal acts to implement the Nagoya Protocol and Regulation (EU) 511/2014.</p>
	General National Target 4: Conservation of the genetic resources of Greece - Facilitating access to genetic resources - Fair and equitable sharing of the benefits arising from their utilisation	
	General National Target 11: Integration of biodiversity conservation in the value system of the society	
	General National Target 13: Appreciation of ecosystem services and promotion of the value of Greek biodiversity	
	General National Target 5: Enhancing the synergies among the main sectoral policies for the conservation of biodiversity. Establishing incentives	
	(indirectly) General National Target 2: Conservation of national natural capital and ecosystem restoration	

3.1.3 Choice of targets to focus the national case studies, and justification

The analysis of how the EU Biodiversity Strategy to 2020 was implemented in Greece focuses on 3 specific targets, namely Target 3A, 3B, and the MAES component of Target 2. As indicated in Greece's

State of the Environment Report 2018⁷⁰⁵, agriculture constitutes one of the three main pressures for species and habitats in Greece. Therefore, it is particularly interesting to identify whether the Strategy and the implementation of Target 3A in Greece have influenced the impact of agriculture on biodiversity. Moreover, due to the exceptionally rich forest biodiversity in Greece, the analysis also focuses on the implementation of Target 3B. In terms of Action 5 (MAES), research on biodiversity and ecosystem services has been quite advanced lately and the analysis aims at exploring the current status of these developments.

3.2 Country-specific biodiversity target focus

3.2.1 Effectiveness

Overall progress towards the Biodiversity Strategy

Greece's overall progress towards the EU Biodiversity Strategy is considered limited. There is, however, *partial progress* towards **Target 1**. Greece has to a large extent completed the Natura 2000 network, covering 27.5% of Greece's surface area, compared to 18.1% in Europe, and expanded its marine protected areas that are part of the national Natura 2000 network from 6% to 19.6%.⁷⁰⁶ Overall, the state of species and habitat conservation in Greece is better than the average in Europe with 37% of species and 53% of habitat types of European interest are in "favourable" conservation status and 53% and 43% respectively in "unfavourable - inadequate" or "unfavourable - bad" status.⁷⁰⁷ Since 2018, Greece has increased the number of Natura 2000 sites from 30% to almost 100%. However, to date, Greece has not effectively managed these areas. This is largely a result of a low number of formally adopted and implemented management plans and Greece' lacking comprehensive management, administration, and functioning of protected areas.⁷⁰⁸ The inefficient management of sites is also evident by many relevant cases of the Court of Justice against Greece.⁷⁰⁹ However, recently initiated projects aim at closing this gap by implementing Action Plans for habitats of European interest and implementing pilot Management Plans in Natura 2000 sites.⁷¹⁰

In terms of **Target 2**, progress has been *partial* with regard to ecosystem restoration. Three recently adopted national action plans⁷¹¹ for the protection of endangered species are being implemented. However, achieving the target of 15% restoration of degraded ecosystems has not materialised.⁷¹² There has been *minimal progress* with regard to Green Infrastructure (GI) development. Since only a few GI projects have been implemented in Greece, there is still no GI policy framework, and GI has not been mainstreamed into other policy areas.⁷¹³ However, there has been *significant progress* regarding the increase of knowledge of ecosystems and their services (see analysis below). There is *minimal progress* in achieving **Target 3A** and *partial progress* towards **Target 3B** (see analysis below). Evidence indicates

⁷⁰⁵ ΕΚΠΑΑ (2018). Φύση-Βιοποικιλότητα. Έκθεσης Κατάστασης Περιβάλλοντος 2018 (Nature-Biodiversity. State of the Environment Report 2018)

⁷⁰⁶ CBD (2019). Greece - Sixth National Report. Available at: <https://chm.cbd.int/database/record?documentID=248558>

⁷⁰⁷ ΕΚΠΑΑ (2019). Φύση-Βιοποικιλότητα. Επικαιροποίηση Έκθεσης Κατάστασης Περιβάλλοντος 2018 (Nature-Biodiversity. Update of the State of the Environment Report 2018. Available at: ekpa.ypeka.gr/wp-content/uploads/2020/09/Επικαιροποίηση-ΕΚΠ-Φύση-και-Βιοποικιλότητα-2019.pdf

⁷⁰⁸ EC (2019). The Environmental Implementation Review 2019. Country Report Greece. SWD(2019) 138 final

⁷⁰⁹ Case C-600/12 (non-compliance with article 6 (3) regarding the renewal of a landfill permit in a Natura site in Zakynthos); C-504/14 (failure to comply with articles 6 (2) and 12 (1) (b) and (d) in the Gulf of Kyparissia); C-517/11 (failure to comply with article 6 (2) regarding deterioration and pollution of Lake Koroneia).

⁷¹⁰ These refers to the LIFE-IP 4 NATURA Project and the project "Development of Special Environmental Studies and Management Plans for Natura 2000 sites" of the Ministry of Environment & Energy

⁷¹¹ ΚΥΑ 43231/1054/ 17.10.2017; ΚΥΑ 43235/1053/17.10.2017; ΚΥΑ 43236/1053/17.10.2017

⁷¹² The Green Tank (2020) «Προτεραιότητα στη φύση: Αξιολόγηση της υλοποίησης της Εθνικής Στρατηγικής για τη Βιοποικιλότητα»

⁷¹³ EC (2019). The Environmental Implementation Review 2019. Country Report Greece. SWD(2019) 138 final

that there is also *minimal progress* towards achieving healthy fish stocks and Maximum Sustainable Yield (**Target 4**). Although Greece has put in place a programme of measures as required by the Marine Strategy Framework Directive, out of 74 stocks of targeted (by fishing fleets) and non-targeted species in Aegean Sea assessed in a recent study, only half (37) were found to be healthy (6 out of 20 targeted stocks and 31 out of 54 non-targeted).⁷¹⁴ There is also *minimal progress* towards **Target 5**, as Greece has not systematically identified and established a formal list of priority alien invasive species (IAS), has not introduced a national programme to combat such species, and has not adequately controlled their pathways.⁷¹⁵ However, these issues will be partially addressed by the INVALIDIS Interreg project⁷¹⁶ which will produce an action plan to improve policy instruments in Greece. Finally, there has been *minimal progress* towards achieving **Target 6**. Although Greece ratified the Nagoya protocol in 2019, there is no evidence of any steps taken to reduce the indirect drivers of biodiversity loss or to mobilise additional resources for global biodiversity conservation.

Key success/failure stories on the implementation of the Biodiversity Strategy in Greece

As several of the targets and actions of the Strategy aim to stimulate the implementation of existing legal commitments, the achievements presented below cannot be attributed solely to the implementation of the Strategy in Greece. However, most Greek stakeholders consulted agreed that the Strategy played some role. The key achievements of the implementation of the Biodiversity Strategy in Greece are:

- The expansion of the Natura 2000 network in 2017 from 6% of total marine area to 19,6%;
- The adoption of first three species action plans in 2017 (2 national for *Neophron percnopterus* and *Anser erythropus*, 1 regional for *Falco naumanni*) and the designation of national protected areas in Kyparissiakos Gulf (2018) and Gyaros island (2019);
- Greece is currently developing and implementing a MAES nationwide programme through LIFE-IP 4 NATURA;
- In 2018, Greece adopted a National Forestry Strategy, which provides for sustainable forest management;
- Fishing restrictions for specific species have been introduced (see ΦΕΚ Α'90/2018 and Β'2047/2019).

Failures on the implementation of the Strategy or failures due to the non-implementation of the Strategy are:

- Low number of Natura 2000 areas covered by a management plan and ineffective management plans of Natura 2000 areas (i.e. without sound habitat protection and management measures and conservation objectives defined)⁷¹⁷;
- Both farmland and forest bird populations are declining⁷¹⁸;
- European Commission infringement cases against Greece on various occasions of non-compliance with the Nature Directives;
- No national monitoring system for protected habitat types and species in place;
- Ecosystem restoration has not been implemented at an impactful scale;

⁷¹⁴ Tsikliras, A. C., Touloumis, K., Pardalou, A., Adamidou, A., Keramidas, I., Orfanidis, G. A., Dimarchopoulou, D., Koutrakis, M. (2021). Status and exploitation of 74 un-assessed demersal fish and invertebrate stocks in the Aegean Sea (Greece) using abundance and resilience. *Frontiers in Marine Science*.

⁷¹⁵ The Green Tank (2020). Προτεραιότητα στη φύση: Αξιολόγηση της υλοποίησης της Εθνικής Στρατηγικής για τη Βιοποικιλότητα

⁷¹⁶ <https://www.interregeurope.eu/invalidis/>

⁷¹⁷ EC (2019). The Environmental Implementation Review 2019. Country Report Greece. SWD(2019) 138 final

⁷¹⁸ ΕΚΠΑΑ (2018). Φύση-Βιοποικιλότητα. Έκθεσης Κατάστασης Περιβάλλοντος 2018 (Nature-Biodiversity. State of the Environment Report 2018)

Weak integration of biodiversity considerations into agriculture and rural development policies and low uptake of green measures in agriculture;
Absence of coherent national strategy against IAS and of a national monitoring system.

Evidence of successful implementation of focus targets

Target 3A

Overall, Target 3A has not been sufficiently implemented in Greece, however, there are examples of successful implementation of biodiversity policy in agriculture. For instance, the Ministry of Rural Development and Food adopted in their Rural Development Programme (RDP) for 2014-2020 and has started implementing four agri-environmental measures, three of which are directly related to biodiversity conservation.⁷¹⁹ In addition, Greece has taken measures to protect its rich agricultural genetic diversity and maintains a National Bank of Genetic Material. Finally, according to an expert stakeholder, agriculture has lessened its pressure to carnivore populations in the recent decades. This is due to abandoned mountainous farmland areas in Greece, allowing these animals to have more space, and stronger implementation of environmental policies that ban their killing and captivity.

Target 3B

Forests make up around 32% of the total land area of Greece. Since the beginning of the 20th century, Greece has implemented sustainable management practices for logging and grazing and has developed a strong legal framework for forest and woodland protection.⁷²⁰ According to the forest regulation, management plans have to be prepared by all forest owners (public and private), covering an extensive area of Greek forests. To comply with the National Forest Strategy, the development of management plans has been updated to incorporate, among others, requirements for sustainability and biodiversity protection.⁷²¹ Moreover, the national Forest Service has adopted practices that are in line with the EU Forest Strategy. In general, there are no evidence that the overall forest management in Greece conflicts with the general and specific targets of the EU Biodiversity Strategy.

Target 2 (MAES)

Greece has made significant progress in mapping and assessing the state of ecosystems and their services in its national territory. Since 2014, several studies conducted in Greece have mapped and assessed ecosystem services at local, regional, and national level guided by the MAES framework. Moreover, in 2017, the Hellenic Ecosystem Partnership (HESP), which coordinates the ecosystem services assessment efforts in Greece, drafted a National Agenda for the MAES implementation in Greece⁷²² and set an Action Plan to 2020. In their latest publication, HESP developed a national set of 40 indicators, which will be used to conduct a nation-wide assessment of ecosystems and their services.⁷²³ Further information on MAES-related developments in Greece can be found in the website of the Biodiversity Information System for Europe (BISE)⁷²⁴.

⁷¹⁹ Their implementation framework was determined in the Ministerial Decision published in: ΦΕΚ: 3256 Β'/18.09.2017

⁷²⁰ OECD (2020). OECD Environmental Performance Reviews: Greece 2020. Available at: https://www.oecd-ilibrary.org/environment/oecd-environmental-performance-reviews_19900090

⁷²¹ ΦΕΚ (Β' 1420/25.4.2018), ΥΑ 166780/1619/2018

⁷²² Dimopoulos, P.; Drakou, E.; Kokkoris, I.; Katsanevakis, S.; Kallimanis, A.; Tsiafouli, M.; Bormpoudakis, D.; Kormas, K.; Arends, J. The need for the implementation of an Ecosystem Services assessment in Greece: Drafting the national agenda. *One Ecosyst.* 2017, 2

⁷²³ Kokkoris, I., Mallinis, G., Bekri, E.S., Vlami, V., Zogaris, S., Chrysafis, I., Mitsopoulos, I., Dimopoulos, P. (2020). National set of MAES indicators in Greece: Ecosystem services and management implications. *Forests*, 11 (5), 595.

⁷²⁴ Available at: <https://biodiversity.europa.eu/countries/greece/maes>

Evidence of unsuccessful implementation of focus targets

Target 3A

Although agriculture in Greece has a lower impact on biodiversity loss than in other EU member states, it is still one of Greece's leading threats to species of European interest and of terrestrial habitats.⁷²⁵ Greece has a low uptake of agri-environment measures compared to EU28. The latest available data indicate that Greece has one of the lowest shares of areas subject to at least one greening obligation (43% of total utilised area in 2015) compared to the average of EU28 (75% of total utilised area in 2015).⁷²⁶ In addition, Greece has a very low level of implementation of crop diversification (28% of total arable land in 2015) compared to the average of EU28 (75% of total arable land in 2015) and of ecological focus areas (30% of total arable land in 2015) compared to the average of EU28 (70% of total arable land in 2015).⁷²⁷ Moreover, as mentioned by several stakeholders, the most frequently declared ecological focus area (EFA) types in Greece are nitrogen-fixing crops and land lying fallow, with almost no other types declared. Implementing only these two types of EFA across the country limits their effectiveness in terms of biodiversity enhancement. However, this is also a problem for the rest of the EU, with four EFA types covering 97,5% of total EFA areas. Although these points are based on 2015 data, stakeholders in Greece did not challenge these findings during the interviews. In addition, it seems that action 9b has not been implemented in Greece, as a mechanism to facilitate collaboration among farmers and foresters has not been established.

Target 3B

Although almost all Greek forests are covered by a management plan, many are old and outdated.⁷²⁸ These plans are based on sustainable practices, but rarely integrate biodiversity restoration measures if they are not protected under the Natura 2000 network. Given that about 40% of total forested and wooded area in Greece is in a Natura 2000 area,⁷²⁹ most forest land in Greece is not managed for biodiversity enhancement. In addition, evidence indicates that there is a low uptake of rural development measures and a low number of LIFE projects that target biodiversity in Greek forests. In terms of financing mechanisms to maintain and restore forests, payments for ecosystem services or other innovative mechanisms have not been deployed at any significant level.

Target 2 (MAES)

There is no evidence of unsuccessful implementation of MAES-related actions.

Key factors which have contributed to achieving objectives

Target 3A

Due to Greece's geomorphology (80% of Greece's terrestrial land is mountainous) and its small and fragmented parcels of agricultural land (over half of country's agricultural holdings are less than 2 hectares)⁷³⁰, the agriculture sector is not characterised by vast monoculture areas. Therefore,

⁷²⁵ ΕΚΠΑΑ (2019). Φύση-Βιοποικιλότητα. Επικαιροποίηση Έκθεσης Κατάστασης Περιβάλλοντος 2018 (Nature-Biodiversity. Update of the State of the Environment Report 2018).

⁷²⁶ EC (2018). Overview of green direct payments. Available at: https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/farming/documents/green-direct-payments_en.pdf

⁷²⁷ EC (2018). Overview of green direct payments. Available at: https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/farming/documents/green-direct-payments_en.pdf

⁷²⁸ Source: Stakeholder interview

⁷²⁹ OECD (2020). OECD Environmental Performance Reviews: Greece 2020. Available at: https://www.oecd-ilibrary.org/environment/oecd-environmental-performance-reviews_19900090

⁷³⁰ EC (2020). Factsheet on 2014-2020 Rural Development Programme for Greece. Available at: https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/key_policies/documents/rdp-factsheet-greece_en.pdf

agriculture in Greece has a lower impact on biodiversity than in other EU countries. For instance, although Greece has seen a decrease in farmland bird populations, the EU has on average experienced a greater drop in population numbers, due to higher intensification, homogenisation, and degradation of agricultural land.⁷³¹ Funding made available from the RDP 2014-2020 and from other sources, such as the LIFE programme, also contributed to the achievement of biodiversity-related objectives in agriculture. For example, Greece provided financial incentives to farmers to make use of protective mechanisms against damages inflicted by wild animals. This had a very positive impact on the recovering of large carnivore populations in Greece.

Target 3B

Greece is implementing sustainable forestry practices since the presidential decree of 1928, which introduced management practices for logging and grazing that promote forest sustainability. This has created a policy framework and culture of high degree of protection, which is a primary factor that contributes to the maintenance of forest biodiversity in Greece. Greece has also recently adopted a Plan for the Strategic Development of Forestry 2018-2038 (National Forest Strategy), which aims, among others, to manage and restore forest ecosystems in order to preserve them and halt the loss of their biodiversity.

Target 2 (MAES)

Due to the scientific nature of this Target, the factor that contributed the most to achieving such progress is a group of Greek scientists who believed in the importance of the MAES implementation and formed the Hellenic Ecosystem Partnership.⁷³² Much of the work on MAES indicators in Greece has been undertaken within this partnership. Another key factor of success is the LIFE Programme and the Ministry of Environment and Energy that have provided funding to most of this MAES work, through the LIFE IP 4 NATURA project.

Key factors which have hindered the achievement of objectives

Target 3A

The limited uptake of measures has been the leading factor that hindered the achievement of biodiversity objectives in agriculture. According to several stakeholders, this could be a result of the low awareness of the farmers about these measures and the general perception that conservation measures will lead to lower incomes. Another factor mentioned by stakeholders is the lack of governmental and institutional coordination that hampers a systemic targeting of the main drivers of biodiversity loss in agriculture.

Target 3B

The lack of resources in the forest sector as a whole is one of the main factors that have hindered biodiversity action in Greek forests, according to the relevant literature and stakeholder input. This refers to both the lack of funding through EU and national sources and the lower capacity of the Forest Service local authorities (i.e. they are significantly understaffed to pick up projects that benefit biodiversity and staff rarely has specialised knowledge on such forest management practices). In addition, there is limited data available on the forest management plans that are being implemented in

⁷³¹ ΕΚΠΑΑ (2018). Φύση-Βιοποικιλότητα. Έκθεσης Κατάστασης Περιβάλλοντος 2018 (Nature-Biodiversity. State of the Environment Report 2018)

⁷³² Kokkoris, IP, Mallinis, G., Bekri, ES, Vlami, V., Zogaris, S., Chrysafis, I., Mitsopoulos, I., Dimopoulos, P. (2020). National set of MAES indicators in Greece: Ecosystem services and management implications. *Forests*, 11 (5), 595.

terms of their objectives, measures, and activities.⁷³³ The lack of a database to collect and present such information to interested parties is halting a much needed overarching, country-wide understanding of the status forest management. In addition, broader data gaps persist at a more fundamental level in Greek forests, as the forest maps of Greece are still not fully ratified, which makes it very difficult to determine forest cover and use.

3.2.2 Efficiency

Key evidence on the cost efficiency of the Biodiversity Strategy as a whole

From the six Targets of the Biodiversity Strategy, Greece spent the highest amount on the management of the Natura 2000 network for the protection of species and habitats of European interest (**Target 1**). According to Greece's Prioritised Action Framework, the financial needs for the management of the total areas of the network for the 2014-2020 programming period is about €685 million. It is estimated that the total allocation to actions or sub-measures relevant to Natura 2000 in Greece for the same period was around €860 million, spent through EU (93%) and national (7%) funding from the EAFRD (77%), CF (12%), EMFF (4%), LIFE (6%), and other EU programmes (1%).⁷³⁴ Regardless of the amount spent on Target 1, the benefits cannot be clearly identified. However, it can be confidently said that the benefits generated by Natura 2000 areas on average likely exceed the costs associated with their management.⁷³⁵

In terms of the other targets, funding has been quite limited. Ecosystem restoration and GI outside of Natura 2000 areas has been only undertaken sparsely across Greece; therefore **Target 2** has not generated significant costs or benefits.⁷³⁶ In terms of **Target 4**, the main source for biodiversity-related funding for fisheries in Greece was the EMFF. For the 2014-2020 operational programme, the total EMFF and national contribution to sustainable Greek fisheries was more than €186 million.⁷³⁷ **Target 5** seems to have only generated some administrative costs from the Greek Environment and Energy Ministry for salaries and studies on the IAS, but since this has not resulted in a coordinated action against IAS in Greece, no particular benefits have emerged. Finally, **Target 6** did not give rise to any costs in Greece. In general, all stakeholders surveyed and interviewed mentioned that both the EU Biodiversity Strategy as well as the national strategy have not been adequately funded in Greece and that a national funding scheme for biodiversity is missing.

Key evidence of benefits

Target 3A

As mentioned, the 2014-2020 RDP includes four agri-environment measures, which are the main instruments of funding for biodiversity-related measures in agriculture beyond Natura 2000 in Greece. The measures include the development of forest areas (Measure 8), agri-environment actions (Measure

⁷³³ This issue is partially addressed by the LIFE project "ForestLIFE", which aims at building cooperation, developing skills and sharing knowledge for Natura 2000 forests in Greece. The project among others will establish an online collaboration platform for forests of the Natura 2000 sites of Greece, develop guidelines for their management, and train the personnel of the Greek Forest Service. Available at: <http://forestlife.gr/>

⁷³⁴ N2K Group and IEEP (in prep.) Strengthening investments in Natura 2000 and improving synergies with EU funding instruments. Contract Number: 07.0202/2018/775371/SER/ENV.D.3. Estimates of the aggregated financing costs of Natura 2000 from the Prioritised Action Frameworks 2021-2027.

⁷³⁵ ten Brink et al., (2011). Estimating the Overall Economic Value of the Benefits provided by the Natura 2000 Network. Final Report to the European Commission

⁷³⁶ The Green Tank (2020). Προτεραιότητα στη φύση: Αξιολόγηση της υλοποίησης της Εθνικής Στρατηγικής για τη Βιοποικιλότητα

⁷³⁷ European Maritime and Fisheries Fund - Operational Programme for Greece (2014 - 2020). Available at: https://ec.europa.eu/fisheries/cfp/emff/country-files_en

10), organic agriculture (Measure 11), and areas with natural or other special disadvantages (Measure 13). To what extent these measures have delivered any of the intended benefits is unclear, as no information could be found online about their stage of implementation other than the invested amount (see below). Other sources for biodiversity-related investments in agriculture is the LIFE Programme. For instance, the LIFE TERRACESCAPE project⁷³⁸, with a budget of around €2.7 million, aims to demonstrate, on the Aegean island of Andros, the use of drystone terraces as green infrastructures for a large-scale revitalisation of island terrace farming to bring “profound benefits for local societies, economies, and biodiversity”.

Target 3B

One of the four implemented agri-environment measures of the 2014-2020 RDP specifically target forests (i.e. Measure 8). In particular sub-measure 8.1 aims, through afforestation, to expand and improve Greece’s forest resources, enhance their protection and the protection of biodiversity, and mitigate and adapt to climate change. The implementation of this measure has started; however, no indication on the generated benefits was identified. In addition to the RDP, the Green Fund of the Ministry of Environment and Energy is implementing a funding programme called Forest Protection and Enhancement, which funds projects for sustainable management of forests. As for Target 3A, additional funding to biodiversity-related action in forests is provided by the LIFE programme, although this funding is mostly referring to forests in Natura 2000 areas. For instance, the LIFE ForOpenForests project, with a budget of around €1.7 million, managed forests and forest openings in two mountainous Natura 2000 sites and preserved biodiversity at species, habitat, and landscape level.⁷³⁹

Target 2 (MAES)

The benefits of the MAES implantation in Greece are multiple; however, they cannot be monetised. Some of the benefits are the expansion of the scientific knowledge base and the broader use of a framework that allows for a successful and cost-effective implementation of biodiversity action at EU level.

Key evidence of costs

Target 3A

The 2014-2020 RDP is the main source of biodiversity funding in agriculture in Greece. Through these measures more than €2 billion were made available for actions that had a positive impact on biodiversity.⁷⁴⁰ According to the RDP Tracker⁷⁴¹, in the beginning of 2021, €1.3 billion have been absorbed by farmers for Measure 13, €536 million for Measure 11, and €243 million for Measure 10. These funds were not directed specifically to biodiversity action, but rather to agricultural practices with positive impact on biodiversity preservation. Therefore, they cannot be fully attributed to the costs of Target 3A.

Target 3B

According to the RDP Tracker, €38 million have been absorbed by farmers for the implementation of sub-measure 8.1. Only for 2020, the Forest Protection and Enhancement programme made available €10

⁷³⁸ <http://www.lifeterracescape.aegean.gr/>

⁷³⁹ <http://www.foropenforests.org/>

⁷⁴⁰ This is a sum of the total amounts that became available for the sub-measures 8.1 and 8.2, Measure 10, Measure 11, and Measure 13 of the 2014-2020 Rural Development Plan

⁷⁴¹ The Ministry maintains a website that tracks and presents progress regarding the implementation of the Rural Development Plan, available here: <http://data.agrotikianaptixi.gr/index.html>

million to projects that enhance forest sustainability, and some other programmes made available smaller amounts for the same purpose. Projects that get funding from other sources are usually undertaken at local level and there is not a central system that collects such information; therefore, data on their costs are not easily accessible.

Target 2 (MAES)

Much of the research work undertaken for the MAES framework in Greece was funded through the LIFE-IP 4 Natura project. This project has been financed with €17 million; however, it is not clear how much of this is directed towards MAES-related work.

Evidence of socioeconomic impacts

Target 3A

The organic agricultural employment and income generation are still quite limited compared to conventional agricultural practices both in the EU and in Greece. However, there is a clear upward trend, which is expected to continue increasing. According to Eurostat, there were more than 30 thousand organic agricultural producers in Greece.⁷⁴² From 2015 to 2019, the number of organic farmers increased by 57%.

3.2.3 Coherence

Target 3B

There are no concrete examples of socioeconomic benefits derived from actions undertaken under Target 3B. It is evident, however, that healthy forests create tourism and recreation opportunities in rural regions in Greece, generating additional income for the local communities.⁷⁴³

Coherence with the EU 2020 Strategy

Greece is committed to the priorities of Europe 2020 to pursue smart, sustainable, and inclusive growth that focuses on innovation, addresses climate change, and creates jobs, contributing to rural development and social inclusion. The Partnership Agreement for the Development Framework 2014-2020, the main strategic plan for growth in Greece, includes the protection of the environment as one of its financing priorities and specifically mentions biodiversity protection. However, biodiversity has not been mainstreamed across Greece's national targets and current policies to achieve these objectives. Moreover, Greece's Growth Strategy⁷⁴⁴ does not include any specific biodiversity-related provisions, although it aims at integrating the sustainable way of planning set out in the UN SDGs.

Coherence with EU Sectoral Policies

There are some sectoral policies that are to a large extent coherent with the broader biodiversity policy framework. In terms of agriculture, Greece's 2014-2020 Rural Development Plan is better targeted to biodiversity conservation than any other sectoral policy, as it includes measures specifically dedicated to nature and biodiversity protection. Moreover, Greece's forest policies are to a large extent coherent with the biodiversity policy framework. As mentioned by several stakeholders, the EU Biodiversity Strategy played an important role in the formulation of the National Forest Strategy. With

⁷⁴² Eurostat (2020). Organic operators by status of the registration process (from 2012 onwards). Available at: https://ec.europa.eu/eurostat/databrowser/view/org_cotyp/default/table?lang=en

⁷⁴³ Tampakis, S., Andrea, V., Karanikola, P., & Pailas, I. (2019). The growth of mountain tourism in a traditional forest area of Greece. *Forests*, 10(11), 1022.

⁷⁴⁴ Hellenic Republic (2018). Greece: A Growth Strategy for the Future. Available at: <http://www.mindev.gov.gr/wp-content/uploads/2018/09/Growth-Strategy.pdf>

regard to the fisheries policy, biodiversity considerations are to a large extent integrated into fisheries and marine policies in Greece, since they closely follow the Common Fisheries Policy and the Marine Strategy Framework Directive. In addition, the adoption of the National Strategy on Adaptation to climate change incorporates elements related to habitats protection.

For other important sectors, biodiversity concerns are not adequately reflected on policy objectives. In terms of tourism, the Greek Ministry of Tourism implements the Green Tourism Initiative, which although aims at minimizing the environmental impact of tourism, it does not make any mention to biodiversity impacts in particular. In addition, there have been instances where climate change mitigation projects were not fully coherent with biodiversity protection objectives. According to OECD's 2020 environmental performance review of Greece⁷⁴⁵, wind farm developments do not always take biodiversity impacts into account, calling for Environmental Impact Assessments and Strategic Environmental Assessments to better integrate biodiversity considerations. Moreover, as regards R&D, the national Strategy for Research and Innovation for Smart Specialization 2014-2020 contributes to biodiversity, but only as part of the support provided to the agri-food sector.

Coherence with international biodiversity commitments

Greece's National Strategy and Action Plan for biodiversity closely follows the CBD's Strategic Plan for Biodiversity 2011-2020. Therefore, the targets included in the Greek Strategy follow closely the structure and rationale of the Aichi targets. The EU Biodiversity Strategy and its implementation in Greece is coherent with CBD's Strategy. In terms of other international agreements, the implementation of the RAC/SPA Convention for the Protection of the Mediterranean Sea Against Pollution (Barcelona Convention) and the Ramsar Convention on Wetlands is fully coherent with the biodiversity policy framework in Greece.

Coherence of EU Biodiversity Strategy

There have not been instances identified in the literature of incoherent implementation of biodiversity policies under one of the targets of the EU Strategy that would directly contradict biodiversity protection under another target. To the contrary, biodiversity-related projects usually contributed to achieving objectives of more than one targets. For instance, the LIFE-IP 4 Natura project contributes to both Target 1 and 2 simultaneously.

3.2.4 Relevance

Relevance of EU Biodiversity Strategy

Target 3A

As shown above (see Effectiveness), Greece has one of the lowest uptakes of agri-environment measures and shares of areas subject to greening obligations in the EU. Since Target 3A predominantly aims at maximizing the agricultural area covered by biodiversity-related measures, it remains highly relevant for agriculture in Greece. The target is also relevant in that it has been broad enough to provide a degree of flexibility to respond to new or emerging issues. On the other hand, it may have actually been too broad to steer effective policy action towards specific biodiversity objectives in the management of agricultural land. In terms of the associated actions of the Strategy (Actions 8, 9, and 10), they all remain relevant to the needs of the agricultural sector with regard to biodiversity action.

⁷⁴⁵ OECD (2020). OECD Environmental Performance Reviews: Greece 2020. Available at: https://www.oecd-ilibrary.org/environment/oecd-environmental-performance-reviews_19900090

Target 3B

Target 3B focuses mainly on the coverage of all forests by forest management plans or equivalent instruments. The majority of Greek forests are covered by management plans since the beginning of the 20th century and most seem to be based on sustainable practices.⁷⁴⁶ However, many of these plans do not include specific measures that protect and enhance forest biodiversity. Therefore, a shift on the focus of this target from the management plans to measurable improvements in forest biodiversity would have the potential to address more directly biodiversity issues in Greek forests. To that end, particularly relevant is Action 12 of the Strategy, which aims at ensuring that forest management plans include as many biodiversity-related measures as possible.

Target 2 (MAES)

The value of ecosystem services has to be integrated into policymaking in Greece. Implementing the MAES framework is completely relevant to this need as it provides a coherent analytical framework for mapping and assessing ecosystem services. It is also important that this is a pan-European framework, as it can be benefited by research from many European universities and does not have to rely only on national efforts.

Relevance to stakeholder needs

According to Greek stakeholders, the Strategy in general is relevant to their needs. In particular, they mentioned that the Strategy's provisions respond to their main needs by targeting their respective fields of work in a way that enables them to perform their actions. However, they mentioned that there is no formal process in Greece that ensures stakeholder engagement in the development and implementation of the targets. This to some extent limits the communication between policy makers and stakeholders and does not signal a sense of urgency that is needed to tackle biodiversity loss and ecosystem degradation.

Relevance of EU Biodiversity Strategy to MS biodiversity needs

All targets of the Strategy were fully relevant to Greece's needs in terms of biodiversity protection and enhancement in the beginning of the implementation of the Strategy. However, as mentioned by one stakeholder, the Strategy could further strengthen the integration of biodiversity across sectors to address threats and pressures emerging from the regional and urban development and the construction and tourism sectors.

Needs have not changed dramatically since 2011 and thus the Strategy and its targets remain to a large extent relevant. Although needs remain more or less the same, the lower level of action (or inaction) towards most targets has further intensified the need for urgently tackling biodiversity loss and ecosystem degradation, especially in light of the climate crisis.

3.2.5 EU added-value

Evidence of additional benefits compared to MS action

All Greek stakeholders consulted mentioned that the value resulting from the Biodiversity Strategy is additional to the value that would otherwise have been created by Member State action only through national legislation. The Strategy addresses all major drivers of biodiversity loss in Europe, and as such can constitute a comprehensive blueprint for biodiversity policy. Therefore, the Strategy gave a sense

⁷⁴⁶ Source: Stakeholder interview

of direction to the biodiversity policy in Greece. However, Greece did not fully implement its targets. According to these stakeholders, the legally non-binding nature of the Strategy seriously limited its added value. The lack of enforcement mechanisms allowed Greece to not follow through with some of their commitments, hampering the potential to significantly improve biodiversity protection in these areas. This is particularly relevant for areas covered by Target 2 (excluding MAES) and Target 5.

Evidence of change in MS ambition and/or commitments due to Biodiversity Strategy

There is a clear indication that Greece's ambition in terms of biodiversity conservation has been significantly raised over the past decade. However, the extent to which this increased ambition is related to the adoption of the EU Biodiversity Strategy cannot be easily discerned. The main instrument that sets biodiversity targets and actions in Greece is the national biodiversity strategy and its action plan. This admittedly represents an ambitious effort to tackle biodiversity loss and ecosystem degradation; however, it is unclear whether the EU Strategy had a significant effect on the development of Greece's national biodiversity strategy. The national strategy specifically mentions the obligation derived from the Convention on Biological Diversity to develop a national biodiversity strategy, which implies that this was the motivation for the development of the national strategy. On the other hand, the national strategy makes references to the EU Biodiversity Strategy and includes a table which corresponds the Aichi and EU targets to the national ones, showing that there was at least some consideration of the EU Strategy. Nevertheless, all Greek stakeholders consulted mentioned that the EU Strategy has played a central role in the design of the national strategy.

Evidence of change in sectoral ambition due to Biodiversity Strategy

There have been instances of private companies that work with NGOs on management and restoration of habitats and protection of species in Greece. Examples are the restoration of a black pine forest after fires in the Peloponnese, conservation of coastal dunes, protection of brown bear, as well as dissemination and awareness-raising activities.⁷⁴⁷ Larger businesses and foundations can also occasionally provide private funding for nature protection. Piraeus Bank for example has provided support to the LIFE-Stymfalia project, which restored Stymfalia lake and introduced a long-term plan for its management.⁷⁴⁸

Again, the extent to which the EU Biodiversity Strategy had an effect on these private sector actions is not clear. However, this enhanced company biodiversity action is undoubtedly a result of the greater importance placed on biodiversity protection at EU and international level (i.e. CBD). The EU Strategy has contributed to this greater regard of biodiversity in the eyes of the Greek civil society (i.e. citizens, NGOs, and companies), and, therefore, it probably contributed to some sectoral ambition increase.

3.3 Conclusions

Greece holds an exceptional biological wealth and substantially contributes to the European biological capital. However, the status of its biodiversity is deteriorating. **Greece's overall progress towards the EU Biodiversity Strategy targets is limited**, with a *partial progress* towards Target 1 and 2 and *limited progress* towards Target 4, 5, and 6.

⁷⁴⁷ OECD (2020). OECD Environmental Performance Reviews: Greece 2020. Available at: https://www.oecd-ilibrary.org/environment/oecd-environmental-performance-reviews_19900090

⁷⁴⁸ <http://www.lifestymfalia.gr/>

With regard to the focus targets of this case study, progress has been *limited* for **Target 3A** and *partial* for **Target 3B**. More specifically, Target 3A has not been sufficiently implemented in Greece. Although biodiversity-related measures have been introduced in the Rural Development Plan (RDP) 2014-2020 (RDP), Greece has a low uptake of agri-environment measures compared to EU28. In terms of Target 3B, Greek forests are all covered by a management plan; however, many of these are old and outdated and it is unclear how many have incorporated biodiversity conservation or ecosystem restoration measures. **MAES** activities, on the other hand, have been significantly advancing since 2014 and they are close to completion; therefore, there has been significant progress towards Action 5 of Target 2. Factors that have benefited progress towards these focus targets include the Greek agriculture sector, which has not been as extensive and intensified as in other EU countries, and the longstanding tradition of implementing sustainable forest practices in Greek forests. Factors that have hindered progress include low awareness of farmers about agri-environment measures, lack of governmental and institutional coordination, lack of resources in the forest sector, and limited availability of data.

While Greece has substantially invested in the Natura 2000 network, it is unclear whether this financing has been sufficient. In terms of the other targets, funding has been quite limited, in particular for Target 2, 5 and 6. The main sources for financing Target 3A are the RDP and the LIFE programme as well as Ministry's Green Fund, which is implementing a funding programme for forest protection and enhancement.

As regards the coherence of sectoral policies in Greece and its biodiversity policy, it seems that biodiversity considerations have been integrated in important policies for agriculture, forestry, and fisheries. However, biodiversity concerns are not adequately reflected on the overarching economic policies in Greece and on policy objectives related to tourism, climate change mitigation, and R&D. The national implementation of the EU Strategy in Greece is considered coherent with the country's international biodiversity-related commitments and the implementation of the individual targets is considered internally coherent.

The EU Strategy is considered highly relevant to the needs of the agricultural sector with regard to biodiversity action. However, Target 3B has been less relevant, as almost all forests in Greece are covered by a management plan. In addition, the Strategy is also relevant to stakeholders' needs in Greece; however, there is no formal process that ensures stakeholder engagement in target development or implementation. Finally, the Strategy has added value in Greece's biodiversity policy, as it has contributed to increasing Greece's biodiversity ambition and to formulate its national biodiversity strategy. However, this added value was limited due to the legally non-binding nature of the Strategy.

4 Germany

4.1 Introduction

4.1.1 Overview of key biodiversity state, trends, pressures and drivers

Biodiversity in Germany is under increased pressure and continues to decline, particularly in agricultural and coastal areas. The key drivers of biodiversity loss continue, most notably the loss of structural diversity in farmland, fragmentation from urban sprawl and transport infrastructure and high nutrient inputs.

The most recent state of nature report for Germany⁷⁴⁹ presents an increasingly negative trend in the conservation status of habitat types and species protected by the EU Nature Directives, most notably those associated with agricultural landscapes. Of the Annex I habitat assessments⁷⁵⁰, 30% are in favourable conservation status, 32% are unfavourable-inadequate and 37% are in unfavourable-bad conservation status¹. Of the assessments of the species of Community Importance protected by the Habitats Directive⁷⁵¹, 25% are in favourable conservation status, while 30% are in unfavourable-inadequate and 33% in unfavourable bad status¹. Overall, 50% of the species assessments and 54% of habitat assessments have a stable, improved or improving conservation trend, while 34% of species and 41% of habitat assessments have a deteriorating trend. The most negative trends were recorded for grasslands, marine and coastal habitats, inland waterways, peatlands, fens and marshes, while beech forests and habitats in the alpine region show positive trends. The declining population trends for insects (especially dragonflies), reptiles and farmland birds are most critical. Only one fifth of the evaluated arthropod species are in favourable conservation status, while 70% of the assessments are unfavourable¹.

Species-rich grassland habitats are in severe decline with more than 55% grassland habitat types in unfavourable-bad condition, and less than 10% in a favourable condition¹. Two thirds of grassland species (excluding birds) are also in unfavourable conservation status. Especially insects have continued to decline, even in protected areas, as shown by the long-term study of biomass of flying insects that recorded a decline by over 75% over the past 27 years within protected areas⁷⁵².

A third of the assessed breeding birds under the Birds Directive show an improving population trend, while simultaneously a third have declining population trends^{753,754}. The most significant population declines have been recorded for open-landscape bird species, which not only have declining abundance, but also shrinking distributions. In forest-dependent species and birds typical of urban areas, there has

⁷⁴⁹ BfN and BMU (2020) *Die Lage der Natur in Deutschland: Ergebnisse von EU-Vogelschutz- und FFH-Bericht*, Berlin: Bundesamt für Naturschutz und Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit. Available at: https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Naturschutz/bericht_lage_natur_2020_bf.pdf.

⁷⁵⁰ Out of 195 evaluations of 93 Annex I habitat types

⁷⁵¹ Out of the 365 assessments of the 195 species of Community Importance protected by the Habitats Directive

⁷⁵² Hallmann, C. A., Sorg, M., Jongejans, E., Siepel, H., Hofland, N., Schwan, H., Stenmans, W., Müller, A., Sumser, H., Hörrn, T., Goulson, D. and de Kroon, H. (2017) 'More than 75 percent decline over 27 years in total flying insect biomass in protected areas', *PLOS ONE*, 12(10), pp. e0185809.

⁷⁵³ The status of a large proportion (2/5th) of regularly occurring, migrating waterfowl is unknown.

⁷⁵⁴ BfN (2019) *Nationaler Vogelschutzbericht 2019*, Germany: Bundesamt für Naturschutz. Available at: <https://www.bfn.de/themen/natura-2000/berichte-monitoring/nationaler-vogelschutzbericht.html>.

been an increase in breeding pairs recorded for the period 2005-2009, however the overall trend over the past 24 years remains negative⁷⁵⁵.

Regarding wider biodiversity conservation beyond the EU Nature Directives, the available indicators also show that habitat and species loss in agricultural landscapes has been most dramatic, as shown by the monitoring of high nature value farmland⁷⁵⁶.

With regard to pressures on biodiversity, Germany is not on track to achieve 20 out of 25 targets of the sustainable development strategy, and legally binding requirements in water protection, air quality and climate protection were not achieved by 2020⁷⁵⁷. The state of nature report identifies the key drivers and pressures of biodiversity loss in Germany as mostly related to the type and intensity of land use, particularly intensive agriculture. As approximately 40% of the Natura 2000 sites in Germany are used for agriculture, these pressures affect a significant proportion of habitats and species listed under the nature directives.

The main drivers and pressures are^{1,758} :

- High nutrient inputs via agricultural fertilisers, atmospheric sources and water pollution from agriculture, transport, energy, and industry sectors;
- Land use changes in agricultural landscapes and forests, including the abandonment of traditional forms of use e.g. grazing of neglected grassland;
- Increased land use intensity and fragmentation e.g. through more frequent mowing of grassland, building of infrastructure;
- Drainage of agricultural and forested land, groundwater abstraction, modification of the hydrology and morphology of water bodies;
- Pesticide use, mainly in the agricultural sector but also partially in forestry sector.

The main driver of biodiversity loss has been the increasing homogenisation of the rural landscape. The continued implementation of large-scale measures such as fallow fields, flowering areas from autochthonous and regional seed mixes and buffer strips have not improved species conservation status. Protected areas are frequently small and severely impacted by outside factors like fertiliser inputs. Additionally, conventional farming is allowed at least partially within protected sites, which does not align with the conservation objectives. Nevertheless, the drivers of biodiversity decline vary across the Länder and regions, and the biodiversity loss in agricultural, urban and coastal areas is most significant, according to the indicators reported in the latest national biodiversity strategy indicator report¹⁰.

⁷⁵⁵ Gerlach, B., Dröschmeister, R., Langgemach, T., Borkenhagen, K., Busch, M., Hauswirth, M., Heinicke, T., Kamp, J., Karthäuser, J., König, C., Markones, N., Prior, N., Trautmann, S., Wahl, J. and Sudfeldt, C. (2019) *Vögel in Deutschland - Übersichten zur Bestandssituation*, München: DDA, BfN, LAG VSW. Available at: https://www.dda-web.de/downloads/publications/statusreports/statusreport_uebersichten_bestandssituation.pdf.

⁷⁵⁶ Benzler, A. and Fuchs, D. (2018) 'Biodiversität in der Agrarlandschaft: erstmals ein Stopp des Rückgangs?', *Natur & Landschaft*, 93(9/10), pp. 470-471.

⁷⁵⁷ SRU (2020) *Für eine entschlossene Umweltpolitik in Deutschland und Europa-Umweltgutachten 2020*, Berlin: Sachverständigenrates für Umweltfragen (SRU). Available at: https://www.umweltrat.de/SharedDocs/Downloads/DE/01_Umweltgutachten/2016_2020/2020_Umweltgutachten_Entsichlossene_Umweltpolitik.pdf.

⁷⁵⁸ BMU (2020) *Indikatorenbericht 2019 der Bundesregierung zur Nationalen Strategie zur biologischen Vielfalt*, Berlin: Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit. Available at: https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Naturschutz/nbs_indikatorenbericht_2019_bf.pdf.

Although there has been an overall decline in the conservation status of species and habitats associated with open landscapes, consistent local and regional action has resulted in some conservation successes (see case studies sections specific to target 2 and 3 below), especially species-specific action plans and the restoration of free-flowing rivers have been important¹.

4.1.2 Overview of the national biodiversity policy framework, governance and overall progress towards the EU and global 2020 biodiversity targets

The National Biodiversity Strategy⁷⁵⁹ sets out Germany's biodiversity objectives and actions to 2020 and beyond. It pre-empted the 2010 CBD Aichi targets, but the government decided that it covers the international targets and did not need updating to bring it into line with the CBD targets. The National Biodiversity Strategy contains around 330 concrete and often quantified targets with target years ranging from 2010 to 2020, and around 430 measures that should encourage action from state and non-state actors. The table in Annex I shows which German national targets match the EU biodiversity strategy 2020 targets. A new National Biodiversity Strategy is currently under development.

In 2015, the Federal Government recognised that the multiple goals of the National Biodiversity Strategy would not be achieved without additional efforts, and the Federal Ministry of Environment, Nature Conservation and Nuclear Safety (BMU) launched the Nature Conservation Initiative 2020⁷⁶⁰. The initiative defined ten priority action areas and 40 priority actions, with specific measures (e.g. funding programmes and initiative) for each priority area. The focus areas comprise arable land and grassland, coastal and marine areas, alluvial areas/floodplains, wilderness, protected areas, Natura 2000 and biotope network, city green, international responsibility, knowledge and understanding and financing. Additionally, the 2016 national strategy on biodiversity aspects in the federally owned areas of Germany^{761,762} details how the national biodiversity strategy should be and is being implemented in these federally owned areas. Progress on the national strategy and on the Nature Conservation Initiative are reported in Germany's 6th national report to the CBD (2020) and in the national indicator reports (most recently published in 2017 and 2020).

Financing: The funding programme associated with the National Biodiversity Strategy, the Federal Biodiversity Programme (Bundesprogramm biologische Vielfalt)^{763,764} was launched in 2011 and

⁷⁵⁹ BMUB (2007) *National Strategy on Biological Diversity*, Berlin, Germany: Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit (BMU) - Federal Ministry for the Environment, Nature Conservation and Nuclear Safety Adopted by the Federal Cabinet on 7 November 2007). Available at: <http://www.bmub.bund.de/en/service/publications/downloads/details/artikel/bmu-brochure-national-strategy-on-biological-diversity/>.

⁷⁶⁰ Arndt, T., Balzer, S., Benzler, A., Böhmer, F., Böttcher, M., Bruker, J., Dietrich, K., Dröschmeister, R., Ehlert, T., Ellwanger, G., Engels, B., Finck, P., Forst, R., Geupel, M., Hagius, A., Hildebrandt, C., Höltermann, A., Job-Hoben, B., Kieß, C., Klein, M., Krause, J., May, R., Mayer, F., Matezki, S., Metzinger, D., Mues, A., Neukirchen, B., Niclas, G., Pöllath, J., Pusch, C., Pütsch, M., Rath, U., Riecken, U., Robinet, K., Scherf, V., Schumacher, H., Schweppe-Kraft, B., Seyfert, U., Stratmann, U., Strauß, C., Sukopp, U., Ullrich, K., Züghart, W. and von Nordheim, H. (2015) *Fachinformation des BfN zur "Naturschutz-Offensive 2020" des Bundesumweltministeriums*, Bonn - Bad Godesberg: Bundesamt für Naturschutz. Available at: <https://www.bmu.de/download/fachinformation-des-bfn-zur-naturschutz-offensive-2020-des-bundesumweltministeriums/>.

⁷⁶¹ Strategie zur vorbildlichen Berücksichtigung von Biodiversitätsaspekten für alle Flächen des Bundes (Ströff)

⁷⁶² BMU (2016) *Naturschutzstrategie für Bundesflächen*: Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit. Available at: https://www.bmu.de/fileadmin/Daten_BMU/Pool/Broschueren/strategie_biodiversitaet_stroeff_bf.pdf.

⁷⁶³ Bundesamt für Naturschutz. *Leben.Natur.Vielfalt* (2019) Bundesprogramm Biologische Vielfalt.. Available at: <https://biologischevielfalt.bfn.de/bundesprogramm/bundesprogramm.html> [Accessed 15 December 2020]

⁷⁶⁴ BfN and BMU (2016) *Bundesprogramm Biologische Vielfalt-Ziele und Fördermöglichkeiten*, Bonn: Bundesamt für Naturschutz. Available at: https://biologischevielfalt.bfn.de/fileadmin/NBS/documents/Bundesprogramm/Downloads/Broschuere_Bundesprogramm_Biol_Vielfalt_bf_2018.pdf

highlights the main focus areas for federal funding. Currently, the focus is on species of national importance, biodiversity hotspots, securing ecosystem services, and further measures of representative importance for the National Biodiversity Strategy.

Federal funding for nature conservation, especially large-scale landscape protection and restoration of areas of national importance, is also available through the chance.natur⁷⁶⁵ programme. The programme has been in place for 40 years and is currently being provided with 14 million EUR per year from the German government. In total it has promoted 80 large-scale conservation projects covering around 3,700 km² ⁷⁶⁶.

Another channel for funding is the Joint Task for the Improvement of Agricultural Structures and Coastal Protection (GAK), which is the most important national funding instrument supporting agriculture and forestry, the development of rural areas and the improvement of coastal and flood protection. Financial support within the framework of the Joint Task is aimed at making the agriculture and forestry sectors efficient, competitive, and oriented towards future challenges, while safeguard the vitality of rural areas and improvement of coastal protection.⁷⁶⁷ It contains a wide range of measures to fund agricultural structures and infrastructure, overlapping with the scope of the European Agricultural Fund for Rural Development (EAFRD). To realise the Joint Task, the federal and Länder authorities agree a joint framework for a four-year financial planning period, listing the measures including the associated aims, the funding principles, eligibility conditions and the type and size of aid payments. Together with the funds provided by the Länder, the total budget of the GAK amounts to around 1.9 billion EUR per year⁷⁶⁸, of which more than 600 million EUR of federal funds is available for the development of agriculture and rural areas every year. Added to this is EAFRD funding in the order of nearly 1.2 billion EUR and funding by the Länder and municipalities.

Governance and partnerships: Fourteen out of the sixteen Länder have adopted their own biodiversity strategies and/or action plans to be in line with the national ambitions; however, progress on their implementation is unknown⁷⁶⁹. The platform “Kommunen für biologische Vielfalt”⁷⁷⁰ i.e. Communes for biodiversity was established in 2012 to network local authorities (Gemeinden, Landkreise) and cities to aid in the implementation of the strategy. The network “Unternehmen Biologische Vielfalt” brings together businesses, NGOs and the environment ministry to promote biodiversity action by industry and the services sector⁷⁷¹. The national forum on the strategy brings together more than 205 participants every year, and the federal government holds regular dialogue forums with the regional governments²¹.

⁷⁶⁵ Bundesministerium für Natur, Umwelt und nukleare Sicherheit (2019). Chance.natur Bundesförderung Naturschutz. Available at: <https://www.bmu.de/themen/natur-biologische-vielfalt-arten/naturschutz-biologische-vielfalt/foerderprogramme/chancenatur/> [Accessed 15 December 2020]

⁷⁶⁶ BMU (2020) *Germany's Sixth National Report to the CBD*, Germany: Bundesministerium für Umwelt. Available at: <https://www.cbd.int/doc/nr/nr-06/de-nr-06-en.pdf>.

⁷⁶⁷ Food and Agriculture Organization of the United Nations FAOLEX Database (2015) Germany (national level). Available at: <http://www.fao.org/faolex/results/details/en/c/LEX-FAOC150344/> [Accessed 15 December 2020]

⁷⁶⁸ Federal Ministry of Food and Agriculture (2020) Joint Task for the “Improvement of Agricultural Structures and Coastal Protection” Available at: <https://www.bmel.de/EN/topics/rural-regions/rural-development-support/gak.html> [Accessed 15 December 2020]

⁷⁶⁹ BMU (2017) *Biologische Vielfalt in Deutschland Rechenschaftsbericht 2017*: Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit. Available at: https://www.bmu.de/fileadmin/Daten_BMU/Pools/Broschueren/biologische_vielfalt_bf.pdf.

⁷⁷⁰ Kommunen für biologische Vielfalt (2020) Home page. Available at: <https://www.kommmbio.de/home/> [Accessed 15 December 2020]

⁷⁷¹ BfN and BMU (2017) *Unternehmen Biologische Vielfalt*, Bonn, Germany: Bundesamt für Naturschutz & Bundesministerium Umwelt. Available at: http://www.biologischer Vielfalt.de/fileadmin/NBS/documents/UBI/UBi2020_Infolyer.pdf.

The administrative landscape for the implementation of environmental policy in Germany is complex and fragmented. The updated Federal Nature Conservation Act (Bundesnaturschutzgesetz-BNatSchG) is the legal framework for nature conservation implementation in Germany and legally anchors the EU nature directives. The Federal Agency for Nature Conservation (BfN) plays a central role in implementing the Federal Conservation Act, as the federal authority responsible for monitoring and reporting, supporting the implementation of the Nature Directives and development of strategic documents (e.g. PAF and Federal Concept on Green Infrastructure). It works together with the responsible nature conservation authorities at Länder level. The BMU has few responsibilities for monitoring environmental action and the implementation of the federal law, but prepares legal regulations for implementation of specific actions, including the transposition of EU and international provisions into national law. The Federal Nature Conservation Act calls for all public authorities at the federal and Länder level (even those not directly connected to nature protection) to be engaged from the start of planning processes of action plans and measures that could affect the state of nature. At the Länder level, the authorities involved in the implementation process of environmental policy can be either administrative authorities or specialised bodies, depending on the legal framework of the specific Land (state). All the highest nature conservation authorities of the Länder and at the federal level are collectively organised through the joint federal working group on nature conservation, landscape management and recreation (LANA) which meets twice a year to exchange information and ensure harmonised implementation, and cooperates with other working groups, such as LAWA (the working group for water).

The following paragraphs give a short summary of overall progress in Germany on Targets 1, 3b, 4, 5 and 6, which are not the focus of this case study. The horizontal objectives of financing, partnerships, and strengthening the knowledge base, are discussed in the next section in relation to the two focus targets.

Progress on Target 1: Although the Natura 2000 network in Germany is mostly complete, with the majority of sites having conservation measures in place, a lack of funding directed towards the implementation of conservation measures has hindered significant improvements in the conservation status of species and habitats.

The Natura 2000 network in Germany covers 15.5% of the terrestrial and 45% of the marine area in 2020¹ and is considered to be almost complete for terrestrial sites and 100% complete for marine. The responsibility of developing conservation measures for Natura 2000 site designation and definition of conservation measures lies with the Länder for terrestrial sites and with the federal government for the marine sites. 74% of the area of 4,544 SACs and 49% of the area of SPAs (total 742) have the required conservation measures in place. 74.6% and 45% of the SACs and SPAs have management plans in place respectively⁹. The BfN reports slightly higher numbers stating that by the beginning of 2020, legal protection has been secured for over 98% of the SACs and conservation measures have been defined for approximately 85% of the sites, mainly via management plans⁷⁷². Due to the EU's infringement proceedings against Germany, the Länder and federal government are pursuing the completion of management plans in the Natura 2000 areas with high priority¹⁰. A joint recommendation for Natura 2000 sites in the North Sea EEZ has been submitted to the EU Commission, while measures for the Natura 2000 sites in the Baltic are still being developed.

⁷⁷² BfN input to the survey.

Nevertheless, insufficient funding, particularly through the European Agricultural Fund for Rural Development (EAFRD), is hindering the implementation of the required conservation measures in German protected sites. The financial requirements for the implementation of Natura 2000 alone are estimated at approximately 1.4 billion EUR/year in Germany, while only approximately 323 million EUR/year was spent on conservation measures via the 2nd pillar of the CAP between 2009 and 2013¹. Between 2014-2020 Germany had around 1.35 billion EUR/year available in EAFRD funds⁷⁷³, however on average only 21% of EAFRD funds (i.e. around 284 million EUR/year) and the national co-financing funds were spent on agri-environment-climate measures⁷⁷⁴.

Regarding improvements in the conservation status of species and habitats, progress has been slow and mostly localised (e.g. Alpine streams). Overall, there has been an improvement in the conservation status trends for 52 species and 19 habitats in comparison to 2013⁷⁷⁵. The most necessary change to improve the conservation status of species and habitats, alongside better financing, and resource provisioning, is to change land use and management, especially focusing on agriculture, in areas within or in proximity to Natura 2000 sites.

Progress on Target 3b: Forest area has remained relatively stable in Germany and there are some indications of improvements in species diversity. However, there is still evidence that conservation measures are not prioritized in management plans and economic interests take precedence.

In the indicator report for the national biodiversity strategy, the sub-indicator for species diversity and landscape quality in forests has shown a positive trend and lies within the target area¹⁰. The area of forested land in Germany fluctuates only slightly, having remained relatively stable at 32%, and forests are largely unaffected by land take resulting from settlement and transport measures¹⁸. In 2019, 2.8% of forest land was developing naturally on a permanent, legally secured basis, and 5.6% of forest area in Germany is currently not used, i.e. classed as no-take, if inaccessible areas are included¹⁸. Many federal states have incorporated the 5% or 10% target for natural forest development in their programmes and/or strategies. Most of the federal states will achieve the target of excluding 10% of state forest from use in the next few years; some have already achieved this target. Nevertheless, the proportion of forest area left to develop naturally lies below the National Biodiversity Strategy 5% target for 2020.

The evaluation of the German forest strategy to 2020⁷⁷⁶ concluded that the national strategy has been successful overall with the majority of targets met. However, the strategy did not include the targets of the National Biodiversity Strategy and it failed to set criteria and definitions for sustainable forest management (“guten fachlichen Praxis“), as pointed out by the NGO NABU position on the strategy

⁷⁷³ Federal Ministry of Food and Agriculture (2020) Main features of the Common Agricultural Policy (CAP) and its implementation in Germany. Available at: <https://www.bmel.de/EN/topics/farming/eu-agricultural-policy-and-support/CAP-main-features-implemantation-germany.html> [Accessed 15 December 2020]

⁷⁷⁴ Bundesministerium für Ernährung und Landwirtschaft (2020) Umsetzung der ELER-Förderperiode 2014 bis 2020 für ländliche Räume in Deutschland. Available at: <https://www.bmel.de/DE/themen/laendliche-regionen/foerderung-des-laendlichen-raumes/eu-foerderung/eler-2014-2020-umsetzung.html> [Accessed 15 December 2020]

⁷⁷⁵ Bundesamt für Naturschutz (2019) Nationaler Bericht 2019 gemäß FFH-Richtlinie. Available at: <https://www.bfn.de/themen/natura-2000/berichte-monitoring/nationaler-ffh-bericht.html> [Accessed 15 December 2020]

⁷⁷⁶ Thünen-Institut (2018). Evaluierung der Umsetzung der Waldstrategie 2020-Zusammenfassung. Available at: [https://www.thuenen.de/media/institute/wf/div_pdf Dateien/WS-Evaluierung-Zusammenfassung.pdf](https://www.thuenen.de/media/institute/wf/div_pdf>Dateien/WS-Evaluierung-Zusammenfassung.pdf) [Accessed 15 December 2020]

when it was published in 2011⁷⁷⁷. There remains tension between forest owners and managers and nature conservation, particularly in the Natura 2000 sites, where often there are no management plans and the required conservation measures are not prioritized⁷⁷⁸.

The federal government provides funding for private and municipal forests through the GAK. The most important improvements occurred in 2016/2017 when an amendment to the GAK expanded the Joint Task's remit to include contractual nature conservation and landscape management in the context of environmentally sound land management that is tailored to the market and to the individual site. In addition, EU co-financing of GAK funding from EAFRD was allowed through the measures for investments improving the resilience and environmental value of forest ecosystems, Natura 2000 payments and forest environmental and climate services schemes. However, a large proportion of the public funding for forests through GAK is still tied to the objective of strengthening economic production through timber (GAKG §2)⁷⁷⁹.

The TEEB (The Economics of Ecosystems and Biodiversity) initiative in Germany has carried out an economic assessment of forest ecosystem services and an assessment of the public goods provided by forests and their recreational value, which further research has built on Bösch et al. (2018)⁷⁸⁰ and Elsasser and Weller (2013)⁷⁸¹, and the Thünen Institute has developed a detailed concept for rewarding the ecosystem services of forests in Germany³¹.

Progress on Target 4: A slow improvement in fished stocks based on maximum sustainable yield has been observed in German waters, however the target to achieve sustainable fishing target has not yet been met for some stocks. There is tension between conservation and socioeconomic goals in the fisheries context.

Fish stocks remain in a poor state in the Baltic Sea and North Sea. Of the commercially exploited fish stocks in the German North Sea EES that are fully assessed by the International Council for the Exploration of the Sea (ICES), four out of seven stocks are overfished and only the Plaice population is within safe biological limits⁷⁸².

⁷⁷⁷ Die NABU Waldstrategie (2011) „Waldwirtschaft 2020“: Wälder statt Forste. Available at: <https://www.nabu.de/natur-und-landschaft/waelder/waldbewirtschaftung/waldwirtschaft2020.html> [Accessed 15 December 2020]

⁷⁷⁸ Pers. Comm. Interview BfN

⁷⁷⁹ Elsasser, P., Köthke, M. and Dieter, M. (2020) *Ein Konzept zur Honorierung der Ökosystemleistungen der Wälder*, Hamburg, Germany: Thünen-Institut für Internationale Waldwirtschaft und Forstökonomie Thünen Working Paper 152). Available at:

https://www.researchgate.net/publication/343944389_Ein_Konzept_zur_Honorierung_der_Okosystemleistungen_der_Waelder.

⁷⁸⁰ Bösch, M., Elsasser, P., Franz, K., Lorenz, M., Moning, C., Olschewski, R., Rödl, A., Schneide, H., Schröppel, B. and Weller, P. (2018) 'Forest ecosystem services in rural areas of Germany: Insights from the national TEEB study', *Ecosystem Services*, 31, pp. 77-83.

⁷⁸¹ Elsasser, P. and Weller, P. (2013) 'Aktuelle und potentielle Erholungsleistung der Wälder in Deutschland: Monetärer Nutzen der Erholung im Wald aus Sicht der Bevölkerung', *Allgemeine Forst und Jagdzeitung*, 184, pp. 84-96.

⁷⁸² Bundesamt für Naturschutz (2019) Impacts on commercial species. Available at: <https://www.bfn.de/en/activities/marine-nature-conservation/pressures-on-the-marine-environment/fisheries-and-fish-stocks/impacts-on-commercial-species.html> [Accessed 15 December 2020]

Most of the Baltic Sea fish stocks with reference points are fished at or below F_{MSY} ⁷⁸³. In the 2012 initial assessment of the German parts of the North and Baltic Seas, the federal government and the Länder concluded that marine waters were not in a good status, particularly concerning benthic habitats and species, fish, seabirds, phytoplankton and, especially in the Baltic Sea, marine mammals⁷⁸⁴. The German government report to the CBD concludes that a lack of available fishery and environmental data, along with the limited control options is hindering significant improvements since the initial assessment¹⁸.

Progress on Target 6: Significant increase in international funding for biodiversity conservation and actions against illegal wildlife trade. Some initiatives to reduce environmentally harmful subsidies, transition to sustainable consumption, and reduce waste but little evidence of impact so far.

The German government reviews the sustainability of existing subsidies every two years and tracks environmentally harmful subsidies⁷⁸⁵. The latest report concluded that although there has been some progress in ensuring funding streams are sustainable and do not contribute to biodiversity loss, it has been insufficient. The report estimated that the government's energy and electricity tax rebates to industry, forestry and agriculture are costing German citizens 3 million Euros a year, because of the lack of incentive to save energy³⁷.

The German government adopted the National Programme on Sustainable Consumption in 2016 and established a national competence centre for sustainable consumption. However, the government's report to the CBD stated that implementation of the national programme is still in its infancy¹⁸. The national food waste strategy published in 2019⁷⁸⁶ followed the publication of a series of studies on the volumes of food waste in Germany and possible policy instruments from 2012 onwards, but the strategy is too new to have had any proven impact yet. The 'KonsumWende' (transition to sustainable consumption) project (2017-2019)⁷⁸⁷ aimed to develop tools and policy recommendations that can promote consumption patterns that lead to the conservation of biodiversity and ecosystem services in developing countries and emerging economies. Additionally, there is an ongoing project on developing biodiversity criteria for public procurement¹⁸.

Although only about 1.3% of Germany's total official development assistance (ODA) was devoted to international funding for the protection of biodiversity in 2007 this had risen to 5.2% by 2013. That is a four-fold increase, so the goal of a 50% increase by 2015 was more than exceeded. Additionally, the German government fulfilled the pledge made by Chancellor Merkel in 2008 at the Ninth CBD COP to

⁷⁸³ ICES (2019) *ICES Fisheries Overviews - Baltic Sea Ecoregion- Fisheries Overview*: International Council for the Exploration of the Sea. Available at:

http://ices.dk/sites/pub/Publication%20Reports/Advice/2019/2019/BalticSeaEcoregion_FisheriesOverviews.pdf.

⁷⁸⁴ BMU (2016) *MSFD Programme of Measures for Marine Protection in the German Parts of the North Sea and the Baltic Sea Report pursuant to Article 45h(1) of the Federal Water Act*, Bonn Federal Ministry for Environment, Nature Conservation, Construction and Nuclear Safety. Available at: https://www.meeresschutz.info/berichte-art13.html?file=files/meeresschutz/berichte/art13-massnahmen/MSFD_Art13_Programme_of_Measures_English-Summary.pdf.

⁷⁸⁵ UBA (2017) *Umweltschädliche Subventionen in Deutschland: Aktualisierte Ausgabe 2016*, Dessau-Roßlau, Germany: Umweltbundesamt. Available at: https://www.umweltbundesamt.de/sites/default/files/medien/479/publikationen/uba_fachbroschuere_umweltschaedliche-subventionen_bf.pdf.

⁷⁸⁶ BMEL (2019) *National Strategy for Food Waste Reduction*, Berlin: Bundesministerium für Ernährung und Landwirtschaft. Available at: https://ec.europa.eu/food/sites/food/files/safety/docs/fw_lib_fwp-strat_national-strategy_deu_en.pdf.

⁷⁸⁷ Institut für ökologische Wirtschaftsforschung (2019) *Konsumwende*. Available at: <https://www.ioew.de/en/project-single/konsumwende> [Accessed 15 December 2020]

provide €500 million in international funding each year to protect forests and other important ecosystems starting in 2013. Some €500 million was provided for this purpose worldwide in 2015¹⁸. In addition to funding from the area of development cooperation, funding also come from the budgets of BMU and BMEL.

To address problems regarding the sustainability of wildlife trade, the BMU, together with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ; provider of international cooperation services, a federal enterprise) and the Ministry for Economic Cooperation and Development (BMZ) implemented around 30 measures against illegal ivory and rhino horn trade, with a total volume of 2,5 Million Euro, including activities to reduce the demand in target countries (like China or Vietnam) and to prevent poaching in the source countries¹⁸.

Under German initiative, the Bonn Challenge⁷⁸⁸ was developed in 2011 to restore forests globally. The overall goal was achieved in 2017 with multiple countries dedicated to restoring 150 million ha of degraded forest area by 2020¹⁸.

Compliance measures are implemented under the Nagoya Protocol with the BfN responsible for the overall implementation. The BfN has raised awareness of the Nagoya Protocol and ABS obligations, including EU Due Diligence Systems among important stakeholder groups, however further work is needed including capacity development. In 2018 the first compliance controls were started, along with due diligence declarations and Checkpoint-Communiqués published in the ABS clearing house mechanism. Nevertheless, it is too early to determine the effectiveness and efficiency of the EU compliance measures¹⁸.

4.1.3 *Choice of targets to focus the national case studies, and justification*

Targets 2, 3a and 5 are the focus for the German case study. The reasons for these choices in Germany were:

Target 2 - Germany was one of the countries which completed a Restoration Prioritisation

Framework and targeted national funding and initiatives to promote green infrastructure and no net loss. Germany contains a wide range of ecosystems and habitats from mountains (alpine region) to marine (both Baltic and Atlantic regions) and hills and plains with agricultural, forest, wetland and heath or scrub habitats. Biodiversity is under significant pressure from urbanisation and grey infrastructure;

Target 3a agriculture - Germany has a relatively intensive agriculture sector, which is among the most important pressures on terrestrial biodiversity. The implementation of sustainable use policies is complex, due to the federalised governance structure. The Common Agricultural Policy is a key source of funding for sustainable agriculture and conservation agriculture in protected areas and high nature value farmland, but stakeholders and studies have repeatedly pointed to the funding gap between needs and available budget from CAP for measures that actually benefit biodiversity;

Target 5 (invasive alien species) - Germany has taken extensive action and has good quality data.

⁷⁸⁸ Restore our Future Bonn Challenge (2020) The Bonn Challenge. Available at: <https://www.bonnchallenge.org/> [Accessed 15 December 2020]

4.2 Country-specific biodiversity target focus

4.2.1 Effectiveness

Overall progress towards the EU Biodiversity Strategy

Target 2

Germany has carried out some large-scale restoration of rivers, floodplains, and peatlands, including developing innovative approaches. However, the initiatives and funding have not yet led to significant progress in restoration in the face of the continuing drivers of degradation, fragmentation, and habitat loss. The initiative to green cities has had the most political success.

The focus of German policy and funding has been on restoring peatlands, meadows and floodplains and integrating nature into cities. However, the national biodiversity indicator report 2019 concluded that there has been no significant change in the conservation status of wetlands and floodplains; successes remain localised and there is continuing degradation⁷⁸⁹. Two thirds of the original floodplain areas along major rivers have been lost and the ecological status of floodplains and water bodies remains significantly below the targets in the national strategy, with 8% of floodplains intact (i.e. only minimally modified) and 54% with strong to very strong modification^{789,790}. There is continuing deterioration of peatlands and a decline in associated species. The main cause is the altered water regime due to extraction and drainage which is exacerbated by climate change¹.

Germany published a Prioritisation Framework for ecosystem restoration in 2015⁴¹. The framework prioritised the restoration of wetlands (including bogs, fens, peatlands, and marshes) and flood plains (including grasslands) and provided funding mainly through the federal chance.natur programme. Although this set a precedence prioritising funding, no significant on the restoration process was made⁷⁹¹. While wetlands and peatlands were declared as a restoration priorities, there was no national overview of progress regarding qualitative and quantitative successes of restoration measures. Even at the Länder level, such an overview is not available.

Most progress has been made in rivers and waterways, and the federal programme Germany's Blue Belt (2017) and the nationwide flood protection programme (2015) have been important policy developments. Restoration successes occur mainly at the Länder or regional level and often due to the initiative of NGOs (e.g. NABU's Havel river restoration project, restoration of large parts of the river Elbe and Danube). Restoration measures to improve the connectivity of watercourses have been carried out throughout Germany, as documented on the EEA [Biodiversity Information System Europe](#) (BISE)⁷⁹². The federal funding programme chance.natur has been a key funding source for river restoration projects, such as the Lower Havel restoration, which has been running since 2005 and aims to restore 96 km of the river and its floodplains. Other notable restoration projects have been successfully carried out on the Lippe (North Rhine-Westphalia), the Ahr (North Rhine-Westphalia/Rhineland-Palatinate), and alpine rivers throughout Bavaria¹. In the past 25 years, 150 wetland restoration projects have been

⁷⁸⁹ BMU (2015) *Priorisierungsrahmen zur Wiederherstellung verschlechterter Ökosysteme in Deutschland (EU-Biodiversitätsstrategie, Ziel 2, Maßnahme 6a)*: Bundesministerium für Umwelt. Available at: https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Naturschutz/oekosysteme_priorisierungsrahmen_bf.pdf

⁷⁹⁰ BMU and Bundesamt für Naturschutz (2015) *Den Flüssen mehr Raum geben-Renaturierung von Auen in Deutschland*, Berlin. Available at: https://www.bmu.de/fileadmin/Daten_BMU/Pool/Broschueren/auen_in_deutschland_bf.pdf.

⁷⁹¹ Pers. Comm. Interview NABU

⁷⁹² Trinomics, ALTERRA, Arcadis, Risk & Policy Analysis, STELLA Consulting and Regional Environmental Centre (2016) *Supporting the Implementation of Green Infrastructure*: Trinomics B.V. Final Report to the European Commission under Service Contract ENV.B.2/SER/2014/0012). Available at: http://ec.europa.eu/environment/nature/ecosystems/docs/green_infrastructures/GI%20Final%20Report.pdf.

carried out and approximately 5,500 ha of floodplains along 22 rivers have been regained, totalling approximately a 1% gain in floodplain area¹⁰. The updated wetland status report expected in 2021 will contain further information on trends.

The federal government programme, Germany's Blue Belt (Blaues Band Deutschland)⁷⁹³, launched in February 2017, aims to renaturalise federal waterways and their riparian zones over the next 30 years. It provides a framework to implement the requirements under the Water Framework Directive to reach good ecological status in waterbodies and to develop green and blue infrastructure for the protection of ecosystems and ecosystem services under the EU Biodiversity Strategy 2020. The programme seeks to improve the status and connectivity of rivers, considering that 70% of the federal waterways are classified as highly modified and research carried out under the programme shows that 250 dams hinder the flow of rivers that were studied⁴⁵.

The nationwide flood protection programme which launched in 2015 has also been important for floodplain restoration and is the driving policy behind dike relocations. Under this programme, the government supports the implementing large-scale retention measures to improve supra-regional flood prevention. By prioritising flood prevention, the programme ensures rivers more space to develop synergies for nature conservation⁷⁹⁴.

The aim to establish a biotope network on at least 10% of the land area in Germany has been anchored in the Federal Conservation Act since 2003. The German national biodiversity strategy set the goal of restoring the ecological connectivity of fragmented landscapes by 2020. The Federal Defragmentation Programme was adopted in 2012 with six goals and actions in road construction, nature conservation, and spatial planning⁷⁹⁵. However, the German government's 2017 report on progress under the national biodiversity strategy concluded that progress by the Länder was too slow²¹.

The National Green Infrastructure Concept launched in 2014^{796,797} aimed to implement the EU Biodiversity Strategy by establishing green infrastructure, including the restoration of ecosystem services and the protection of natural capital. It presents an additional prioritisation frame for restoration measures in Germany. It focuses on protected sites and ecological networks as the backbone of green infrastructure. Under this framework progress has been made in developing technical concepts like Germany's Blue Belt (described above).

In 2013, the German government launched an integrated long-term initiative 'Green in the city' ("Grün in der Stadt") to encourage greening of urban areas to make them more liveable and resilient and since 2017 Programme Future City Green (Förderprogramm Zukunft Stadtgrün) with 50 million Euro is

⁷⁹³ BfN and BMU (2017) *Bundesprogramm Blaues Band Deutschland*, Berlin. Available at: https://www.blaues-band.bund.de/Projektseiten/Blaues_Band/DE/neu_05_Informationen/Broschuren/BBD_Zukunftsperspektive.pdf?__blob=publicationFile&v=5

⁷⁹⁴ Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit (2014) Nationales Hochwasserschutzprogramm. Available at: <https://www.bmu.de/faqs/nationales-hochwasserschutzprogramm/> [Accessed 15 December 2020]

⁷⁹⁵ BMUB (2012) *Bundesprogramm Wiedervernetzung*. Germany: Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit [Webpage]. Available at: <http://www.bmub.bund.de/themen/natur-biologische-vielfalt-arten/naturschutz-biologische-vielfalt/gebietsschutz-und-vernetzung/biotopverbund/>

⁷⁹⁶ BfN (2017) *Bundskonzept Grüne Infrastruktur- Grundlagen des Naturschutzes zu Planungen des Bundes*, Bonn: Bundesamt für Naturschutz. Available at: https://www.bfn.de/fileadmin/BfN/planung/bkgi/Dokumente/BKGI_Broschuere.pdf.

⁷⁹⁷ Bundesregierung (2014) *Antwort der Bundesregierung: Grüne Infrastruktur - Nutzen für Mensch und Tier*, Berlin. Available at: <http://dip21.bundestag.de/dip21/btd/18/035/1803579.pdf> [Accessed 15 December 2020]

available for federal states and communes for measures to improve urban green infrastructure, for example through urban development measures, renovation and linking public green spaces²¹. However, thus far efforts to green cities have not been measured and there is no information on the quality indicators like fragmentation, connectivity, accessibility, or maintenance/condition of green spaces, so it is not possible to document progress.

State of knowledge base: Despite significant investment in research and knowledge building, there is no agreement on a national-level indicator plan for ecosystems and their services in Germany (although a concept is under development), and no national ecosystem assessment.

A proposal for national ecosystem services indicators⁷⁹⁸ and options for a national assessment of ecosystems^{799,800} were developed. However, an integrated environmental and economic accounting system is still in its infancy in Germany. To improve the recording of data on ecosystem services in Germany, the BfN has carried out investigations into the importance of certain ecosystems and their services e.g. near-natural riparian zones, for the mitigation of flood damage and removal of contaminants and water pollution; grassland, for groundwater quality and climate change mitigation; near-natural forests, to address climate change mitigation and adaptation; peatlands as carbon sinks (climate change mitigation); cultural ecosystem services: nationwide registration of the suitability of the landscape for recreation and of the demand for recreation, the importance of urban green spaces for recreation, health and wellbeing.⁸⁰¹ The Natural Capital Germany - TEEB DE project⁸⁰² is utilising existing knowledge from case studies on the value of ecosystem services. A national system of physical indicators is being devised for the systematic, nationwide recording and mapping of the state of ecosystems in Germany and the services they provide. In October 2016, the BfN awarded the contract for a research and development project relating to ecosystem monitoring on nationally representative observation sites⁸⁰³, which followed up on a feasibility study on the same subject done in 2015. The aim was to establish the basis for creating a uniform federal ecosystem monitoring method that can be used to obtain previously unavailable data about the status and development of ecosystems. The project ended in October 2019 and thus far no information on its final achievements is available.

⁷⁹⁸ Albert, C., Burkhard, B., Daube, S., Dietrich, K., Engels, B., Frommer, J., Götzl, M., Grêt-Regamey, A., Job-Hoben, B., Keller, R., Marzelli, S., Moning, C., Müller, F., Rabe, S.-E., Ring, I., Schwaiger, E., Schweppe-Kraft, B. and Wüstemann, H. (2015) *Development of national indicators for ecosystem services: recommendations for Germany*, Bonn-Bad Godesberg, Germany: Bundesamt für Naturschutz - Federal Agency for Nature Conservation, BfN-Skripten 411. Available at: <https://www.bfn.de/fileadmin/BfN/service/Dokumente/skripten/skript411.pdf>.

⁷⁹⁹ Albert, C., Neßhöver, C., Schröter, M., Wittmer, H., Bonn, A., Burkhard, B., Dauber, J., Döring, R., Fürst, C., Grunewald, K., Haase, D., Hansjürgens, B., Hauck, J., Hinzmann, M., Koellner, T., Plieninger, T., Rabe, S.-E., Ring, I., Spangenberg, J. H., Stachow, U., Wüstemann, H. and Görg, C. (2017) 'Towards a National Ecosystem Assessment in Germany: A Plea for a Comprehensive Approach', *GAIA - Ecological Perspectives on Science and Society*, 26(1), pp. 27-33.

⁸⁰⁰ Albert, C., Neßhöver, C., Wittmer, H., Hinzmann, M. and Görg, C. (2014) *Sondierungsstudie für ein Nationales Assessment von Ökosystemen und ihren Leistungen für Wirtschaft und Gesellschaft in Deutschland*: Helmholtz-Zentrum für Umweltforschung - UFZ. Available at: https://www.ufz.de/export/data/global/62122_UFZ_StudieNEA-DE08_2014EOnline.pdf.

⁸⁰¹ Bundesamt für Naturschutz, Bundesprogramm (2020) Übersicht Projekte Ökosystemdienstleistungen. Available at: <https://biologischesvielfalt.bfn.de/bundesprogramm/ueberblick/projekte-nach-foerderschwerpunkten/uebersicht-projekte-oekosystemleistungen.html> [Accessed 15 December 2020]

⁸⁰² Naturkapital Deutschland-TEEB DE (2021) Ökosystemleistungen: Was die Natur uns gibt. Available at: <https://www.ufz.de/teebde/> [Accessed 15 December 2020]

⁸⁰³ F+E Vorhaben (2016) Ökosystem-Monitoring auf bundesweit repräsentativen Stichprobenflächen. Available at: https://www.hs-osnabrueck.de/fileadmin/HSOS/Homepages/Personalhomepages/Personalhomepages-AuL/Haenel/pdf/18_Oekosystemmonitoring.pdf [Accessed 15 December 2020]

Target 3a

The biodiversity associated with agriculture in Germany has mostly deteriorated further in the last decade, and the greening of the CAP was considered by the conservation community to have failed. In contrast, the conservation of agricultural genetic diversity has shown some successes.

The status of biodiversity associated with agricultural landscapes in 2020 is alarming (especially regarding wild plant species, farmland birds and insects)^{1,8} and negative trends are reported for the indicators of the national biodiversity strategy targets associated with agriculture. Butterfly and farmland bird populations have decreased by 50% since the 1980/90s and the biomass of flying insects has declined by 75% since 1989. Of the 14 use-dependent open land biotopes, 80% are endangered and other habitats like peatland, forests, shrubland are affected by the agricultural use in their vicinity⁸⁰⁴. The proportion of farmland with high nature value has decreased from 13,1% in 2009 to 11,4% in 2017⁸⁰⁵. Between 1993 and 2015, Germany lost 574,000 ha of permanent grassland⁸⁰⁶, although the since 2015 most Länder have legal provisions preventing the conversion of permanent grassland to arable without an EIA and a permit, and the overall area of permanent grassland has remained more or less stable since⁸⁰⁷.

Studies that discuss the possible reasons behind the continuing decrease of biodiversity in the agricultural landscapes indicate that pesticide use, factors affecting farmer's uptake of measures under the CAP pillars and insufficient effectiveness of the rural development programmes are the main barriers to biodiversity conservation (these factors are described in detail in the sections below)^{56,808}. Exceedance of nitrogen critical loads is also a key factor (see key factors section below).

Germany has invested in the conservation of agricultural genetic diversity for the last two decades. The government's 6th national report to the CBD considers that the measures related to animal genetic resources have been successful though still in need of further development¹⁸. The German rural development programmes and the GAK framework plan include support options for rearing local breeds in danger of being lost to farming.

The Federal Ministry of Food and Agriculture (BMEL) has run sectoral programmes to implement the national agro-biodiversity strategy since 2002. The National Sectoral Programme for the Conservation and Sustainable Use of Plant Genetic Resources from Agricultural and Horticultural Crops was updated in 2012 and is currently under revision. It focuses on ex-situ conservation in gene banks, on-farm

⁸⁰⁴ Niggli, U., Gerowitt, B., Brühl, C., Liess, M., Schulz, R., Altenburger, R., Bokelmann, W., Büttner, C., Hartenbach, M., Heß, J., Märkländer, B., Miedaner, T., Nödler, K., Petercord, R., Reineke, A., Kröcher, C. v. and Wissenschaftlicher Beirat des Nationalen Aktionsplans Pflanzenschutz beim BMEL (2019) *Pflanzenschutz und Biodiversität in Agrarökosystemen*, Germany: Stellungnahme des Wissenschaftlichen Beirats des Nationalen Aktionsplans Pflanzenschutz beim Bundesministerium für Ernährung und Landwirtschaft. Available at: <https://www.bmel.de/DE/ministerium/organisation/beiraete/nap-organisation.html>.

⁸⁰⁵ Bundesamt für Naturschutz (2019) The High Nature Value Farmland indicator in Germany. Available at: <https://www.bfn.de/en/activities/monitoring/hnv-farmland-indicator.html> [Accessed 15 December 2020]

⁸⁰⁶ BMEL (2019) *Zur effektiven Gestaltung der Agrarumwelt- und Klimaschutzpolitik im Rahmen der Gemeinsamen Agrarpolitik der EU nach 2020*, Berlin: Wissenschaftlicher Beirat für Agrarpolitik, Ernährung und gesundheitlichen Verbraucherschutz beim BMEL (Stellungnahme). Available at: <https://www.bmel.de/DE/Ministerium/Organisation/Beiraete/Texte/AgrVeroeffentlichungen.html>.

⁸⁰⁷ Schoof, N., Luick, R., Ackermann, A., Baum, S., Böhner, H., Röder, N., Rudolph, S., Schmidt, T., Hötter, H. and Jeromin, H. (2019) *Auswirkungen der neuen Rahmenbedingungen der Gemeinsamen Agrarpolitik auf die Grünland-bezogene Biodiversität*, Germany: Bundesamt für Naturschutz BfN-Skripten 540). Available at: https://www.thuenen.de/de/lr/projekte/auswirkungen-der-eu-agrarpolitik-auf-den-erhalt-der-biodiversitaet-des-gruenlands/?no_cache=1

⁸⁰⁸ Joorman, I. and Schmidt, T. (2017) *Hindernisse und Perspektiven für mehr Biodiversität in der Agrarlandschaft*. Available at: https://www.thuenen.de/media/publikationen/thuenen-workingpaper/ThuenenWorkingPaper_75.pdf

management to ensure the conservation of native crops, the creation of genetic conservation areas for priority crop wild relatives, promoting the use of plant genetic resources in breeding and research, documentation, and information. The National Sectoral Programme for the Conservation and Sustainable Use of Animal Genetic Resources was approved in 2003 and is also being revised. It focuses on documentation and risk assessment, on-farm and ex-situ conservation, research funding, and expanding capacity. Good progress has been made in ex-situ conservation by developing multiple specific gene bank networks. In-situ conservation measures for plant genetic resources are being taken for some species and/or regions by developing the network of genetic conservation areas in Germany. The network was officially created in 2019 and is being further expanded. The Conservation Varieties Regulation has contributed to an increase in the genetic diversity of on-farm plant genetic resources. The inventories of threatened crop varieties and wild relatives are not yet complete and further financial and human resources will be needed to step up in-situ conservation measures and the necessary cooperative efforts, including enhanced cooperation between departments responsible for agriculture and nature conservation.

Target 5

Germany passed legislation implementing EU Regulation 1143/2014 on invasive alien species in 2017⁸⁰⁹, and included the necessary additional provisions to the EU Regulation in the Federal Nature Conservation Act and in the Federal Hunting Act. These legal provisions cover competency and authority to issue directives, import controls and penalties for infringement of the EU regulation. The government's report to the CBD¹⁸ states that provisions set out in the complementary legislation ensure an effective enforcement of the EU Regulation on invasive alien species.

Germany is currently developing an action plan to address the unintentional introduction and spread of invasive alien species of Union concern. The draft action plan⁸¹⁰ was open for public consultation between September and November 2020 and is now in the final stages¹⁸.

The BfN published the methodology for invasiveness assessment in 2015⁸¹¹. The approach classifies the approximately 3,150 alien species recorded in Germany into three categories: the warning list, action list and management list⁸¹². The latest estimates classified 38 vascular plant species, 20 vertebrate species, 7 algae species, 2 fungus species and 18 invertebrate species present in Germany as invasive. The BfN also published descriptions of the 66 invasive alien animal and plant species on the List of IAS Union Concern, stating that at least 30 of the 66 invasive species occur in the wild in Germany and all Länder are impacted, with the most invasive species of the Union List recorded in Bavaria (34

⁸⁰⁹ Bundesgesetzblatt Jahrgang 2017 Teil I Nr. 62 (2017). Gesetz zur Durchführung der Verordnung Nr. 1143/2014 über die Prävention und das Management der Einbringung und Ausbreitung invasiver gebietsfremder Arten. Available at: https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBL&jumpTo=bgbl117s3370.pdf#_bgbl_%2F%2F%5B%40attr_id%3D%27bgbl117s3370.pdf%27%5D_1605783362514 [Accessed 15 December 2020]

⁸¹⁰ BMU (2020) Aktionsplan gemäß Artikel 13 der Verordnung (EU) Nr. 1143/2014 des Europäischen Parlaments und des Rates vom 22. Oktober 2014 über die Prävention und das Management der Einbringung und Ausbreitung invasiver gebietsfremder Arten. Available at: https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Artenschutz/entwurf_aktionsplan_ias_2020_bf.pdf [Accessed 15 December 2020]

⁸¹¹ Nehring, S., Essl, F. and Rabitsch, W. (eds.) (2015) *Methodik der naturschutzfachlichen Invasivitätsbewertung für gebietsfremde Arten (Version 1.3)*. Bonn: Bundesamt für Naturschutz & Umweltbundesamt.

⁸¹² Bundesamt für Naturschutz Neobiota.de Gebietsfremde und invasive Arten in Deutschland (2020) Methodik der naturschutzfachlichen Invasivitätsbewertung für gebietsfremde Arten. Available at: <https://neobiota.bfn.de/invasivitaetsbewertung/methodik.html> [Accessed 15 December 2020]

species)⁸¹³. The BfN carried out a comprehensive analysis and prioritization of the paths of unintentional introduction and spread of invasive alien species in Germany, published in 2018⁸¹⁴.

Key success/failure stories on the implementation of the Biodiversity Strategy in MS

Failure- Species rich grassland destruction and degradation

An example of failure to achieve progress on Target 3 is the widespread deterioration of protected species-rich grassland habitats in Natura 2000 sites (with habitats showing both negative trend and poor conservation status), including some cases of habitat destruction. Largely due to unsustainable agricultural practices inside nature protection areas, these habitat types have significantly diminished in size or disappeared completely at various protected sites in recent years.

According to the NGO NABU, Germany is failing to provide adequate legal protection of these habitat types and is the EU Member State with the highest number of official derogations to Art. 6.3, by invoking implementation of Art. 6.4 and requesting the opinion of the European Commission⁸¹⁵. The NGO NABU submitted a complaint to the European Commission on this case in 2015⁸¹⁶ pointing to the lack of action by regional and federal governments. In Bavaria, 32,000 ha permanent grassland was converted to arable land between 2005-2010, approximately 2,000 ha of this in Natura 2000 areas. The BUND determined that in some areas this conversion occurred illegally and requested the Agricultural Minister to introduce an immediate ban on the conversion of grassland as in North Rhine-Westphalia, Baden-Württemberg, Rhineland-Palatinate and Mecklenburg-Western Pomerania, which already have a strict ban on ploughing up grassland^{817,818}. In July 2019, the Commission sent a letter of formal notice to Germany⁸¹⁹ for failing its obligation to prevent the deterioration of two habitat types- low hay meadows and mountain hay meadows and failing to monitor the conservation status of these habitat types and provide adequate legal safeguards for their protection. Nevertheless, there has been little progress on the matter. In October 2020, the Commission issued a reasoned opinion to Germany, repeating its call to significantly improve the protection of flower-rich grasslands in protected Natura 2000 sites⁸²⁰.

⁸¹³ Nehring, S. and Skowronek, S. (2019) *Die invasiven gebietsfremden Arten der Unionsliste der Verordnung (EU) Nr. 1143/2014 - Zweite Fortschreibung 2019 -*: Bundesamt für Naturschutz/BfN Skripten 574). Available at: <https://www.bfn.de/fileadmin/BfN/service/Dokumente/skripten/Skript574.pdf>.

⁸¹⁴ Rabitsch, W., Heger, T., Jeschke, J. M., Saul, W.-C. and Nehring, S. (2018) *Analysis and prioritisation of pathways of unintentional introduction and spread of invasive alien species in Germany in accordance with Regulation (EU) No 1143/2014 [Analyse und Priorisierung der Pfade nicht vorsätzlicher Einbringung und Ausbreitung invasiver gebietsfremder Arten in Deutschland gemäß Verordnung (EU) Nr. 1143/2014]*, Bonn - Bad Godesberg: Bundesamt für Naturschutz/BfN-Skripten 490). Available at: <https://www.bfn.de/fileadmin/BfN/service/Dokumente/skripten/Skript490.pdf>.

⁸¹⁵ NABU (2015) *Evidence Gathering Questionnaire for the Fitness Check of the Nature Directives - German NGOs response*, Available at: https://www.nabu.de/imperia/md/content/nabude/europa/evidence_gatheringquestionnaire_ngos_germany.pdf.

⁸¹⁶ NABU (2014) *Beschwerde an die Kommission der Europäischen Gemeinschaften wegen nicht Beachtung des Gemeinschaftsrechts, Artenreiche Grünland: Verstoß gegen das Verschlechterungsverbot in Artikel 6 Absatz 2 der FFH-Richtlinie 92/43/EWG*. Available at: https://www.nabu.de/imperia/md/content/nabude/landwirtschaft/gruenland/140403-nabu-beschwerde_ffh-gr_nland.pdf [Accessed 15 December 2020]

⁸¹⁷ Proplanta (2013) *Illegaler Grünlandumbruch in Bayern*. Available at: https://www.proplanta.de/agrar-nachrichten/umwelt/gruenlandumbruch-bayern_article1360316601.html [Accessed 15 December 2020]

⁸¹⁸ Bundesamt für Naturschutz (2013) *Grassland conservation in Germany*. Available at: <https://www.bfn.de/en/activities/agriculture/grassland-conservation-in-germany.html> [Accessed 15 December 2020]

⁸¹⁹ European Commission Press Corner (2019) *July infringement package: key decisions*. Available at: https://ec.europa.eu/commission/presscorner/detail/en/INF_19_4251 [Accessed 15 December 2020]

⁸²⁰ European Commission Press Corner (2020) *October infringement package: key decisions*. Available at: https://ec.europa.eu/commission/presscorner/detail/en/inf_20_1687 [Accessed 15 December 2020]

There were also failures to use the measures available in the CAP in the 2014-2020 period to increase protection of species-rich grassland. There were still areas of species rich grassland that were declared ineligible for direct payments. The German federal states did not use the flexibility available in the definition of permanent grassland to increase the eligibility of semi-natural pastures with scrub and trees, and the federal government did not make available the option to set up pro-rata systems to provide reduced payments for very extensively used pastures⁵⁹.

Evidence of successful implementation of focus targets

Target 2

Success- restoration of rivers and defragmentation measures

Progress under the Federal Defragmentation Programme has included construction of 16 out of the planned 18 green bridges over major roads⁸²¹. In various Länder there are ongoing measures to continue the defragmentation process. For example, Baden Württemberg developed a state-level re-linking concept in 2015 that uses the Baden Württemberg biotope network, wildlife route plan and federal defragmentation programme to improve the green infrastructure network, along with a strong focus on amphibians^{822,823}.

Although the river restoration projects have not resulted in significant improvements in conservation trends of EU protected habitats at the biogeographical region scale, there have been measurable local and regional improvements. For example, the cross-state restoration project “Untere Havelniederung” has been ongoing since 2005 in Brandenburg and Sachsen-Anhalt, as part of the funding programme chance.natur. The project aims to restore the Havel river and its floodplains on a flow length of 96km. Similar projects are being undertaken in other rivers across Germany, for example the Lippe and the Ahr, where restoration measures are being implemented and river sections are returning to their natural water structure. In the Ahr, the river mouth has been restored and overall, 100 barriers were removed over a distance of 62km up to the Eifel⁸²⁴. Restoration measures have improved the conservation status of two habitat types in the alpine rivers and have had positive effects on species living in river ecosystems like some endangered insects, specific fish species e.g. salmon and birds e.g. Kingfisher.

Success - policy initiatives to protect peatland

The nature conservation authorities of the Länder with peatland-rich landscapes presented guidelines with concrete objectives, conservation measures and instruments for peatland and climate change in a position paper in 2012⁸²⁵. A number of Länder have developed peatland protection programmes, for

⁸²¹ BMU (2014) Presseinformation Stand der Umsetzung von Maßnahmen des Bundesprogramms Wiedervernetzung Available at: https://bmu.de/fileadmin/Daten_BMU/Download_PDF/Naturschutz/bundesprogramm_wiedervernetzung_presseinfo_bf.pdf [Accessed 15 December 2020]

⁸²² Ministerium für Verkehr Baden-Württemberg (2019) Wiedervernetzung. Available at: <https://vm.baden-wuerttemberg.de/de/mensch-umwelt/naturschutz/wiedervernetzung/wiedervernetzung/> [Accessed 15 December 2020]

⁸²³ Ministerium für Verkehr Baden-Württemberg (2015) Landeskonzept Wiedervernetzung an Straßen in Baden-Württemberg. Available at: <https://vm.baden-wuerttemberg.de/de/service/publikation/did/landeskonzept-wiedervernetzung-an-strassen-in-baden-wuerttemberg/> [Accessed 15 December 2020]

⁸²⁴ Umweltbundesamt (2019) Ahr: Barrierefreiheit und Lebensraum für Fische an der Ahr. Available at: <https://www.umweltbundesamt.de/ahr-barrierefreiheit-lebensraum-fuer-fische#film-barrierefreiheit-und-lebensraum-fur-fische-an-der-ahr> [Accessed 15 December 2020]

⁸²⁵ Landesamt für Landwirtschaft, Umwelt und ländliche Räume Schleswig-Holstein (2012) Potentiale und Ziele zum Moor- und Klimaschutz: Schleswig-Holstein. Available at: <https://www.umweltdaten.landsch.de/nuis/upool/gesamt/moore/moorresolution.pdf>

example in Bavaria, Baden-Württemberg, Brandenburg, Mecklenburg Western Pomerania and Lower Saxony, where there are peatlands in need of restoration and extensively used fens⁴¹. In Mecklenburg Western Pomerania the project Moor-Futures⁸²⁶ was initiated in 2015, aiming to help companies that want to balance or optimize their greenhouse gas balance. As part of a voluntary carbon market, companies can purchase shares for the implementation of rewetting measures. Bavaria is pursuing similar goals with the monetization of carbon storage in peatlands by means of "moors benefits". However, overall, there has been insufficient progress on peatland restoration, though the potential for restoration action to achieve environmental objectives and benefits for society is significant (see section on efficiency - benefits).

Success - species specific conservation projects

Species-specific conservation projects funded through the Federal Biodiversity Programme have also shown successes, for example, for wild cats. EU funded LIFE (+) projects have been important, for example due to a LIFE-project in Schleswig-Holstein, the marsh fritillary (*Euphydryas aurinia*) could be successfully reintroduced after habitat restoration measures were undertaken in various locations.

Success - increased political momentum and action by cities to create green infrastructure.

The 'Green in the city' initiative started with a congress and publication on the state of knowledge on urban greening in 2015²¹. The Green in the Cities White Book (Weißbuch Grün in der Stadt) followed in 2017⁸²⁷ and described concrete measures from the government on how communes can be supported to secure and qualify green and open spaces. The first implementation report of the Programme Future City Green shows that the Länder differ significantly in their use of the measures and funding opportunities. Nevertheless, after only two years of implementation, the programme has gained in popularity. In the first year 129 communes from 15 Länder took part in the Future City Green programme^{828,829}. The Master plan on green in cities, published in 2019 (Masterplan Stadtnatur)⁸³⁰ increases the available funds for green urban development. The federal funding programme chance.natur has also been important in supporting natural and cultural landscapes of particular value, including the greening of urban environments.

Target 3

Success- biodiversity and farming pilots

Species-specific conservation projects have been most sustainable when planned and executed in close collaboration with the land users. Most projects are local or regional in scale and focus on specific, attractive species, though often other more inconspicuous species also benefit. Successful projects

⁸²⁶ Moorfutures (2019) Moorfutures. Klimaschutz trifft Biodiversität! Available at: <https://www.moorfutures.de/> [Accessed 15 December 2020]

⁸²⁷ BMU (2017) *Weißbuch Stadtgrün Grün in der Stadt - Für eine lebenswerte Zukunft*, Berlin: Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit. Available at: https://www.bmi.bund.de/SharedDocs/downloads/DE/publikationen/themen/bauen/wohnen/weissbuch-stadtgruen.pdf?__blob=publicationFile&v=3.

⁸²⁸ Jahnke, K., Stelmacher, K., Trapp, M. and Werner, C. (2018) *Bundestransferstelle Zukunft Stadtgrün-Erster Statusbericht zum Städtebauförderungsprogramm*, Berlin: Planergemeinschaft für Stadt und Raum eG. Available at: https://www.staedtebaufoerderung.info/StBauF/SharedDocs/Publikationen/StBauF/ZukunftStadtgruen/Erster_Statusbericht_Zukunft_Stadtgruen.pdf?__blob=publicationFile&v=6.

⁸²⁹ Rudolph, M., Hellmann, H., Spreter, R., Herbst, T. and Wieland, J. (2018) *Handlungsfelder für mehr Natur in der Stadt*, Radolfzell, Germany: Kommunen für biologische Vielfalt e.V. & Deutsche Umwelthilfe e.V. Projekt „Stadtgrün - Artenreich und Vielfältig“ von BfN & BMU). Available at: https://www.kommmbio.de/files/web/doks/download/stadtgruennaturnah_broschuere.pdf.

⁸³⁰ BMU (2019) *Masterplan Stadtnatur- Maßnahmenprogramm der Bundesregierung für eine lebendige Stadt*: Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit. Available at: https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Naturschutz/masterplan_stadtnatur_bf.pdf.

have established extensive farming techniques on grassland to provide safe, undisturbed nesting sites for ground nesting birds, restored and protected moorlands, and deciduous forests. However, to effectively address the declining population trends, effective measures must be implemented at the landscape scale, and address the major causes of species decline.

Some Länder have used the federal structure to go beyond the basic requirements for biodiversity conservation measures. For example, Baden-Württemberg improved aspects like the maintenance and monitoring of protected areas and increased the personnel in the administration working on nature conservation⁸³¹.

Case studies demonstrating successful conservation projects in agricultural landscapes¹⁸:

F.R.A.N.Z pilot project⁸³² to support more biodiversity in agricultural landscapes is developing conservation measures and management concepts in collaboration with farmers and conservationists;

LIFE projects are improving the conservation status of the rapidly declining black-tailed godwit (*Limosa limosa*). Wiesenvögel Life in Niedersachsen⁸³³ and Life Limosa in Schleswig-Holstein⁸³⁴ focus on implementing appropriate conservation measures to secure and improve the local and regional populations. Cooperation between ornithologists and farmers has been key to protect nesting sites and rewet wetland areas, leading to measurable improvements in local and regional population trends. These projects can be secured for the future by ensuring the restoration and protection of connecting, large wetland areas. This relies on the cooperation with farmers and requires appropriate and sufficient funding mechanisms.

Organic farming has steadily been increasing. In 2015, 6.3% of agricultural land was under organic farming, however a lot remains to be done before the 20% target in the National Sustainability Strategy can be reached. In 2017 the Future Strategy for Organic Farming was adopted to increase growth of organic farming²¹. Organic farming has the potential to improve biodiversity in agricultural landscapes e.g. by reducing nutrient inputs, improving water quality by reducing chemical fertiliser use, promoting nitrogen-fixing crops and hummus formation to improve soil structure⁸³⁵.

⁸³¹ Sonntagsblatt (2020) Artenschutzgesetz in Bayern: Artenschutzzentrum in Augsburg. Available at: <https://www.sonntagsblatt.de/bayern-artenschutzgesetz-naturschuetzer-volksbegehren-artenschutzzentrum-augsburg> [Accessed 15 December 2020]

⁸³² Umweltstiftung Michael Otto (2021) F.R.A.N.Z. Available at: <https://www.umweltstiftungmichaelotto.de/initiativen/f-r-a-n-z> [Accessed 15 December 2020]

⁸³³ Wiesenvögel LIFE (2011) Lebensräume von Wiesenvögeln sichern: Niedersachsen übernimmt Verantwortung. Available at: <https://www.wiesenvoegel-life.de/das-life-projekt/#:~:text=LIFE%2B%20Natur%20Projekt%3A%20E2%80%9EWiesenv%C3%B6gel%E2%80%9C,%2C%20Rotschenkel%2C%20Bekassine%20und%20Wachtelk%C3%B6nig> [Accessed 15 December 2020]

⁸³⁴ European Commission (2012) LIFE LIMOSA. Available at: https://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=4310&docType=pdf [Accessed 15 December 2020]

⁸³⁵ BMEL (2019) Zukunftsstrategie ökologischer Landbau, Bonn: Bundesministerium für Ernährung und Landwirtschaft. Available at: <https://www.bmel.de/SharedDocs/Downloads/DE/Broschueren/ZukunftsstrategieOekologischerLandbau2019.pdf?blob=publicationFile&v=4>

Target 5

The first national report states that according to Article 24 of Regulation (EU) No 1143/2014 on invasive alien species for the reporting period 2015-2018, management measures are being developed for relevant species, however no evidence regarding their successful implementation is available yet ⁸³⁶.

Germany has a well-implemented system for early detection in comparison to other Member States.

There is a notification system in place along with an immediate eradication process. 30 cases have been notified thus far and the Länder are well-involved and active in this regard⁸³⁷.

To address already widespread species, requiring management measures to minimise their impact, the federal government (in cooperation with the Länder) develops management plans for each species within 18 months of being included in the Union List to guide the Länder in their action⁸³⁸. It is too early to gauge progress on these plans, but in some cases implemented measures have already led to a reduction of specific invasive alien species on the Union list, for example *Ludwigia grandiflora* in Lower Saxony and *Lysichiton americanus* in the Taunus region¹⁰. However, it is not possible to conclude whether this was a direct result of implementing the regulation.

Evidence of unsuccessful implementation of focus targets

Target 2

Germany lacked a focused drive under a national framework for restoration at the national level, and there is a lack of information on progress. In the opinion of interviewees, existing initiatives did not occur because of the EU Biodiversity Strategy but rather alongside it. The major weakness is the lack of legally binding targets for the restoration of ecosystems⁸³⁹. There has been a lack of promotion of green infrastructure in rural areas under the National Green Infrastructure Concept, because in contrast to the urban area, no dedicated funding programme was developed.

Action 5, focusing on mapping and assessing ecosystems and their services has not been achieved. Ecosystems have not been mapped and recorded in enough detail and area coverage across the country. Mapping only used the Corine land cover data, which is too broad for the assessment of the conservation status of biodiversity-relevant ecosystems. Biotope mapping is the responsibility of the Länder and occurs using their own mapping keys, which are usually very selective and limited to particular valuable biotypes. Additionally, the mapping runs are not uniform across Länder and maps are only updated every 10 years. Therefore, a meaningful mapping exercise at national level has not been possible.

Target 3

No significant positive effect of the 2013 CAP reform was noted by government and independent assessments^{8,56,60,840}. Evaluation reports on the implementation and impacts of the CAP 2014-2020 in Germany^{59,841} show that the semi-natural grassland area is rapidly decreasing in Germany due to

⁸³⁶ Nigmann, U. and Nehring, S. (2020) *Erster nationaler Bericht Deutschlands gemäß Artikel 24 der Verordnung (EU) Nr. 1143/2014 über invasive Arten für den Berichtszeitraum 2015-2018*: Bundesamt für NaturschutzBfN Skripten 567). Available at: <https://www.bfn.de/fileadmin/BfN/service/Dokumente/skripten/Skript567.pdf>.

⁸³⁷ Pers. Comm. interview with BfN

⁸³⁸ Bundesamt für Naturschutz, Neobiota.de (2018) Art. 19 Management. Available at: <https://neobiota.bfn.de/unionsliste/art-19-management.html> [Accessed 15 December 2020]

⁸³⁹ Pers. Comm. Interviews with NABU, BUND and BfN

⁸⁴⁰ BfN (2017) *Agrar-Report 2017: Biologische Vielfalt in der Agrarlandschaft*, Bonn, Germany: Bundesamt für Naturschutz. Available at: https://www.bfn.de/fileadmin/BfN/landwirtschaft/Dokumente/BfN-Agrar-Report_2017.pdf.

⁸⁴¹ Umwelt Bundesamt (2019) *Evaluierung der GAP-Reform aus Sicht des Umweltschutzes - GAPEval Abschlussbericht*, Dessau-Roßlau. Available at:

intensification^{842,843}. The ongoing decline in the area of High Nature Value (HNV) farmland has been attributed to increased intensification linked to eutrophication or conversion to silage production⁸. Although targeted agri-envi-climate measures have been successful, they would need to be implemented across much larger areas to achieve biodiversity gains rather than just slowing losses.

There is evidence pointing to the inefficiency of the greening measures in Germany, which are regarded as having supported conventional agricultural practices that have little to no additional biodiversity benefits. A review of the EFA options selected by farmers in the first two years concluded that the conservation effect of the EFAs has been limited largely because farmers have the option of selecting types of EFAs that are easy to implement but that have little to no impact on biodiversity, and farmers have a low risk of incurring penalties⁸⁴⁴. The ecological focus areas obligation has increased the conservation relevant area only by about 1% of farmland^{92,94}. A fifth of the EFA area was declared fallow land and landscape elements, which has the most value for biodiversity but frequently existed prior to greening came into force and did not improve in habitat value because of the EFA declaration; however, EFA may have contributed to retaining some of the fallow that would otherwise have been lost⁸⁴⁵. The diversification of crops measure did not achieve an increase in the heterogeneity of the landscape^{92,94}. The biodiversity impact of the permanent grassland protection was limited because grassland can be newly created in another area with special approval; but conversion destroys any plant species richness and soil biodiversity in the sward. Organic farmers are exempt from the greening regulations, meaning that around 12% of the nationwide permanent grassland is not protected from conversion to arable. Only around 14% of permanent grassland area was protected from conversion to arable by designation as environmentally sensitive permanent grassland.

The programming and controlling of CAP measures is complicated by the overlapping of cross-compliance, greening and agri-environment, and the effort needed to prevent double funding adds administrative burden⁵⁸. Regional administrations have preferred easily controllable but less targeted measures (i.e. light green) due to the required control mechanisms and verifiability/auditability from the EU level, while more high-nature value measures, that are not able to be as standardised and need to be adapted to specific species, are often not supported by EU funds⁸⁴⁶. Due to the administrative costs and to avoid possible implementation checks and return payments, many of the Länder have

https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/2019-06-17_58-2019_gapeval.pdf.

⁸⁴² Schoof, N., Luick, R., Beaufoy, G., Jones, G., Einarsson, P., Ruiz, J., Stefanova, V., Fuchs, D., Windmaier, T., Hötker, H., Jeromin, H., Nickel, H., Schumacher, J. and Ukhanova, M. (2019) *Grünlandschutz in Deutschland: Treiber der Biodiversität, Einfluss von Agrarumwelt- und Klimamaßnahmen, Ordnungsrecht, Molkereiwirtschaft und Auswirkungen der Klima- und Energiepolitik*, Bonn: Bundesamt für Naturschutz. Available at: https://www.hs-rottenburg.net/fileadmin/user_upload/Forschung/Forschungsprojekte/Management/GAPGRUEN/BfN_Skript_539.pdf.

⁸⁴³ BfN (2014) *Grünland-Report: Alles im Grünen Bereich?*, Bonn, Germany: Bundesamt für Naturschutz. Available at: http://www.bfn.de/fileadmin/MDB/documents/presse/2014/PK_Gruenlandpapier_30.06.2014_final_layout_barrierefrei.pdf.

⁸⁴⁴ Zinngrebe, Y., Pe'er, G., Schueler, S., Schmitt, J., Schmidt, J. and Lakner, S. (2017) 'The EU's ecological focus areas - How experts explain farmers' choices in Germany', *Land Use Policy*, 65, pp. 93-108.

⁸⁴⁵ Alliance Environnement (2019) *Evaluation of the impact of the CAP on habitats, landscapes, biodiversity*, Brussels: Alliance Environnement (IEEP and Oréade-Brèche). Available at: https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/evaluation-policy-measures/sustainability/impact-cap-habitats-landscapes-biodiversity-0_en.

⁸⁴⁶ LANA (2016) *Wirksamkeit der derzeitigen EU-Naturschutzfinanzierung in Deutschland und Anforderungen für die nächsten Förderperiode ab 2020*, Germany: Länderarbeitsgemeinschaft Naturschutz, Landschaftspflege und Erholung LANA. Available at: https://www.lpv.de/fileadmin/user_upload/Positionspapier_LANA_EU_Naturschutzfinanzierung__3_.pdf.

chosen to forego the use of EAFRD to fund land management e.g. Hamburg and Hessen, especially for the forestry sector⁸⁴⁷.

Land users are restricted in their agricultural activities in areas protected under the Habitats Directive by law (landwirtschaftliches Ordnungsrecht), however only seven Länder have legally committed themselves to providing compensation for restrictions on farmer's activities in Natura 2000 sites⁵⁸.

Target 5

According to the first national report according to Article 24 of Regulation (EU) No 1143/2014 on invasive alien species for the reporting period 2015-2018, management measures are being developed for relevant species, and therefore no evidence regarding their unsuccessful implementation is available yet⁸⁸. Factsheets on the management measures that have been developed for the widespread species on the first Union List can be [found here](#).

Some evidence that control measures have been unsuccessful⁸⁴⁸, however not directly linked to the regulation:

The introduction of American crayfish species (e.g. *Procambarus clarkii*) into German waterways has been extremely problematic. They are carriers of the crayfish plague (*Aphanomyces astaci*) causing severe and fatal infections in native crayfish species (e.g. *Astacus astacus*).⁸⁴⁹

The removal of highly mobile species from the wild is very difficult and often requires a very rapid response and a decision needs to be made regarding the appropriate approach, often across Länder boundaries. This is impractical and often fails (e.g. for duck species). Additionally, the removal of invasive alien species from waterways is also very challenging and mostly unsuccessful e.g. removal of fish species from extensive waterways⁸⁵⁰.

Unexpected or unintended consequences of implementing focus targets

Target 2

No evidence available.

Target 3

Actions for pollinators: As a consequence of insect decline being strongly represented in the media and gaining popularity in amongst society (especially due to important studies like the Krefelder study⁴) the federal government became active on the topic and developed a dedicated insect programme as part of the GAK. Alongside this, there was an increased interest in pesticide and fertiliser use, IPM and establishing a national monitoring centre. Consequently, there is now also a demand for entomologists. Farmers are also more aware of insect decline and the effects of farming practices and generally feel a greater responsibility to demonstrate their engagement to the general public. For example, through the planting of flowering strips along their fields.

⁸⁴⁷ Entenmann, S. and Schaich, H. (2014) *Natura 2000 im Privatwald: Umsetzungsmöglichkeiten durch die EU-Naturschutzfinanzierung*, Berlin, Germany: Naturschutzbund Deutschland (NABU). Available at: <https://www.nabu.de/downloads/Natura-2000-im-Privatwald.pdf>.

⁸⁴⁸ Bundesamt für Naturschutz, Neobiota.de (2019) Neobiota und Naturschutz. Available at: <https://neobiota.bfn.de/grundlagen/neobiota-und-naturschutz.html> [Accessed 15 December 2020]

⁸⁴⁹ Bundesamt für Naturschutz, Neobiota.de (2019) Auswirkungen, Gefahren und Bedeutung. Available at: <https://neobiota.bfn.de/grundlagen/auswirkungen-gefahren-und-bedeutung.html> [Accessed 15 December 2020]

⁸⁵⁰ Pers. Comm. Interview BfN

Target 5

Potentially adverse effects on stakeholders: the IAS regulation affects private animal holders, zoos (listed species can be kept until natural death but cannot be bred), animal shelters (danger that the regulation will cause shelters to lack placement options), hunters, and gardeners. Previously, the elimination measures often focused on killing or extermination measures that may be in conflict with the nature directives or animal welfare act, rather than on prevention⁸⁵¹.

Aquarists, private owners, and people involved in the pet and plant trade will often release species into the wild once they are listed as they are suddenly forbidden to be owned. Therefore, the consequences of ban can be far-reaching e.g. ornamental turtles and there are not proper controls in place to prevent such release.

When action is proposed under the IAS regulation, nature conservation associations can get emotional and start mass action to protect particular species. This can enhance the conflict between different groups of conservation organisations and can also lead to the illegal transport of species across borders to protect them from potential eradication measures.

IAS are trade objects and an important source of income e.g. in horticulture, forestry and agriculture and there are certain conflicts regarding what species are considered useful in the different sectors. Additionally, with climate change particular IAS are considered as essential future species to combat climate change e.g. in the forestry sector.

Key factors which have contributed to achieving objectives*

*or making progress since objectives have not been achieved

The key factor identified by interviewees as having been important in contributing towards achieving objectives of the EU Biodiversity Strategy 2020 was **political leadership**. The Länder that made most progress like Baden-Wuerttemberg were enabled by having a regional government with the Green party well-represented. The monetary resources play a secondary role. For example, Thuringia is not one of the richest Länder, however managed to build up its own network of Natura 2000 sites and was the first of the Länder in Germany to declare the Green Belt as a natural monument (in 2018)⁸⁵². This was a consequence of political will driving these efforts⁸⁵³. Land ownership is also an important factor because it has been easier to implement conservation measures with a progressive government on state owned land in comparison to privately owned areas⁸⁵⁴.

Target 2

The following policy developments have been important at the national level to contribute towards achieving target 2. These strategies/regulations/programmes were not necessarily a direct result of the

⁸⁵¹ Deutscher Tierschutzbund, Auffangstation für Reptilien, Bmt und Tierärztliche Vereinigung für Tierschutz (2017) *Positionspapier zur EU-Verordnung Nr. 1143/2014 vom 22. Oktober 2014 über die Prävention und das Management der Einbringung und Ausbreitung invasiver gebietsfremder Arten und deren Umsetzung in Deutschland*: Deutscher Tierschutzbund, Auffangstation für Reptilien, Bmt & Tierärztliche Vereinigung für Tierschutz. Available at: https://www.tierschutzbund.de/fileadmin/user_upload/Downloads/Positionspapiere/Artenschutz/Gemeinsames_Positionspapier_Invasive_Arten.pdf.

⁸⁵² Thüringen entdecken (2021) Das Grüne Band in Thüringen-ein Nationales Naturmonument. Available at: <https://www.thueringen-entdecken.de/urlaub-hotel-reisen/das-gruene-band-120028.html> [Accessed 15 December 2020]

⁸⁵³ Pers. Comm. Interview BUND

⁸⁵⁴ Pers. Comm. Interviews NABU and management authority Schleswig-Holstein

EU Biodiversity Strategy, however actions under their framework have contributed towards achieving the EU Biodiversity Strategy targets and objectives overall:

Federal Defragmentation Programme (2012);

Strategie zur vorbildlichen Berücksichtigung von Biodiversitätsaspekten für alle Flächen des Bundes (Ströff) (2016);

Federal Programme Blue Belt (2017);

National Green Infrastructure concept (2017);

Focus on urban environment: Green in the City whitepaper (2017), Urban Nature Master Plan (2019)

Support for implementation (of both target 2 and 3) provided by funding programmes:

Chance.natur;

The Federal Biodiversity Programme (updated in 2016);

The Federal Scheme for Organic Farming and Other Forms of Sustainable Agriculture (BÖLN);

BMBF-BMU funding measure Research on Implementation of the National Biodiversity Strategy (F&U NBS) (2011). Key funding areas: special responsibility species, biodiversity hotspots, ecosystem services and additional measures;

Wilderness fund launched in 2019;

Extensive stakeholder dialogues to involve state and non-state actors across society in the implementation of the conservation objectives.

Target 3

The following policy developments have been important at the national level to contribute towards achieving target 3. These strategies/regulations/programmes were not necessarily a direct result of the EU Biodiversity Strategy, however actions under their framework have contributed to the EU Biodiversity Strategy targets and objectives overall:

Aktionsprogramm Insektenschutz, which was adopted in 2019 promises legally binding targets through an insect protection law (amongst other things regarding fertiliser application), dedicated financial support for pollinator conservation and research projects and restoration of pollinator-friendly habitats⁸⁵⁵;

Major improvements for biodiversity in the agricultural landscape have been partially due to:

- the adoption of an amendment of the German Fertiliser Application Ordinance in 2017 including a binding anchoring of a material flow balance, and
- the expansion of funding scope under the "Joint Task for Agricultural Structure and Coastal Protection" (GAK) in 2016 to include "environmentally friendly and resource-efficient agriculture including contract-based nature conservation and landscape management". The GAK funding category for land management was expanded to include a finding principle for non-productive investment in nature conservation with the aim to create, restore, and develop habitats and biotopes in the agricultural landscape for wild flora and fauna species. The first investments started in 2017¹⁸.

Target 5

Within the framework of the IAS Regulation, the following developments were important in making progress towards achieving target 5:

⁸⁵⁵ BMU (2019) *Aktionsprogramm Insektenschutz*, Berlin: Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit. Available at: https://www.bmu.de/fileadmin/Daten_BMU/Pool/Broschueren/aktionsprogramm_insektenschutz_kabinettversion_bf.pdf.

- Establishment of early detection system;
- Factsheets on alien species that are or could become invasive⁸⁵⁶;
- Legal framework - integration of IAS concept and management measures in the Federal Conservation Act and Federal Hunting Act;
- Detailed invasiveness assessment procedure has been developed⁸⁵⁷.

The EU IAS Regulation makes the requirements clearer and binding, which has improved implementation in Germany and has allowed less interpretation scope. Furthermore, the reporting requirements are important to ensure there is progress in implementation.

Key factors which have hindered the achievement of objectives

Key factors that hindered achievement across all targets mentioned by interviewed stakeholders:

Lack of mainstreaming at EU level: The EU Biodiversity Strategy 2020 was a DG ENV undertaking and the lack of cooperation between DGs within the Commission limited the integration of the biodiversity targets into other policy areas and there was a lack of a sense of responsibility for the EU strategy across other sectors. Consequently, there was no successful mainstreaming of biodiversity targets into other sectors and this also limited the implementation in Germany¹⁰⁴.

Lack of political will and lack of legal underpinning: According to the view of interviewees, the lack of agreement on who is responsible for what in Germany's federal structure, along with a general lack of political will as a result of the non-binding nature of the targets, was a key factor⁸⁵⁸. Although Germany developed a restoration prioritization framework, this remained a political activity and was not implemented on the ground. The lack of legally binding targets in the EU Biodiversity Strategy 2020 meant that the Länder were not obliged to engage and commit resources¹⁰³. Legally binding targets are crucial to ensure implementation. Without a legally binding component they are considered optional and are unlikely to receive political attention and sufficient funding.

A joint NGO position paper published in 2019 outlines shortcomings of the national biodiversity strategy priority areas⁸⁵⁹. It identified the major factors as:

- Damaging effects of direct area payments of the CAP on grassland, lack of implementation of integrated plant protection measures to reduce pesticide use, need for strengthening of the legal framework, mainly regarding nitrogen, fertilizer inputs, good practice guidelines;
- Widespread lack of financial, legal and managerial capacity preventing the achievement of the Water Protection Act goals.

In the opinion of an interviewed NGO, biodiversity protection is not economically attractive or profitable because biodiversity targets are not properly integrated in the economic logic and

⁸⁵⁶ Bundesamt für Naturschutz, Neobiota.de (2019) Arten-Handbuch. Available at: <https://neobiota.bfn.de/handbuch.html> [Accessed 15 December 2020]

⁸⁵⁷ Bundesamt für Naturschutz, Neobiota.de (2019) Methodik der naturschutzfachlichen Invasivitätsbewertung für gebietsfremde Arten. Available at: <https://neobiota.bfn.de/invasivitaetsbewertung/methodik.html> [Accessed 15 December 2020]

⁸⁵⁸ Per. Comm. Interviews with NABU, BUND, BfN and management authority Schleswig-Holstein

⁸⁵⁹ DNR, BUND, Deutsche Umwelthilfe, WWF and NABU (2019) *Handlungsoptionen zum Stopp des Artensterbens*, Germany. Available at: <https://www.nabu.de/imperia/md/content/nabude/naturschutz/191017-factsheets-naturschutz-dnr-bund-nabu-wwf.pdf>.

investment flows, and firms find it more profitable to first destroy nature then restore it and benefit financially a second time this way.⁸⁶⁰

Target 2

Conflicting sectoral policies and drivers: NGOs consider that counterproductive sectoral policies, notably the CAP and bioenergy subsidies, have hindered significant progress on achieving biodiversity targets. Fisheries and inland waterway transport interests are driving hydro morphological changes in alluvial floodplains, and urbanisation is driving land-use change and land sealing, causing fragmentation and habitat loss⁶⁷.

Access to land for restoration and conservation measures. A factor that has potentially hindered the achievement of restoration is land availability. To implement restoration that involves land use change, such as peatland rewetting or floodplain restoration, land must be available and often this involves purchasing land parcels from landowners. For this to be successful, landowners must be willing to sell and this has frequently not been the case.⁸⁶¹

Target 3

Insufficient integration of biodiversity priorities, funding, and administrative burden of CAP: A midterm review of the national biodiversity strategy by the joint federal working group on nature conservation, landscape management and recreation (LANA) concluded that the main causes for the significant implementation deficit of the national biodiversity objectives have been insufficient financial resources and failure to integrate nature conservation into EU policies, especially the CAP⁹⁸. Additionally, the administrative and bureaucratic burden associated with EU funds is high and often unfeasible for the Länder (see unsuccessful implementation section).

Failure to integrate PAF funding priorities into funding programmes. Studies on the effectiveness of the EAFRD and RDPs on agricultural biodiversity and Natura 2000 implementation have identified the failure of Germany to integrate the PAF funding priorities for Natura 2000 into the rural development programmes as a key factor limiting conservation success^{862,863,864}. There is a lack of transparency on nature conservation financing in Germany because the Länder do not necessarily publicize the details of their funding directed towards nature conservation measures, which has hindered information flows e.g. during the development of the German PAF. It has been suggested that a reason may be that the Länder are afraid of potential societal backlash for not investing the funds into day care centres and road construction¹⁰⁴. An additional barrier is the lack of Länder-specific PAFs, meaning the actual funding requirements are not accurately reflected in the national PAF and ultimately too little funding is made available at the Länder level to implement biodiversity-related measures effectively.

⁸⁶⁰ Pers. Comm. Interview BUND

⁸⁶¹ Pers. Comm. Interview management authority Schleswig-Holstein

⁸⁶² Stratmann, U., Pabst, H. and Horlitz, T. (2018) 'Wieviel Naturschutz steckt in der zweiten Säule - nur zweite Wahl?', *Natur und Landschaft*, 6, pp. 266-272.

⁸⁶³ Horlitz, T., Achtermann, B., Pabst, H. and Schramek, J. (2018) *Ermittlung des geplanten finanziellen Umfangs von Naturschutzmaßnahmen im Rahmen der ELER-Programme zur Entwicklung des ländlichen Raums 2014 - 2020 - Herausforderungen, Methode und Ergebnisse*, Hannover; Frankfurt: Bundesamt für Naturschutz Ad hoc-Arbeitspapier im Rahmen des Forschungs- und Entwicklungsvorhabens „Biodiversitätsförderung im ELER“ (ELERBiodiv) (FKZ 3515 880 300)). Available at: <https://www.bfn.de/fileadmin/BfN/landwirtschaft/Dokumente/ELER.pdf>.

⁸⁶⁴ Langendorf, U., Horlitz, T., Achtermann, B., Pabst, H. and Schramek, J. (2018) *Biodiversitätsförderung im ELER (ELERBiodiv)-Zusammenfassung des Endberichts*, Hannover. Available at: https://www.ifls.de/fileadmin/user_upload/Downloads/Buchpublikationen/DE/ELERBiodiv_Endbericht_Zusammenfassung_V2_final_20180906_V1.pdf.

It has been difficult to motivate farmers in some Länder due to lack of attractively funded measures. There is a demand for contractual nature conservation, but farmers are only committed if the relationship between effort and compensation is profitable.⁸⁶⁵

Failure to limit nitrogen loads. An important factor in the continuing decline of biodiversity is that critical loads of nitrogen are being exceeded on over half the area of sensitive ecosystems in Germany⁸⁶⁶. Although annual nitrogen surplus declined by 19% between 1992 and 2015, falling from 116 to 94 kg/ha (rolling five-year average), a new target was set in 2016 for the period 2028 to 2032 to reduce nitrogen surpluses on agricultural land to 70 kilograms per hectare per annum (rolling five-year average)⁸⁶⁷. The German Advisory Council on the Environment (SRU) had already called in 2013 for urgent amendments to strengthen enforcement of the fertiliser act and its regulations to improve controlling mechanisms to ensure compliance and sanctions. Commission infringement procedures against Germany due to nitrate pollution in water, nitrous oxide, and ammonia emissions in the air⁸⁶⁸ and a European Court of Justice ruling resulted in several revisions to the Fertilizer Act (Düngegesetz) and the Fertiliser Application Regulation (Düngeverordnung) to comply with the EU Nitrates Directive. However, the Fertiliser Act's effectiveness continues to be questioned and the Commission does not consider the changes to be adequate⁸⁶⁹. An important potential for future changes to reduce nitrogen pressure would be to send the right signals that encourage good practices beyond fertiliser use, for example better crop rotation systems⁵⁸.

Target 5

Fragmented governance structure. The federal structure means that the individual Länder are responsible for the implementation, making it difficult to gauge national progress towards the targets. The states also address the management of IAS differently and it can be difficult to find common solutions. Further work is needed to develop appropriate structures (and resources) in the local management authorities to implement management measures effectively.

Factors restricting availability of funding. Overall, there is a lack of funding available for nature conservation and it is difficult to prioritise the limited funds. The management of IAS, involving the eradication of species is a challenging societal topic as it goes against public opinion, which is that conservation means protection and therefore should not involve eradication measures. The principles of IAS, their management and eradication still need time to be accepted by society. Thus far, due to the unpopularity of the topic, nature conservation associations so not want to address IAS as there is risk of losing funding and members.

4.2.2 Efficiency

⁸⁶⁵ Pers. Comm. Interview management authority Schleswig-Holstein

⁸⁶⁶ Umweltbundesamt (2018) Überschreitung der Belastungsgrenzen für Eutrophierung. Available at: <https://www.umweltbundesamt.de/daten/flaeche-boden-land-oekosysteme/land-oekosysteme/ueberschreitung-der-belastungsgrenzen-fuer-0#situation-in-deutschland> [Accessed 15 December 2020]

⁸⁶⁷ Umweltbundesamt (2021) Indicator: Agricultural nitrogen surplus. Available at: <https://www.umweltbundesamt.de/en/indicator-agricultural-nitrogen-surplus#at-a-glance> [Accessed 15 December 2020]

⁸⁶⁸ European Commission Press Room (2016) Water: Commission refers Germany to the Court of Justice of the EU over water pollution caused by nitrates. Available at: https://ec.europa.eu/commission/presscorner/detail/HU/IP_16_1453 [Accessed 15 December 2020]

⁸⁶⁹ European Commission Press Room (2019) July infringement package: key decisions. Available at: https://ec.europa.eu/commission/presscorner/detail/en/INF_19_4251 [Accessed 15 December 2020]

Key evidence on the cost efficiency of the Biodiversity Strategy as a whole

The estimates of the costs of implementing the biodiversity strategy in Germany are significantly higher than the amount of funding made available from regional, national and EU funds.

There is a lack of available information on actual spending, however based on previous expenditure estimates, the overall financial gap for implementing nature conservation measures in Germany has been calculated as 1.96 billion EUR/year. Furthermore, there have been difficulties calculating the transaction costs, such as carrying out necessary research, gathering information, policy design, enforcement and monitoring activities. Therefore, it is likely that the finance gap is in reality significantly higher than estimated ⁸⁷⁰.

Cost estimates:

The funding needs of the National Biodiversity Strategy for the period 2010-2020 was costed at 3.26 billion EUR/year on 8.25 million ha of land (excluding marine funding needs)¹²². This was calculated by predicting the costs of the individual conservation measures utilising literature review, expert judgement and comparing the planned measures and objectives to the results of reporting under the nature directives. Following this, further biodiversity conservation measures were developed and their impact on land use determined. The data was then aggregated and divided according to six habitat types: peatlands, wetlands, dry sites, forests, arable and grassland. Based on the programme of measures, the costs for each measure and for the implementation of the entire programme on 8.25 million ha was calculated, where 1.4 billion EUR was attributed to restoration and regeneration of ecosystems, specifically in the Natura 2000 network and 1.86 billion EUR for conservation measures. From the conservation of individual habitat types, the most cost-intensive was estimated to be grassland costing 1.76 billion EUR/year. The yearly costs of conservation measures in arable land and forests were calculated to be 903.16 million EUR and 354.84 million EUR respectively, while for peatlands the costs amount to 87.96 million EUR, and 89.87 million EUR for dry sites. Wetland conservation measures were calculated to need 64.68 million EUR/year¹²²;

The German PAF published in 2013 estimated the funding needs for implementing the EU nature directives at 627 million EUR/year for the 2014 to 2020 period⁸⁷¹;

The joint federal working group on nature conservation, landscape management and recreation (LANA) reviewed these estimates in 2016 and estimated the costs of implementing the EU nature directives (i.e. Natura 2000, measures beyond protected areas, species monitoring, public relations and cost categories like restoration, maintenance, personnel) to be 1.42 billion EUR/year, excluding the marine environment⁹⁸. One third of the costs are attributed to measures associated with grassland, heathland and dunes (728 million EUR/year), while costs associated with extensive agriculture amounted to 236 million EUR.

National funding:

At the national level, important funding instruments are the chance.natur fund, the federal programme for biodiversity (BuBi), the GAK, and programmes at Länder level.

⁸⁷⁰ Rühs, M. and Wüstemann, H. (2015) 'Was kostet der Naturschutz in Deutschland? Eine Spezifizierung des Finanzbedarfs, aktueller Ausgaben und Finanzierungslücken', *Zeitschrift für Umweltpolitik & Umweltrecht*, (no. ZfU 1/2015), pp. 29-53.

⁸⁷¹ BfN and BMU (2013) Format für einen Prioritären Aktionsrahmen (PAF) für Natura 2000. Available at: https://www.bfn.de/fileadmin/MDB/documents/themen/natura2000/Prioritaerer_Aktionsrahmen_fuer_Natura_2000_in_Deutschland.pdf [Accessed 15 December 2020]

Through chance.natur the federal government has provided 450 million EUR in total thus far and currently **14 million EUR/year** is available under the programme. It funded 77 projects on a total area of 3,700 km² between 1979 and 2015⁸⁷²;

Through the federal programme for biodiversity (BuBi) the Ministry of Environment provided 15 million EUR/year until 2015, which was increased to 18 million EUR in 2016 and 20 million EUR in 2017. **25 million EUR/year** are available under the BuBi if both Länder and federal government funding are counted ⁸⁷³. The BuBi funds exemplary projects that are of importance under the umbrella of the national biodiversity strategy and are implemented according to high standards. The four priorities under the programme are species of national responsibility, biodiversity hotspots, ecosystem services, further measures;

Through the changes in the GAK in 2016/2017, contractual nature conservation and conservation of the countryside can be funded and in 2017 the funding principle ‘investiver Naturschutz’ (investment in nature conservation) was included. 14 Länder registered funds totalling **15 million EUR** under this principle in 2017¹²⁵;

The programme ‘Zukunft Stadtgrün’ is providing a total of **120 million EUR/year** (a mixture of federal, Länder and commune funds) between 2017 and 2021;

Länder funding is an important contribution to the implementation of the National Biodiversity Strategy. The BMU has estimated that Länder funds contribute around **67 million EUR/year** to nature conservation through specific funding programmes. Separate funding programmes at Länder level exist for landscape maintenance, contractual nature conservation, grassland, species conservation and nature parks¹²⁵;

Charitable trusts/foundations provide approximately **13.2 million EUR/year** for nature conservation measures¹²⁵.

EU funding: The EU funds that are most important for nature conservation in Germany are the EAFRD, the ERDF and the EMFF¹²⁵.

EAFRD: The EAFRD budget planned for biodiversity relevant measures is estimated to be around 324 million EUR/year (see below)¹¹⁵. An estimated 270-330 million EUR/year contributes to biodiversity conservation (approximately 16 million EUR in compensation payments for Natura 2000 and the WFD; 578 million EUR for agri-environment measures, 30% of these having direct relevance for biodiversity; 93 million EUR for investments in conservation and water protection)^{874,114,125,875};

EMFF: In the EMFF period 2014-2020 around 3-4 million EUR/year were planned for biodiversity purposes, mainly marine Natura 2000 areas, ecologically sound fishing techniques and free flowing rivers. Although this represents 15% of the German total EMFF fund, it covers less than 1% of the Natura 2000 costs^{125,127};

⁸⁷² Bundesamt für Naturschutz (2016) Nature Conservation Funding. Available at: <https://www.bfn.de/en/service/facts-and-figures/nature-and-society/nature-conservation-funding/numbers-of-large-scale-nature-conservation-projects-by-habitat-types.html> [Accessed 15 December 2020]

⁸⁷³ BMU (2017) *EU-Naturschutzfinanzierung. Schriftlicher Bericht für die 59. Amtschefkonferenz und die 88. Umweltministerkonferenz*, Bonn, Germany: Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit. Available at: http://www.eu-naturschutzfinanzierung.de/images/Inhalte_intern/2017-05-04%20BMUB%20report%20on%20EU%20nature%20financing%20to%20the%2088%20Conference%20of%20Env%20Ministers%20Germany.pdf.

⁸⁷⁴ Freese/DVS (2015): Sonderauswertung basierend auf den jährlichen Länderberichten zum ELER (nicht veröffentlicht). Fortschreibung der Daten nach der Methode dargelegt in: Jan Freese (2012): Natur- und Biodiversitätsschutz in ELER. Naturschutz und Landschaftsplanung 44 (3) S.69-76.

⁸⁷⁵ NABU (2015) *The future of EU financing for nature and biodiversity*, Germany: NABU Naturschutzbund Deutschland (BirdLife partner Germany)A discussion paper of NABU. Available at: https://www.nabu.de/imperia/md/content/nabude/europa/150527-nabu-eu-nature-financing_discussion-paper.pdf.

ERDF: Although investments in the maintenance of ecosystem services and green infrastructure are possible via the ERDF framework, planned funds from the ERDF in the 2014 to 2020 covered only 1-2% of the Natura 2000 costs according to an NGO assessment⁸⁷⁶. In the previous period (2007-2012), spending on biodiversity represented only 0.2% of total ERDF spending in Germany⁸⁷⁶. The ERDF is programmed by some Länder (e.g. Lower Saxony, Thuringia) for peatland conservation, ecosystem restoration, establishing management plans for Natura 2000 sites and projects to facilitate free flowing rivers, with 31 million EUR/year available¹²⁵. There is evidence that although funding is meant to explicitly focus on biodiversity, green infrastructure and nature conservation, some measures are being financed that have limited benefits or have counterproductive effects on the environment (e.g. dykes, flood protection walls, path development in urban green spaces etc.);

LIFE: According to the LIFE programme EASME datahub, under the current funding period 2014-2020, 82.09 million EUR have been allocated to Germany with over 69 million EUR invested in the environment⁸⁷⁷. Between 2007-2015 German LIFE projects accounted for 21 million EUR/year, including national co-financing. LIFE is the only EU funding instrument that directly supports environmental and climate measures. In Germany it has been an important and effective funding instrument, however the overall effects have been limited to individual projects for the implementation of Natura 2000. LIFE projects generally occur over a relatively short timeframe and this can limit their effect on biodiversity because particular activities require long-term financing. Such financing mechanisms are lacking, and this prevents effective mainstreaming.

Key evidence of benefits

Target 2

Key benefits are linked to the ecosystem services delivered via wetland and peatland restoration and grassland maintenance, like avoidance of flood damage, drinking water self-purification, increased resilience and the reduction in greenhouse gases outweigh the invested costs. For example, the costs resulting from the major flooding events in 2002 and 2013 in the catchment areas of the Donau and Elbe totalled over 21 billion EUR, demonstrating the societal benefits from maintaining and protecting natural ecosystem services⁸⁷⁸.

Floodplains along Germany's largest rivers are reported as delivering purification services (nitrogen, phosphorous) worth 500 million EUR/year, which could be greatly increased through restoration measures⁴⁵.

For the middle Elbe, the costs and benefits of various floodplain protection measures were calculated:

- In the variant where 35,000 ha of floodplain along the Elbe is reclaimed, the calculated costs were 566 million EUR. The social benefit arising of the flood protection, through avoidance of flood damage was estimated as 177 million EUR, however including other co-benefits from ecosystem services, like the retention of nutrients, avoidance of old dyke maintenance costs, and the willingness to pay for biodiversity, the total societal benefits was calculated to be around 1.75 billion EUR, greatly outweighing the costs of dyke removal and restoration

⁸⁷⁶ European Court of Auditors (2014) *Is the ERDF effective in funding projects that directly promote biodiversity under the EU biodiversity strategy to 2020?*, Luxembourg: Publications Office of the European Union. Special Report No 12/2014). Available at: http://www.eca.europa.eu/Lists/ECADocuments/SR14_12/QJAB14012ENC.pdf.

⁸⁷⁷ LIFE programme 2014-2020 data hub (2020). Available at: <https://life.easme-web.eu/#> [Accessed 15 December 2020]

⁸⁷⁸ BfN (2015) *Gewässer und Auen- Nutzen für die Gesellschaft*, Bonn: Bundesamt für Naturschutz. Available at: https://www.bfn.de/fileadmin/BfN/wasser/Dokumente/BR-gepr-Gesell_Nutz_Gewaes_Auen_barrierefre.pdf

measures¹³⁰. Overall, in the case of large-scale dyke relocations, the value of flood protection can range from a few million to more than 100 million EUR⁸⁷⁹.

In the lowlands of northern Germany and the Alpine foreland, there are significant peat deposits, which store large amounts of carbon. The boggy floodplains along the rivers in these areas alone contain about 100 million tonnes of carbon⁸⁸⁰. In the Wurzacher Ried Moors in Southern Germany, it was calculated that restoration measures could save approximately 11,400 t CO₂ per year¹.

Evidence relating to Target 3

The value of pollination services pollinator dependent crop production is estimated to be 1.13 billion EUR in Germany⁸⁸¹. The total value of the production in the agricultural, forestry and fisheries sectors was estimated at 60.4 billion EUR in 2019⁸⁸², so pollination contributed to at least 6% of this. If pollination services could not be guaranteed, some crops would suffer a significant reduction in yield, particularly fruit and vegetable cultivation and large-scale arable crops like rapeseed, sunflower oil and broad beans.

The social net benefit of maintaining grassland is estimated to be between 440 and 2,990 EUR/ha/year. The benefits are especially high on areas with high nature value and sensitive soil conditions⁹².

Target 5

The benefits of implementing and achieving control of invasive alien species under target 5 include: protection of biodiversity, lower follow-up costs of conservation measures, lower costs in the health sector (e.g. ragweed is estimated to cost the German healthcare system around 32 million EUR per year⁸⁸³), and lower costs in river maintenance.

Key evidence of costs

Target 2

There is no nationwide assessment of the costs related to implementing target 2, therefore only individual examples can be mentioned, mostly extracted from questionnaire inputs. Nevertheless, according to estimates, the financial requirements for the maintenance and restoration of biodiversity as part of Natura 2000 conditions and to achieve the national goal of a biotope network on 10% of the federal area, totals around 1.5-1.8 billion EUR. This estimate includes the costs associated with protecting and restoring the habitats and species of community importance for agriculture and forestry

⁸⁷⁹ Grossmann, M., Hartje, V. and Meyerhoff, J. (2010) *Ökonomische Bewertung naturverträglicher Hochwasservorsorge an der Elbe* Naturschutz und Biologische Vielfalt Heft 89). Available at: <https://bfn.buchweltshop.de/nabiv-heft-89-okonomische-bewertung-naturvertraglicher-hochwasservorsorge-an-der-elbe.html>

⁸⁸⁰ Scholz, M., Mehl, D., Schulz-Zunkel, C., Kasperidus, H. D., Born, W. and Henle, K. (2012) *Ökosystemfunktionen von Flussauen. Analyse und Bewertung von Hochwasserretention, Nährstoffrückhalt, Kohlenstoffvorrat, Treibhausgasemissionen und Habitatfunktion.*: Bundesamt für Naturschutz/Naturschutz und Biologische Vielfalt 124). Available at: <http://www.buchweltshop.de/bundesamt-fuer-naturschutz/naturschutz-biologische-vielfalt/pdf-nabiv-heft-124-okosystemfunktionen-von-flussauen.html>.

⁸⁸¹ Leonhardt, S. D., Gallai, N., Garibaldi, L. A., Kuhlmann, M. and Klein, A.-M. (2013) 'Economic gain, stability of pollination and bee diversity decrease from southern to northern Europe', *Basic and Applied Ecology*, 14(6), pp. 461-471.

⁸⁸² Deutscher Bauernverband (2020) Situationsbericht 2020/2021. Available at: <https://www.bauernverband.de/situationsbericht/1-landwirtschaft-und-gesamtwirtschaft-1> [Accessed 15 December 2020]

⁸⁸³ Bundesamt für Naturschutz, Neobiota.de (2019) Klimawandel. Available at: <https://neobiota.bfn.de/grundlagen/klimawandel.html> [Accessed 15 December 2020]

within the PAF and the costs for the lacking connecting sites and elements of the biotope network. The calculation approach is based on⁹⁸.

The initial measures implemented for the conservation of bog/marsh and wetlands are cost-intensive (e.g. rewetting) and the investment period is usually across a 25 year period¹²². An evaluation of the project costs related to four peatland projects in Germany (Peenetal, Murnaurer Moos, Pfrunger Ried, Drömling) showed that restoration measures cost between 2,000 and 6,000 EUR/ha, which includes the land acquisition costs required to secure re-wetting. A document⁸⁸⁴ summarising costs associated with measures implemented under the EAFRD to achieve climate change and biodiversity goals states that the investment and maintenance costs for the re-wetting of peat soils (totalling 20% of the total required area to contribute to emissions reduction) encompasses approximately 227 Million EUR/year.

An evaluation of four river restoration projects, including the surrounding floodplains (Ahr 2000, Ruwer, Lutter, Ill) showed restoration measures cost between 2,500 and 14,000 EUR/ha, which also included the land acquisition costs needed to ensure lower nutrient inputs or transform arable areas into grassland.

Costs associated with the protection and restoration of ecosystems in the Natura 2000 network (the habitat clusters relevant for Germany being heathland, raised bogs and fens, grassland, forests, other agricultural ecosystems) and the national biotope network have been estimated to be an average of between 1,523.5 to 1,799.5 EUR/year. This includes regular maintenance, extensification measures and more species-specific measures¹¹⁷.

The funding requirements for green infrastructure in cities are likely beyond the current available funding, but no information is available to specify them further.

Target 3

The EAFRD budget is not sufficient to fulfil the Natura 2000 funding needs in Germany - the funds of almost €600 million per year provided by EAFRD fall significantly short of the €1.4 billion per year needed. The EU is funding the agricultural sector in Germany via the CAP with 6.2 billion EUR provided in the period 2014-2020, with around 20% of funds allocated to EAFRD. Germany shifted 4.5% of the EAFRD (i.e. approximately 229 million EUR/year) from the first to the second pillar for the 2014-2020 funding period⁹⁸, making the EAFRD fund total 9,45 billion EUR (approximately 1,35 billion/year)¹¹⁴. Nevertheless, even with the greening reforms, it is expected that the current CAP will contribute to the ongoing biodiversity loss across the EU⁸⁸⁵.

Conservation measures of grasslands and dry sites are highly cost and labour intensive, while often being associated with operational losses. The compensation payments for land users are therefore relatively high¹²².

The majority of EAFRD funds planned for environmental purposes (60.5%) is spent on dark green agri-environment climate schemes/contractual measures¹¹⁴. The Länder are dedicated to spending 13.4% of

⁸⁸⁴ Gemeinsame Agrarpolitik der EU- Analyse der finanziellen Bedarfe zur Umsetzung der umweltbezogenen spezifischen Ziele gem. Entwurf der GAP-Strategieplan-Verordnung*) im Rahmen des nationalen GAP-Strategieplans 2021 - 2027. Fachliche Einschätzung des Umweltbundesamtes und des Bundesamtes für Naturschutz (2020). Unpublished.

⁸⁸⁵ Pe'er et al., (2014) 'EU agricultural reform fails on biodiversity', *Science*, 344(6188), pp. 1090-1092.

the funds from their rural development programmes on biodiversity measures in the 2014-2020 funding period¹⁸, however the funding allocations across the Länder differs significantly, with Hessen spending 0 EUR and Baden-Württemberg 505,1 million EUR in the 2014-2020 period¹¹⁴, reflecting the diverging priorities across Germany.

Greening is considered to be an overpayment of the rendered ecological impact and greening payments are often higher than the operational costs. The expected effect of greening on nature, especially biodiversity, did not correspond to the value of direct payments and the high bureaucratic burden for farmers and local authorities⁹⁸ (see unsuccessful implementation section).

Target 5

No evidence of concrete costs associated with implementing target 5, however the cost/benefits ratio of measures for IAS, that are not classed as widespread in Germany, is usually relatively cheap/favourable compared to the costs associated with measures related to widespread IAS, which are costly.

Evidence of socioeconomic impacts

Target 2

Reduction of nitrogen loads, avoidance of soil erosion, maintenance of pollination services, and the control of pests are important socioeconomic services delivered by the fulfilment of the Biodiversity Strategy and the nature directives⁹⁸. Additionally, there are important benefits from values gained from protected areas, such as tourism.

There is a high importance attributed to maintaining regulatory ecosystem services e.g. improvement of water and air quality, local climate regulation, protection from extreme weather events etc. and cultural services e.g. recreation, nature experience that are maintained and supported through protection and restoring ecosystems⁸⁸⁶. In Germany, the value of canoe tourism has been determined, demonstrating a yearly gross turnover of almost 49 million EUR, and providing 18,000 full time jobs. In the Elbe, the recreational benefits have been estimated to be several millions EUR annually¹³⁰.

The benefits to society of re-wetting of drained peatlands has been estimated using a case study example in Mecklenburg-Western Pomerania. Overall, the societal benefit from reducing greenhouse gas emissions resulting from the re-wetting measures amounts to at least 1.120 EUR per ha/per year, totalling 33,6 million EUR per year¹³⁰. In Polder Kieve, 55 ha were re-wetted in 2012 and the social benefits are estimated at EUR 1 million per year for each area of 10,000 acres converted to a wet, more extensive management regime. Alongside this there are many climate benefits as well as biodiversity and leisure benefits⁴⁴.

Target 3

The EU impulse was important for the adoption of the Fertiliser Ordinance, which may have negatively affected the reputation of the EU for farmers, as it is often considered to be a cause of additional restrictions. Nevertheless, a large proportion of the general public is pro-environment and therefore these instances cause significant image gains for the EU among the German population (e.g. due to cleaner drinking water, less fertiliser application).

⁸⁸⁶ Collection of survey answers

In Bavaria, a petition launched in February 2019 to seek better protection of plant and animal species (known as the Volksbegehren 'Artenvielfalt & Naturschönheit in Bayern') has become the most successful in southern Germany, gathering around 1,75 million signatures. In response Bavaria announced that it will pass into law the save the bees petition, without putting it to a referendum first⁸⁸⁷. As a result, a significant number of new positions have been created to respond to the social pressure to become more active on nature conservation in the agricultural domain.

Target 5

As mentioned, the release of forbidden species and their impact on native flora and fauna, loss of income for horticultural, forestry, agricultural sectors, potentially less resilience to future climate change impacts, increased tension/heightened conflict between different conservation associations.

4.2.3 Coherence

The national strategies and programmes that offer synergies to the EU Biodiversity Strategy are as follows:

- National Biodiversity Strategy;
- Nature Conservation Initiative 2020;
- The German Sustainability Strategy;
- The Future Strategy for Organic Farming;
- The Action Plan for Insect Protection;
- Protein Plant Strategy;
- Arable agriculture Strategy (soon);
- National Climate Adaptation Strategy;
- Sectoral Strategy for Agrobiodiversity;
- Forest Strategy 2020;
- Protection Strategy for federal areas;
- Masterplan City Green;
- Forest-Climate funds (Waldklimafonds).

Coherence with the EU 2020 Strategy

No concrete evidence was available on this issue.

Coherence with EU Sectoral Policies

The German initiatives to green cities, through funding for green infrastructure and restoration, are increasingly coherent with the urban agenda for cities at the European level, and Germany has been a key player in setting the urban green agenda in the EU. For example, the green city is one of the three visions for the development of European cities in the new Leipzig Charter 2020⁸⁸⁸.

The EU Nitrates Directive should now become a significant driver of reductions in pressures on biodiversity and improvements I ecosystem condition in Germany, through the recent changes in the Fertiliser Act. The strengthened implementation and control of measures under the German legislation implementing the Nitrates Directive in the past few years promises to improve future prospects for biodiversity on farmland and in freshwater.

⁸⁸⁷ The Guardian (2019) Bavaria to pass 'save the bees' petition into law in landmark move. Available at: <https://www.theguardian.com/world/2019/apr/03/bavaria-bees-farming-petition-conservation-nature> [Accessed 15 December 2020]

⁸⁸⁸ European Commission Newsroom (2020) New Leipzig Charter- The transformative power of cities for the common good. Available at: https://ec.europa.eu/regional_policy/en/newsroom/news/2020/12/12-08-2020-new-leipzig-charter-the-transformative-power-of-cities-for-the-common-good [Accessed 15 December 2020]

There are policy synergies with floodplain and river restoration under the EU Water Framework Directive and flood prevention planning under the Floods Directive. The national flood protection programme includes specifically aspects to ensure good ecological status of water bodies according to the Water Framework Directive, to restore floodplains, and increase resilience in the face of climate change.

The major **policy conflicts and incoherence** in Germany are:

The failure of agricultural policy to deliver biodiversity targets. Farmers are currently faced with conflicts between environmental protection and the economic context of farming, for example reducing fertiliser use, reducing water use and making more space for nature affects the income of farmers⁸⁸⁹. There is a lack of government leadership to facilitate transformative change in a way that makes it economically viable to farm in a more sustainable, biodiversity-friendly way;

Conflicts between the expansion of renewable energies and biodiversity conservation, notably the growth of wind energy and the increasing use of wood for bioenergy. Renewable energy expansion in marine areas (German areas of the North Sea and Baltic Sea)- offshore wind farms may significantly decrease the habitats of various seabirds and increase underwater noise through the construction works and increased shipping activity^{890,891};

Infrastructure planning, including the expansion of the trans-European network (TEN-T), the expansion of waterways (Elbe and Oder) for inland water transport, and subsidies for traffic routes in Germany continue to put major pressure on biodiversity, causing more fragmentation and habitat loss;

Climate change and biodiversity policy objectives- peatland conservation in Germany is currently driven by the climate policy objectives and it will be important to ensure a strong integration of biodiversity aspects in the peatland conservation strategy currently being developed. The climate and biodiversity experts have different priorities i.e. increasing the carbon stock of peat and fen soils (more short term oriented) compared to protecting entire habitats to enhance carbon sequestration and resilience in the long-term. This conflict needs to be addressed to ensure peatland conservation does not come at a loss for biodiversity⁸⁹².

Coherence with international biodiversity commitments

No evidence provided as Target 6 was not a focus of this case study.

4.2.4 Relevance

Relevance of EU Biodiversity Strategy

Overall, the EU Biodiversity Strategy 2020 was not very relevant for the German context, as Germany already had a very comprehensive and well-established biodiversity strategy in place. However, it was a useful framework for conservation groups to use politically to help promote and implement biodiversity conservation measures and justify policy developments, while keeping biodiversity on the agenda (see sections below).

⁸⁸⁹ Per. Comm. Interview NABU and management authority Schleswig-Holstein

⁸⁹⁰ Essl, F. and Rabitsch, W. (2013) *Biodiversität und Klimawandel: Auswirkungen und Handlungsoptionen für den Naturschutz in Mitteleuropa*. Springer-Verlag.

⁸⁹¹ Survey answers BfN

⁸⁹² Per. Comm. Interview BUND

Target 2

Target 2 was highly relevant to supporting the restoration of peatlands, freshwater, and urban environments in Germany, helping to contribute towards meeting broader policy objectives and delivering societal benefits as well as the restoration of biodiversity. However, it was not concretised and operationalised sufficiently, which greatly inhibited its effectiveness in the German context.

Target 3

Target 3 was highly relevant in the German context, due to the ongoing biodiversity loss in the agricultural landscape; however, it was not effective.

Target 5

The most important measures of the EU IAS Regulation in the German context are those preventing the initial introduction and release of potentially invasive species. Once a species is established in the wild, control and eradication measures are relatively ineffective and expensive.

Relevance to stakeholder needs

Overall, the EU Biodiversity Strategy with its targets and actions was relevant for stakeholder needs, although it was insufficient in particular areas (see below).

The EU Biodiversity Strategy 2020 was relevant for NGOs, who brought up the targets in their arguments and integrated these into various discussions at the EU, national and regional levels. Therefore, the EU strategy targets were very present at negotiations and discussions with agricultural interest groups and in discussions on the distribution of funds and clarifying compliance. The EU Biodiversity Strategy was used by NGOs to keep the topic of biodiversity on the agenda, to remind Germany of its obligations both at EU and international level under the CBD. The NGOs could use the EU Strategy as a useful reference to request enforcement of its targets in Germany in the Environment Council of the EU.

The EU Biodiversity Strategy, although not greatly relevant at the national level, provides a framework where stakeholders can come together for structured dialogues. Nevertheless, this is mostly relevant at the EU level and not so much at national and Länder level. At the Länder level, government actors perceive the EU Biodiversity Strategy 2020 to have had very little to no influence on conservation. At the same time, requirements by the Commission (e.g. regarding site-level cost estimations for the PAF) are very difficult to achieve. Nevertheless, the individual Länder biodiversity strategies do refer to the EU Biodiversity Strategy 2020 as it provides a political justification and a useful frame of reference.

The lack of mainstreaming and cross-sectoral linkages of the EU Biodiversity Strategy 2020 prevented it from being particularly relevant to other stakeholders.

Relevance of EU Biodiversity Strategy to MS biodiversity needs

Generally, the EU Biodiversity Strategy has had a relatively low priority and status in the national context at the federal and Länder level, as the National Biodiversity Strategy was being developed since 1995 and was adopted in 2007, and therefore took precedence over the EU Strategy. Interviewed stakeholders consider that the EU strategy gave insufficient attention to inland water systems, although freshwater ecosystems are under high pressure in the EU, and that it failed to acknowledge the linkages between biodiversity loss and the climate crisis.

Since 2011 the most relevant themes for biodiversity have crystalized i.e. the urgency of climate change and the importance of upscaling nature-based solutions for climate mitigation and adaptation, alongside integrating predicted effects of climate change on nature into goal-setting and management

planning; the integration of biodiversity objectives into the agricultural sectors, especially the CAP and the forestry and fisheries sectors, for which the previous targets were not achieved; the urgency for comprehensive restoration targets and measures; the link between the protection of nature and the prevention of zoonotic diseases.

4.2.5 EU added-value

Evidence of additional benefits compared to MS action

Additional benefits were accrued specifically in those areas where there were binding commitments at the EU-level, especially regarding the designation and management of Natura 2000 areas, the implementation of the IAS Regulation, and the Nagoya Protocol regulation.

It helped to add additional credibility and trust in politics and society and supporting conservation efforts at national, European, and global level. The EU Biodiversity Strategy is perceived as having been helpful to factualise discussions, although there are still conflicts with stakeholders due to EU legislation being perceived as too strict with regard to the protection of certain species. For example, to improve the legal certainty regarding the conditions under which local nature conservation authorities may make exceptions to species protection regarding the wolf, the Federal Nature Conservation Act was amended in 2020, after there was growing uncertainty among pastoralists.⁸⁹³

Additional jobs were created in the ministries to implement the requirements under the EU Biodiversity Strategy and some progress was made regarding infringement procedures.

Evidence of change in MS ambition and/or commitments due to Biodiversity Strategy

The 2014 indicator report showed that the national biodiversity strategy was not sufficient to address the ongoing degradation of ecosystems and biodiversity loss. Therefore, targets were prioritised through the Nature Conservation Initiative 2020. The EU Biodiversity Strategy was an important element of this prioritisation process. Nevertheless, overall, the EU Biodiversity Strategy did not significantly alter national ambitions, except in the specific areas mentioned above. The global obligations under the framework of the CBD play a stronger role in steering Germany's commitments regarding biodiversity conservation.

The pressure of EU legislation was vital to the adoption of the Fertiliser Ordinance, which the Environment Ministry would not have been able to adopt without justification through the EU legislation and infringement proceedings.

Evidence of change in sectoral ambition due to Biodiversity Strategy

According to the interviewees, the EU strategy lacked strong tools to ensure mainstreaming of biodiversity in key sectoral policies and it lacked an acknowledgement that the protection of biodiversity is a societal undertaking⁸⁹⁴. Furthermore, the lack of concrete targets and commitments regarding the financing of the strategy overall has caused problems in the implementation of its targets. Some key drivers of biodiversity loss, like renewable energy, were not addressed, and the horizontal linkage to climate change was only marginal and insufficiently addressed in the strategy. Interviewees considered that the EU Biodiversity Strategy did not trigger improvements in overall mainstreaming of biodiversity into other sectoral policies. The EU Strategy was not integrated into other sectors and biodiversity conservation was not considered a priority beyond the existing commitments under the Federal Nature Conservation Act and the National Biodiversity Strategy.⁸⁹⁵

4.3 Conclusions

⁸⁹³ Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit (2019) Schulze: Neuregelung zum Wolf ist vernünftiger Interessenausgleich zwischen Artenschutz und Weidetierhalten. Available at: <https://www.bmu.de/pressemitteilung/schulze-neuregelung-zum-wolf-ist-vernueftiger-interessenausgleich-zwischen-artenschutz-und-weidetie/> [Accessed 15 December 2020]

⁸⁹⁴ Per. Comm. Interviews BfN and NABU

⁸⁹⁵ Per. comm. Interviews with NABU, BUND, BfN and management authority Schleswig-Holstein

Biodiversity in Germany is under increased pressure and continues to decline, particularly in agricultural and coastal areas. The key drivers of biodiversity loss continue, most notably the loss of structural diversity in farmland, fragmentation from urban sprawl and transport infrastructure and high nutrient inputs.

4.3.1 Effectiveness

Germany has developed various strategies that contribute towards achieving the targets of the EU Biodiversity Strategy. For target 2 some important developments were the Blue Belt Programme, the Defragmentation Programme, the National Green Infrastructure Concept, the various green in cities initiatives and the flood protection programme. Although Germany developed a Prioritisation Framework for ecosystem restoration in 2015 prioritising the restoration of wetlands (including bogs, fens, peatlands, and marshes) and flood plains (including grasslands), this did not lead to significant progress in restoration on the ground. Most progress has been at the local level and would need to be scaled up to significantly contribute towards achieving the goals under target 2.

Similarly, regarding target 3, although progress has been made and some drivers of biodiversity loss in agricultural landscapes like fertiliser use are being addressed (through the Fertiliser Ordinance, Act and Regulation), this has not been sufficient to reduce the overall pressure of the agricultural sector on biodiversity. Especially Germany's failure to effectively halt the deterioration of protected species-rich grasslands has caused EU-wide concern.

Most progress has been made on target 5 and Germany has successfully passed legislation implementing EU Regulation 1143/2014 on invasive alien species. As a result of this implementing legislation, the necessary additional provisions to the EU Regulation were included in the Federal Nature Conservation Act and have been effective in enforcing the EU Regulation. In the early detection system works well, however, once species are (re)established in the wild, control measures have been shown to be relatively ineffective.

The main barriers, preventing successful implementation of EU targets are largely related to funding gaps, inefficiency of existing funds (e.g. lacking biodiversity benefit of greening payments), the federal structure in Germany, and the lack of mainstreaming biodiversity conservation into sectoral policies or funding priorities (e.g. lack of integration of PAF priorities for Natura 2000 and implementation of the EAFRD through rural development programmes). Contrastingly, political will, the presence of legally binding targets and objectives, and the availability of funding for conservation measures are key factors that contribute towards effective conservation action.

4.3.2 Efficiency

Overall, the integration approach at the EU level to finance nature conservation through funds of sectoral policies that are not directly oriented towards environmental priorities, has not been successful in Germany. Biodiversity objectives are not sufficiently aligned to the goals of other policies, and in Germany this has resulted Länder's declining use of EU funds. The overall financial gap for implementing nature conservation measures in Germany has been calculated as 1,96 billion EUR/year.

4.3.3 Coherence

There are multiple synergies of the EU Biodiversity Strategy and national strategies and programmes, however some key conflicts exist with economic, climate change, infrastructure, and renewable energy areas, which have had damaging effects on biodiversity and/or hindered progress towards the achievement of the targets.

4.3.4 Relevance

Overall, the EU Biodiversity Strategy 2020 was not relevant for the German context, as Germany already had a very comprehensive and well-established biodiversity strategy in place, but it was a useful political framework to help promote and implement biodiversity conservation measures and justify policy developments, while keeping biodiversity on the agenda. The lack of mainstreaming and cross-sectoral linkages of the EU Biodiversity Strategy 2020 prevented it from being particularly relevant for the majority of stakeholders.

4.3.5 EU added value

The EU Biodiversity Strategy provided the most added benefits on commitments that were legally binding, especially regarding the designation and management of Natura 2000 areas, the implementation of the IAS Regulation and the Nagoya Protocol. Furthermore, the EU strategy was important to prioritise the biodiversity targets in the Nature Conservation Initiative 2020.

4.4 Annex

Table 4-1 German Biodiversity Strategy national targets and measures that correspond to EU Biodiversity Strategy 2020 targets, and associated programmes and initiatives

EU Biodiversity Strategy 2020	DE National targets	Related strategies/action plans/measures
Headline target: halt the loss of biodiversity and the degradation of ecosystem services	National target 5: By 2010, the decline in endangered habitat types has been halted. Thereafter, those biotope types which are under threat of complete destruction or severely endangered according to the Red Lists will increase again in terms of their area and number, degradations have been halted, and regeneration has begun.	14 of the 16 German Länder have developed their own action programmes. Progress on implementation not known.
	National target 20: By 2010, the decline in species and the degradation of (coastal and marine) habitats has been halted.	Support for implementation provided by funding programmes:
	National target 21: By 2010 the decline in the diversity of wild species that exists today has been halted. After that, the trend is reversed, leading to greater diversity of domestic species over large areas.	<ul style="list-style-type: none"> • chance.natur; • Federal Biodiversity Programme; • BMBF-BMU funding measure Research on Implementation of the National Biodiversity Strategy (F&U NBS).
	National target 27: Implementation of the National Strategy on Biological Diversity.	Nature Conservation Initiative (2015)
Target 1: Fully implement the Birds and Habitats Directives	National target 5 Measure 1: legal protection of SACs; Measure 2: management plans for SACs; Measure 3: projects implemented under federal funding programmes; Measure 4: protecting natural heritage.	National Natural Heritage (Nationales Naturerbe) Ongoing work on developing an action plan for protected areas.
	National target 18: By 2020, a well-functioning management system for all major protected areas and Natura 2000 sites has been established.	Federal Government/Länder Working Group on Nature Conservation, Landscape Management and Recreation (LANA) review of management quality of National Parks
Target 2: Maintain and restore ecosystems and their services	National target 8: By the year 2020, throughout 2% of Germany's territory, nature is once again able to develop undisturbed in accordance with its own laws, and areas of wilderness are able to evolve.	German Sustainability Strategy (2016) target for 2% wilderness More Wilderness for Germany initiative Wilderness fund launched in 2019

EU Biodiversity Strategy 2020	DE National targets	Related strategies/action plans/measures
	National target 11: By 2020, existing transport infrastructure does not normally give rise to any substantial impairment of the biotope network. Wildlife passability of fragmented areas has been achieved (as specified by federal nature conservation law)	Defragmentation Programme (2012). Strategie zur vorbildlichen Berücksichtigung von Biodiversitätsaspekten für alle Flächen des Bundes (Ströff) 2016. National Green Infrastructure concept (2017)
	National target 23: By 2020, there has been a marked increase in greening of areas of human settlement including close to homes (e.g. courtyard planting, small areas of lawn, and green roofs and facades). Publicly accessible green spaces with varying qualities and functions are available within walking distance of most homes.	Green in the city white book (2017) Urban Nature Master Plan in June 2019
	National target 24: By 2020, watercourses and their riparian zones will be protected in their role as habitats, and the typical diversity of the natural area in Germany will be guaranteed.	Federal Blue Belt Programme (Blaues Band Deutschland) 2017 BMU funding programme for the natural development of riparian zones
	National target 29: Improve the basic data on the status and development of biological diversity in Germany.	Nationally funded research projects e.g. <ul style="list-style-type: none"> • BfN projects on ecosystems and their services; • Natural Capital Germany - TEEB DE (2007-2010); • Thünen Institute studies on ecosystem services; • BMVI Research project 2016-2022 investigates transport infrastructure verges as a habitat network; • BMBF's Bridging in Biodiversity Science (BIBS) project (since 2016).
Target 3a: Increase contribution of	National target 13: By 2020, biodiversity in agricultural ecosystems has increased significantly.	Federal Scheme for Organic Farming and Other Forms of Sustainable Agriculture (BÖLN).

EU Biodiversity Strategy 2020	DE National targets	Related strategies/action plans/measures
agriculture & forestry to maintaining and enhancing biodiversity	National target 14: By 2015, the area accounted for by agricultural biotopes of high nature conservation value (high-grade pasture, meadow orchards) has been increased by at least 10% compared with 2005.	Amendments to the Fertiliser Application Regulation (2017)/Material Flow Accounting Regulation (2018). BMEL national sectoral programmes to implement the agro-biodiversity strategy.
	National target 15: Exceedance of critical loads for nitrogen inputs (eutrophication) into nitrogen-sensitive ecosystems will be reduced by 35% between 2005 and 2030.	
	National target 16: The target for 2028 to 2032 is to achieve a five-year average reduction in nitrogen surplus on agricultural land in the total N balance to 70 kilograms per hectare per annum.	
	National target 22: Regionally adapted crop varieties threatened by genetic erosion, so-called farmyard and field varieties, and endangered livestock species have been safeguarded by in-situ or on-farm and ex-situ conservation.	
Target 3b: Increase contribution of forestry to maintaining and enhancing biodiversity	National target 6: By 2020 the conditions for typical forest communities have improved (diversity of structure and dynamics). Rejuvenation of the trees and shrubs in the natural forest community is largely natural. Natural processes for strengthening ecological functions are being used under near-natural management forms. Mature timber and dead wood are present in adequate quantity and quality.	National Forest Strategy 2020 (Nov. 2011) Certification schemes for sustainable forestry. Funding for private and municipal forests under the Joint Task for the Improvement of Agricultural Structures and Coastal Protection (GAK). Amended 2016/2017 to allow co-funding of EAFRD. Many federal states have incorporated the 5% or 10% target for natural forest development in their programmes and/or strategies.
	National target 7: By 2020, forests with natural forest development account for 5% of the wooded area and 10% of publicly owned wooded area.	
	National target 25: Adapt forests to the challenges of climate change, for example by growing mixed stands of maximum diversity.	
Target 4: Fisheries	National target 12: Making fishing sustainable and ecosystem-friendly.	Developing fishing regulations for the German Natura 2000 sites in the EEZ. Promoting environmentally sound fishing techniques.
Target 5: IAS	National target 17: Avoiding the introduction of invasive alien species and continuing to release and make commercial use of only such transgenic organisms as are not expected to present any threat to marine and coastal ecosystems, lakes, ponds, pools and artificial and natural ponds, having regard to the special conditions of these ecosystems. - Compliance with	National action plan to address the unintentional introduction and spread of invasive alien species of Union concern.

EU Biodiversity Strategy 2020	DE National targets	Related strategies/action plans/measures
	the obligations arising from Regulation (EU) No 1143/2014; in the case of transgenic organisms, protection from adverse effects on biodiversity.	
Target 6: Help avert global biodiversity loss	National target 3: Step up reduction in environmentally counter-productive transfer Payments (target in national biodiv. strategy & sustainable development strategy).	Also target in German Sustainable Development Strategy - biannual government Subsidy Report Sustainability Impact Assessments of private subsidies
	National target 4: Improve target group specific information for consumers and raise awareness of the need for nature-friendly and sustainable consumption.	‘KonsumWende’ (transition to sustainable consumption) project, 2017-2019 National Programme on Sustainable Consumption (2016) (R&D projects)
	National target 10: By 2030 the additional land take due to settlement and transport does not exceed 30 hectares per day. Ideally, in the long term, the actual use of new land should be largely replaced by the reuse of previously developed land.	2050 Climate Action Plan (2016) aspires to a circular economy for land (net zero target) by 2050, and target 10 has been included in the 2030 Climate Action Programme.

5 Lithuania

5.1 Introduction

5.1.1 Overview of key biodiversity state, trends, pressures and drivers

Lithuanian ecosystems include natural and semi-natural (forests, bogs, wetlands, meadows), and anthropogenic (agrarian and urban) ecosystems. Among natural ecosystems, forests are particularly important to Lithuania, covering 33% of the country's territory. Wetlands (raised bogs, fens, transitional mires, etc.) cover 7.9 % of the country, with 70% of wetlands having been lost due to drainage and peat extraction between 1960 and 1980. Changes in wetland plant communities resulted in the replacement of moss and grass communities by trees and shrubs, and fens not directly affected by land reclamation have become drier as a result of a drop in the water table. Lithuanian meadows are of two types: flooded meadows, which are naturally occurring and regularly inundated preventing overgrowth of shrubs and trees; and dry (or continental) meadows occurring on grazed or mown forest glades and drained swamps. Their overall status is not better than that of other natural ecosystems. As a matter of fact, half of all meadows were destroyed during land reclamation and expansion of pasture and arable land area, or due to a decline in grazing and mowing, to the extent that there are, at present, no remaining large continental meadows. The situation of aquatic ecosystems is also a matter of concern. There are 29,000 rivers with a total length of 64,000 km in Lithuania, the Nemunas River basin occupying 74% of the territory of the country. Due to the construction of dams, approximately 70% of spawning sites of potential catadromous fish species have disappeared. In some cases, river and lake ecosystems continue to be impacted by anthropogenic eutrophication.

The same negative trend is observed in regard to anthropogenic ecosystems. While agricultural land comprises 54% of Lithuania's territory (roughly 70% of that is arable land and 30% meadows and pastures), approximately 400,000 ha of agricultural land is not farmed, and acts as an ecological niche for weeds and invasive plant species. Habitat deterioration is occurring in regions with very productive and expensive lands as crop areas are expanded. Finally, the expansion of built-up areas in urban ecosystems comes at the expense of parks and other urban plantations. At the same time, new parks and plantations are using alien and non-native plant species which are less sensitive to air and soil pollution, thus replacing native species. The degradation of ecosystems results in loss of habitats, with major consequences on wildlife species. Currently, 18.9% of all plant species, including 1.87% of all known fungi species and 31% of all known species of lichens, are listed in the Lithuanian Red Data Book. The list also contains 8% of all fish species.

In recent years, commercial fish populations have decreased both in the Curonian Lagoon and Baltic Sea, mainly as a result of water pollution, changes in food abundance and invasive species⁸⁹⁶. In addition, 5 of the county's 13 amphibian and reptile species, as well as 80 bird species, occur in the Lithuanian Red Data Book, threatened by loss, degradation or fragmentation of habitats. Among mammals, 18 of 70 known species have been reported as endangered. At the same time, the number of invasive species in Lithuania is rapidly increasing. There are 548 known alien plant species in the country, of which 46 are invasive and another 60 being potentially invasive. Thirty-five species are included in the List of Invasive Species of Lithuania approved by Ministerial Order. For instance, Sosnovsky Cow Parsnip (*Heracleum sosnovskyi*) was introduced for agricultural purposes as a forage plant

⁸⁹⁶ CBD Country profile, Lithuania <https://www.cbd.int/countries/profile/?country=lt#facts>

but, because of its ornamental appearance, has since spread in farmsteads. At present, this fast self-spreading species is successfully entering protected areas, exterminating native species.

An example of the dependency of the Lithuanian society on natural resources is provided by declining fishing stocks, which have a negative social effect both in terms of employment and income.

The status of biological diversity and biological resources in Lithuania is mainly influenced by the following processes:

- essential changes in geo-ecological conditions due to land drainage during the Soviet period;
- intensive forest felling;
- damage of forest ecosystems as a result of natural disasters (pests, etc.) and pollution; destruction of the biological diversity of ligneous plants as a result of the use of selected tree species;
- changes in the ecological conditions of meadows due to a decline of economic activities there;
- diffuse agricultural pollution, consisting of loads of organic matter, nitrogen and phosphorus compounds which enter soil with manure and mineral fertilisers, as well as point pollution, consisting of loads of discharge from wastewater treatment plants (WWTP);
- surface runoff and industrial wastewater which are key factors affecting the ecological status of water bodies;
- morphological changes of water bodies during Soviet times as a result of the straightening of riverbeds resulting in the destruction of specific habitats of water organisms;
- illegal fishing in natural inland waters, inefficient stock-taking;
- pollution of the sea with industrial and municipal waste waters;
- growth of recreation activities in the natural environment;
- destruction and decrease of natural landscape islands in urbanized environments;
- development of road networks and their load intensification.

EEA data from Habitat Directive Article 17 reporting⁸⁹⁷ shows, that in Lithuania agriculture, forestry, invasive alien species and natural processes are major pressures/threats to natural ecosystems.

Also 5th National Report to CBD points out that the main threats and pressures to species and habitats reported under Habitats Directive are: natural biotic and abiotic processes (without catastrophes), agriculture, silviculture, forestry, modifications of natural system and pollution.

⁸⁹⁷ EEA Art 17 national summary dashboard, Lithuania <https://www.eea.europa.eu/themes/biodiversity/state-of-nature-in-the-eu/article-17-national-summary-dashboards/main-pressures-and-threats>

5.1.2 Overview of the national biodiversity policy framework, governance and overall progress towards the EU and global 2020 biodiversity targets

Table 5-1 Overview of Lithuania Biodiversity national targets and related actions and measures to the Targets of the EU Biodiversity Strategy to 2020

EU Biodiversity Strategy 2020	LT National targets	Related strategies/action plans/measures
Headline target: halt the loss of biodiversity and the degradation of ecosystem services	The Strategy sets the following objective in the area of biodiversity to be achieved by 2020: to preserve biodiversity and to ensure its rational use	National Sustainable Development Strategy (approved by Resolution No 1160 of the Government on 11.9.2003, as last amended on 16.9.2009) ⁸⁹⁸
	Section “Conservation of Biological Diversity”. The strategic objective is to halt the loss of biodiversity and the deterioration of the quality of ecosystems and their services, and where possible to restore them	Action Plan on Conservation of Landscape and Biodiversity for the period of 2015-2020 ⁸⁹⁹ (in Lithuanian) Ministry of Environment of the Republic of Lithuania ⁹⁰⁰ has overall responsibility for biodiversity and nature conservation. Within the Ministry of Environment, biodiversity protection issues are coordinated by the Nature Protection Policy Group. The State Service for Protected Areas under the Ministry of Environment coordinates activities of protected areas administrations in protected areas, including in Natura 2000 sites. Environmental Protection Agency ensures continuous and complex environmental monitoring, evaluation, forecast of and information on environmental quality and nature resources use in accordance with State Programme on Environmental Monitoring.
Target 1: Fully implement the Birds and	To develop the network of protected areas and the natural frame, to incorporate them into the European ecological networks and to increase the coverage of protected areas in Lithuania to 14-18 % of the country’s territory (by 2020)	The National Sustainable Development Strategy

⁸⁹⁸ National Sustainable Development Strategy, 2003

https://am.lrv.lt/uploads/am/documents/files/ES_ir_tarptautinis_bendradarbiavimas/Darnaus%20vystymosi%20tikslai/NDVS/NDVS.pdf

⁸⁹⁹ Action Plan on Conservation of Landscape and Biodiversity for the period of 2015-2020 <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/34975f709a3411e4b92e9028929aad91/asr>

⁹⁰⁰ Ministry of Environment of Republic of Lithuania/ Nature conservation <https://am.lrv.lt/lt/veiklos-sritys-1/gamtos-apsauga>

EU Biodiversity Strategy 2020	LT National targets	Related strategies/action plans/measures
Habitats Directives	<p>Section “Protected areas”, overall objective: to ensure good status and proper use and management of landscape and biodiversity as well as of natural and cultural values, and adapt them to visiting (especially in state parks). Sub-objectives 1) Creating prerequisites for the conservation of landscape, biological diversity and natural and cultural values of protected areas, primarily of state parks 2) Maintaining the most valuable parts and sites of protected areas, and adapting protected areas to environmental education and training and the dissemination of information on protected areas 3) Enhancing the effectiveness of the monitoring and evaluation of the importance and state of valuable sites in protected areas, and ensuring high-quality data collection</p> <p>Section “Conservation of Biological Diversity”, sub-objective 1- to achieve a favourable conservation status of protected fauna, flora and fungi species and habitat types (including improving the legal regulation in the field of conservation of protected species; and improving and maintaining adequate natural conditions in habitats of protected species); and sub-objective 4 - to ensure the proper conservation, restoration and use of wild flora and fauna (including, creating legal prerequisites for the proper conservation, restoration and use of wild flora; Increasing the fish stocks in inland water bodies through favourable conditions for their reproduction, migration and spawning, and stocking some of the fish species; and providing adequate help and care for injured and distressed wild animals, those in an unsuitable environment or confiscated wild animals)</p>	<p>Action Plan on Conservation of Landscape and Biodiversity for the period of 2015-2020 Although the target regarding terrestrial protected areas is not yet met, its network covers 15.64% of the country’s territory; and a comprehensive network of marine and coastal protected areas, covering over 10% of territorial waters is under development (according to CBD country profile, Lithuania, 2020).</p> <p>The work on species conservation plans and management plans for protected areas as required by EU legislation is underway (over 100 plans for various protected areas already prepared, and even more in preparation).</p>
Target 2	<p>The Lithuanian green infrastructure (GI) strategy is in line with the spatial system developed in the country, called the ‘nature</p>	<p>The concept is put into legislation (the Law on Environmental Protection, the Law on Protected Areas, and the Master Plan of the Territory of the Republic of Lithuania).</p>

EU Biodiversity Strategy 2020	LT National targets	Related strategies/action plans/measures
	frame', through the concepts of nature frame and the ecological network.	The nature frame areas cover approximately 60 % of Lithuania's total area
Target 3	<p>The National Sustainable Development Strategy Foresees to increase the Lithuanian forest area by 3 %, to expand other areas of natural perennial vegetation and to reduce the inequality of forest layouts, paying special attention to the afforestation in the districts with the smallest forest cover (by 2020)</p> <p>Direction 21,22,23 (of the Environmental Protection Strategy): Protection and rational use of forests and their resources</p>	<p>The National Sustainable Development Strategy</p> <p>National Environmental Protection Strategy⁹⁰¹</p> <p>Rural Development Programme for 2014-2020 continues supporting broad measures of landscape and biodiversity conservation, water and soil protection, including conservation of Natura 2000 areas and areas with natural constraints</p> <p>National Forestry Development Programme aims at protection and enhancement of sustainability of forest ecosystems</p>
Target 4	<p>Direction 25,26,27 (of the Environmental Protection Strategy): responsible use of fish resources, improvement of fish communities in internal waters, restoration/improvement of valuable fish stocks</p> <p>Operational Programme identifies the need for reduction of the fishing effects on marine environment, including the avoidance and reduction, as far as possible, of unwanted catches, by : 1) using innovations related to marine biological resources; 2)improving, adapting and implementing new fishing gears and methods; 3) adapting fishing ports and landing sites to facilitate the compliance with the obligation to land all catches; 4) implementing conservation measures; 5) supporting collection of waste from the sea.</p>	<p>National Environmental Protection Strategy</p> <p>5th National Report to CBD⁹⁰²/ Operational Programme of the Fisheries Sector for 2015-2020</p> <p>The programme includes measures aimed at conservation and sustainable use of biodiversity (as described in the first column).</p> <p>Cormorant Management Action Plan was approved in 2013, and its objective was the prevention and reduction of damage caused by cormorants in fish farms as well as for forestry, without endangering the cormorant population in the nature</p>

⁹⁰¹ Parliament of the Republic of Lithuania, 2016. National Environmental Protection Strategy <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/609a6f82ea4e11e4ada6f94d34be6d75/HRioeQqpWx>

⁹⁰² CBD, 2020. 5th National Report, Lithuania <https://www.cbd.int/doc/world/lt/lt-nr-05-en.pdf>

EU Biodiversity Strategy 2020	LT National targets	Related strategies/action plans/measures
	Special attention is devoted to the some pond aquaculture farms - the sites where many rare species of birds nest, settle and stay during migration. Support is provided to pond aquaculture farms that have to adapt in Natura 2000 sites to higher standards of operation or incur losses due to established additional requirements for the activities of such farms	
Target 5	Section “Biological Diversity”, Sub-objective 3 - to slow down and/or halt the spread of invasive species	<p>Action Plan on Conservation of Landscape and Biodiversity for the period of 2015-2020</p> <p>There is Invasive Species Control Council which consists of representatives of public and scientific institutions has consultative role on the invasive species issues. The national list of invasive species contains 39 species (both plants and animals). The list is constantly reviewed and complemented by new invasive species. Measures for control of invasive alien species are undertaken in order to minimise their impact on species and habitats of Community interest. 7 invasive alien species are have been targeted with assistance of EU structural funds: 2 mammal species (<i>Nyctereutes procyonoides</i>, <i>Mustela vison</i>), 1 fish species (<i>Perccottus glenii</i>), 1 crustacean species (<i>Orconectes limosus</i>) and 3 plant species (<i>Acer negundo</i>, <i>Heracleum sosnovskyi</i>, <i>Lupinus polyphyllus</i>).</p>
Target 6	<p>Biodiversity conservation is mainly funded via different EU funds and state budget (Environmental Protection Support Programme), but also from European Economic Area Financial instruments. Rather considerable part of income comes from Hunting and Fisheries Licence fees (about 3 Mio euros)</p> <p>Lithuania is a party to HELCOM, and participating in it's international action programmes aimed at protection of Baltic Sea environment</p>	<p>5th National Report to CBD</p> <p>Participation in HELCOM ensures involvement, facilitates cooperation and ensures coherence and of actions for protection of Baltic Sea environment. The Member States have to prepare a programme of measures and report on it to the HELCOM.</p>

5.1.3 Choice of targets to focus the national case studies, and justification

This case study focuses on two targets of the EU Biodiversity Strategy to 2020: Target 3A “Increase the contribution of agriculture and forestry to maintaining and enhancing biodiversity” with particular attention to forestry; and Target 4 “Ensure the sustainable use of fisheries resources”. This reflects the scale and economic and ecological importance of forests and marine ecosystems.

Among natural ecosystems, forests are particularly important to Lithuania, covering 33.6 % of the country’s territory. However, intensive forest felling, and damage of forest ecosystems (as a result of natural disasters, such as pests, and pollution), along with incomplete network/insufficient coverage of N2000 are posing damage/threats to forest biodiversity. Some of RDP measures (afforestation practices with the use of ploughing), are also causing negative consequences to forest biodiversity.

Although Lithuanian marine N2000 network is completed, due to the ongoing pollution of the Baltic Sea, invasive alien species, illegal fishing (in inland waters) and inefficient stock-taking fish stocks in the Baltic Sea and Curonian lagoon are still declining. Next to biodiversity concerns, this has a negative social effect (both in terms of employment and income) as well.

The targets were selected in consultation with the Commission.

5.2 Country-specific biodiversity target focus

5.2.1 Effectiveness

Overall progress towards the Biodiversity Strategy

As for the overall progress, the views of respondents were mixed (government representatives were more positive than NGOs and/or researchers).

The national authority (Ministry of Environment) representative considered overall progress as moderate (overall - not much progress towards better integration of nature conservation measures neither in forestry neither in fisheries).

When it comes to evaluation criteria of the Target 3B - coverage with Forest Management Plans, the situation is good (100% in state forests - requested by the law). Not all private forests have management plans. A legal requirement is that the private forester has to prepare a management plan if forest holding is exceeding 3 ha and forest logging (final felling) is being planned. This practice is in place for 3 decades. Another situation when the forest management plan is mandatory - when an application for support from RDP is being prepared, except for Natura 2000 compensatory payment for restricted forest felling. In latter case, the decision on granting the compensatory Natura 2000 payment is made on the information from State Forestry Cadastre. Given this legal context during last decade (2011-2020) management plans for private forests have been prepared for 249 thous. ha or 28 % of all area of private forests.

Management plans have a 10 year renewal cycle. There is a constant need to update these plans according newest habitats and protected species inventories data and integrate nature management and ecosystem restoration measures. There are certain methodological difficulties about the nature restoration methods in forests. Lack of time and human resources for quality implementation of the policy (biodiversity integration into forestry), especially outside of the protected areas network, is always an issue. The situation is better in protected area network, while outside of the network process

is much less controlled and mainly is based on voluntary efforts stimulated by forest certification scheme (FSC) and its market based advantages.

Regarding sustainable use of forests, the situation is good. It is required by law that all forest holdings managing 500 ha or more of forest must not exceed annual limits calculated as maximum sustainable use limit, and all smaller forest holdings must not exceed 10 years sustainable use limit. The methodology on calculation how much of forest (timber) use is sustainable is well established and strictly followed. But it does not always help to address biodiversity loss (despite of fact that all Lithuanian forests are functionally zoned into 4 functional categories with distinct management regimes). This practice of categorisation is much favoured by foresters because it allows for effective planning and gives legal certainty. Unfortunately, the process of preparation of territorial planning documents for categorisation of forests is rather slow and this has negative consequences on nature conservation policy implementation. Newest biodiversity data are used less effectively as it is expected by nature conservationists.

In the view of the researcher, overall, progress was acceptable/moderate. There is a big emphasis on forest management plans, including environmental protection (in Lithuania there is historically strong forest inventory/management planning; a good basis to build on). In State forests -environmental measures are already implemented. What is missing is a holistic approach (interactions with different institutions). Most of the pressure is on Ministry of Environment. There is no institutional framework to make BDS 2020 to work well. On paper - yes; but in practical implementation - lack of interaction between ministries, a lack of interaction with stakeholders (land & forest owners). Legal act changes were made, forest management plans contain many relevant measures, but there no sufficient cooperation between organizations and stakeholders.

An NGO representative was more critical (assessing situation in forestry as bad to very bad). In particular, designation of Natura 2000 in forest areas is a problem. The lack of institutional capacity (also within Ministry of Environment) was noted. There is need for stronger enforcement (in post-Soviet system, if there are no command-and-control measures, there is a high risk that they will be disobeyed)

In the view of another NGO respondent, overall BD Strategy is inefficient, top-down approach (from Brussels to local level), not looking at specifics of every territory. With this approach, the EU biodiversity strategy is not suitable for taking into account the challenges in the member states with regard to the protection of biodiversity. The natural conditions in the individual member states are too different for them to be meaningfully taken into account with an instrument such as the EU biodiversity strategy, which pursues a one-size-fits-all top-down approach. For the protection of biodiversity, national commitment is particularly effective. In contrast, the goals of the EU biodiversity strategy are rather counterproductive for long-term sustainable protection.

According to government (Ministry of Environment), stakeholder participation (in preparation of National Biodiversity Action Plan) was appropriate; stakeholders were invited and participated in the process of preparation of national action plan for the period 2014-2020 (3-4 the most active and member-based NGOS and sectoral ministries). However, it was noted that engagement of the stakeholders might be more energetic.

In the opinion of another NGO representative, the involvement of stakeholders was in a very formal way (and in his opinion, Ministry of Environment prefer to avoid communication with land owners). Up until now government had a very bureaucratic way of working. Even if in legislation consultations are foreseen - in many instances this is working formally, or not working at all. Regarding Natura 2000 management: when an NGO was taking the initiative (about NATURA 2000 establishment), for instance, a letter to the Ministry was sent in June - no response has been received before now (December 2020). As well, there are complicated regulations - Natura 2000 mentioned in Law on Protected Areas of the Republic of Lithuania, but in reality is done in a so mixed way that it can be interpreted as not area under regulation of this particular law (if Natura 2000 not included into territory of national protected territories) is not protected (bureaucrats does not want to go through compulsory planning process and attempting in such way to avoid obligatory consultations with land/forest owners).

According to the Ministry of Agriculture, regarding implementation of EMFF related measures, stakeholders are involved in the process of shaping and implementation of the fisheries policy at the national level. Taking into account the fact that the input of MoA to the Biodiversity Strategy is effected mostly through the measures of the EMFF, stakeholders' participation is provided by their involvement in the EMFF Operational Programme (OP) Monitoring Committee (as it is stipulated by the Art. 47-48 of Regulation (EU) No 1303/2013 and other fora such as Project selection committees, and expert and working groups). The monitoring committee is composed of representatives of the relevant authorities of the Republic of Lithuania and intermediate bodies and of representatives of the partners (referred to in Article 5 of Regulation (EU) No 1303/2013). Partners are selected on the basis of the principles of the current practice, transparency, impartiality and effectiveness. They include regional and local authorities, representatives of fisheries and aquaculture sectors and other subsectors, e.g. the processing sector, sectorial organisations of social partners, environmental non-governmental organisations, scientific and research organisations active in the fisheries sector, national or regional networks of fisheries local action groups and representatives of civil society including organisations responsible for the promotion of social inclusion, gender equality and non-discrimination. The partners among other functions participate in the EMFF OP programming process, setting up project selection criteria etc.

Monitoring/ Indicators: according to Ministry of Environment, there are no special indicators for EU BDS itself; system of measuring the progress of implementation of the Birds and Habitats directives is much more developed. National Habitat monitoring was started 2 years ago, but before there was no systematic approach to conservation status assessment of the natural habitats. Now the quality data collection and assessment system is in place, for whole country. RDP uses Common Bird Index (CBI) for the evaluation of its impact on biodiversity. CBI is also used for evaluation of the status of bird species under Birds directive. There is clear need to monitor other agriculture-dependant species (butterflies, insects etc.) - but these data are not collected by Ministry of Agriculture. Another idea- would be useful to have also common forest birds index for monitoring of biodiversity in forests.

Evidence of successful implementation of focus targets

Target 3b

Both national government and NGO representatives noted that the national inventory of habitats of Community interest (work of 5 years) in the terrestrial part of the country was completed (including forest areas) in 2015. It can be considered as a success story for national nature conservation policy as it helps for completion of Natura 2000 network, establishment of national conservation objectives for

habitat types as well as serves reference in process of monitoring of habitat conservation status. Two projects supported by EU Structural Funds provided evidence for the higher level of biodiversity conservation ambition across the country (including forests).

A government representative pointed out several achievements that can be considered as success stories:

- National inventory contributed to understanding of actual conservation status of habitats, filled in the scientific knowledge gaps on the actual extent of the natural habitats, and allowed for the development of country scale habitats conservation status surveillance (monitoring) scheme. Main results of the project can be found on the website of the Ministry of Environment⁹⁰³;
- The extension of application of Natura 2000 payments in forests scheme beyond the boundaries of Natura 2000 network. The scheme is implemented under the Lithuanian Rural Development Programme for 2014-2020. The extension of the support scheme provided for management of the conflict between private forestry and efforts of conservation nesting habitats of large woodland birds. The scheme was welcomed by the private foresters, and indirectly contributed to the higher rate of preparation of forest management plans for privately-owned forests⁹⁰⁴;
- The stakeholder agreement on the new FSC National Forest Stewardship Standard of Lithuania which will be used for forestry certification scheme run by Forest Stewardship Council (FSC). It is the first national standard in the region and the Baltic States. Many modern and up-to-date policy nature conservation criteria are embedded in the standard, e.g. minimum 10 % of the management unit area must be without commercial management activities (previous standard requested 5 % only) and ecological prioritization of these no-management areas was substantially improved. New standard came into force as of 01-01-2021. 100 % of state owned forests are FSC certified and regularly audited (More information on new standard can be found on FSC website⁹⁰⁵).

A government representative mentioned LIFE Integrated Nature project NATURALIT as a success story and very good practice. Ministry of Environment is also looking forward to Strategic Nature Projects (new feature of LIFE programme, introduced in 2021), which potentially would help to cope with high level of ambition of nature conservation. This new type of projects looks promising.

According to an NGO representative, the new government is taking a more serious approach towards biodiversity integration in forestry. National agreement on forestry policies is expected to be signed mid -2021. There was successful campaign organized by BEF (environmental NGO), to protect Punios silas - 3000 ha of valuable old forest, to establish strict nature reserve (and to stop forest cutting).

Within the time period 2010-2020, one of the biodiversity targets - to increase forest area in LT to 35% (by 2030); was partly achieved: 33,6% (forest area increased quite significantly) Political message +financial support worked (in abandoned agricultural land, and other lands). In the previous period - up until 2013 - the measure was very popular. In the new RDP (2014-2020), however, by 40% were reduced payment sums for afforestation (due to significantly lowered costs of compensation for forest planting and maintenance, and exclusion of VAT from compensation) and prolonged period of supervision (from 7 to 12 years, along with small annual compensation ~150-250 EUR/ha). Furthermore, there are serious

⁹⁰³ <https://am.lrv.lt/lt/veiklos-sritys-1/saugomos-teritorijos-ir-krastovaizdis/igyvendinti-projektai>

⁹⁰⁴ More information about the Natura 2000 payment scheme (the rules) on the website of the National Paying Agency under the Ministry of Agriculture <https://www.nma.lt/index.php/parama/lietuvos-kaimo-pletros-20142020-m-programa/administravimo-ir-igyvendinimo-taisykles/su-natura-2000-ir-vandens-pagrindu-direktyva-susijusios-ismokos/8734>

⁹⁰⁵ <https://fsc.org/en/document-centre/documents/resource/463>

sanctions in case of (even partial) failure - if forest is damaged by wild animals, drought or forest fire - there is twice longer period of sanction (100% repayment of compensation), even if forest continues to grow.

According to a researcher, the afforestation measure was successful in private lands (due to state subsidies), and many private land owners used this measure. There were higher fees for higher value species. In private sector - thousands of ha every year were afforested. (in state forests there was lack of available state owned land for afforestation). Another success story relates to forest management plans, based on strong inventories (plans included environmental measures).

A respondent to the online survey (NGO representative) mentioned clearing *Rosa rugosa* in the 28 km long distance sector in Curonian spit national park, Naglis nature reserve area (2017-2020) as a success story.

Target 4

Inland fisheries - a government representative noted that during the last decade there has been political will to improve the situation. Many changes were introduced in legislation, especially in inland waters. Commercial fishing in inland waters has been almost stopped with few exceptions for specialized activities in a few lakes and River Nemunas delta. Otherwise - priority is given to hobby fishing, more beneficial from a socio-economic point of view.

Another successful example mentioned is the completion of the Natura 2000 network in Lithuanian part of the Baltic Sea (EU LIFE DENOFLIT project that was implemented 2010-2015⁹⁰⁶). The results of the project contributed to collection of scientific data for identification of biodiversity rich areas and establishment of the Natura 2000 areas in its full functional and ecological extend in marine environment.

According to the national authority (Ministry of Agriculture), in marine fisheries for the last 6 years, Lithuanian fishermen have not utilised their full quota (see Annex 2 for more details). By means of the EMFF 2014-2020 Lithuania has successfully implemented (and is still implementing) measures under the following Union priorities for the sustainable development of fisheries and aquaculture and related activities:

Priority I. Promoting environmentally sustainable, resource-efficient, innovative, competitive and knowledge-based fisheries:

Specific objective “The reduction of the impact of fisheries on the marine environment, including the avoidance and reduction, as far as possible, of unwanted catches”:

Support for the design and implementation of conservation measures (Plan for the recovery of European eel stocks in Lithuania) (Art. 37 EMFF regulation) - 1 project implemented.

Limitation of the impact of fishing on the marine environment and adaptation of fishing to the protection of species (Art. 38 EMFF regulation) - support is granted for 27 projects of the acquisition of the selective gears and / or equipment that protects gear and catches from

⁹⁰⁶ <http://corpi.ku.lt/denoflit/>

mammals and birds protected by Council Directive 92/43/EEC or Directive 2009/147/EC of the European Parliament and of the Council.

Specific objective “The protection and restoration of aquatic biodiversity and ecosystems”:
Restoration of spawning grounds and migration routes of migratory species - 1 project is being implemented.

Priority II. Fostering environmentally sustainable, resource-efficient, innovative, competitive and knowledge-based aquaculture:

Specific objective “The protection and restoration of aquatic biodiversity and the enhancement of ecosystems related to aquaculture and the promotion of resource-efficient aquaculture”:

Productive investments in aquaculture - increasing energy efficiency, renewable energy (Art. 48.1 (k) EMFF regulation) - 1 project is being implemented.

Specific objective “The promotion of aquaculture having a high level of environmental protection, and the promotion of animal health and welfare and of public health and safety”:

Aquaculture providing environmental services (Art. 54.1 (a) (c) EMFF regulation) - 18 projects are implemented.

- aquaculture methods compatible with specific environmental needs and subject to specific management requirements resulting from the designation of NATURA 2000 areas in accordance with Directives 92/43/EEC and 2009/147/EC;
- aquaculture operations which include conservation and improvement of the environment and of biodiversity, and management of the landscape and traditional features of aquaculture zones.

Currently there is also debate to stop commercial fisheries in Curonian lagoon (and to switch to amateur fishing only).

According to Ministry of Agriculture, for the specific objectives “The reduction of the impact of fisheries on the marine environment, including the avoidance and reduction, as far as possible, of unwanted catches” the following target values (for the 2023) are set: 1) output indicator: 9 implemented projects under the measure “Limitation of the impact of fishing on the marine environment and adaptation of fishing to the protection of species” 2) result indicator: change in unwanted catches: -43 tonnes (- 20 %).

Evidence of unsuccessful implementation of focus targets

Target 3b

There have been substantial delays when it comes to Natura 2000 network completion and formulation of site specific conservation objectives. 65% of Lithuanian Natura 2000 sites are forest areas. The best evidence of it is EC infringement procedure against Lithuania as the progress with designation of Natura 2000 sites was too slow (at the time of preparation of this study -January 2021 the infringement case is still open). According to explanation of Ministry of Environment, there were some problems with finding/identifying sites for some species, so the government requested the prolongation of the period to eliminate these insufficiencies.

Furthermore, according to both government, and NGO representatives, there is conflict between private forestry and nature conservation interests, and effective means are still not found. Compensatory mechanisms for restrictions in protected areas (both Natura 2000 payments scheme and national compensation scheme) are judged as ineffective and underestimating the actual losses caused by restrictions. Several attempts to initiate the schemes for buying out the private forests were not implemented due to lack of resources.

Ministry of Environment noted that regarding forest coverage with management plans, situation is good in state forests (100% covered). But not all private forests have management plans. When a forester prepares for logging - they need to prepare management plans. Management plans need to be updated according newest habitats inventories data, but are not always updated, due to lack of time and resources.

All respondents (for target 3b) noted that Lithuania didn't reach its national target for afforestation (35% of whole territory of Lithuania by 2030; and 38% by 2050⁹⁰⁷). There is conflict between competing land uses - agriculture vs. forestry. There are national rules which limit use of productive land for afforestation. Only very poor soils may be afforested on one hand, on the other - less productive lands (slopes, wetlands, sandy areas, etc.) are often highly important biodiversity concentration areas. Afforestation plans are frequently opposed by nature conservation authorities. Therefore country and especially regions where soil is fertile can not reach the afforestation targets. The agricultural subsidy system is hampering afforestation- land users find the direct payments for agricultural activities much more attractive than compensatory payments for afforestation. The substantial amount of money initially reserved for afforestation measures in national Rural Development Programme for 2014-2020 had to be reallocated to other measures since the pace of the use of money was not satisfactory (despite promotional attempts).

According to a researcher, the problems are: 1) lack of efficient implementation mechanism; 2) lack communication between authorities, and with stakeholders; 3) Lack of research/knowledge (how to carry out inventories, protect and monitor. In some NGOs projects, there was lack of emphasis on knowledge. Consulting activity within RDP (for forest matters) is weak/non-existent. Natura 2000/Habitats inventories were done without taking into consideration the existing environmental protection network (methodology - didn't take into account existing network, and didn't take into account stakeholders needs). Many areas inventoried were forests that are economically important (that create conflicts with land owners). The Ministry of Environment is responsible for this. There is lack of research/knowledge - how to mitigate conflict with stakeholders.

According to an NGO representative, quite a few valuable habitats have been degraded by forest cutting, especially during recent years. Lithuania is one of the EU countries where forest destruction is considered a major environmental problem. Forest management plans are prepared for 10 years. If these management plans were prepared prior to the EU species/habitat mapping, they do not contain information about species/habitats of European importance. As well, the designation of Natura 2000 areas (based on species/habitat inventory data) is insufficient. The procedure for the public to participate in preparation of forest management plans is very formal (advertised only in local paper,

⁹⁰⁷ Ministry of Environment of the Republic of Lithuania, 2020.

etc.), and the public often does not know/is not sufficiently informed about possibilities to participate. State institutions have rights to comment on forest management plans only on the basis of current legislation; if the forest is outside Natura 2000 there is no legal way to protect the forest from logging.

The same NGO representative noted that logging has intensified in privately owned forests (since habitat mapping was carried out, and is publicly available). Private forest owners often do not consider valuable habitats. Foresters often try to minimize deadwood (although from a conservation point of view more deadwood would be beneficial). The only allowed practice used for afforestation is planting new forest (natural succession is not allowed), ploughing is used; which is destructive for habitats/landscape.

In the case of pest (beetle) attacks, sanitary cuts are allowed in most of categories of forests, also in Natura 2000 (except strict nature reserves; which constitute less than 1% of all forests).

Some RDP measures (including afforestation) were found harmful/causing adverse effect for biodiversity⁹⁰⁸:

- Activity M8.1 'Afforestation' under M08 'Investments in Forest Area Development and Forest Viability Improvement'. In 2016-2018, 135 ha of grasslands of Community importance and similar habitats were afforested;
- M12 'Payments in Grasslands and Forests Related to Natura 2000 and the Water Framework Directive', up to 10 ha are ploughed annually)

An NGO representative pointed out some practices within RDP - landowners can get fees for Natura 2000 sites, for not cutting mature forest, etc. some compensation is available. When forest owners are using this opportunity, authorities are asking for documentation that the site belongs to Natura 2000 from the regional park direction, and it was period when land owners were forced to sign the paper ("voluntary contract") for protection measures, for period longer than compensation was offered. When implementing EU funded projects, ornithologists not only inventoried existing nests, but also putting up new nests where they decide (not consulting with land/forest owners), this brings serious restrictions for forest owners (for black stork- 12.5 ha strict reserve has to be established, etc). Such "strict micro reserves" create tremendous uncertainty for property rights and are not followed with fair compensation. The nests of rare birds represent an example of faulty environmental consideration that traps private forest owners and the rare/protected birds into a lose-lose situation. The protected zone typically covers several estates, and the affected forest owners face two adverse choices: either admit the registration of the nest simultaneously accepting decline of the economic value of her/his property, or act against their conscience and destroy the nest before it becomes known to the authorities. Knowing that nests are usually discovered when planning final felling and realising the extent of benefits forgone (for a small-scale forest owner; Brukas et al., 2015), it is not surprising that many opt for "shaking out" the nest. Understanding the unreasonableness of the entire system, forest planners and forestry inspectors often turn a blind eye, in some instances even advising the owner to "deal with" the nest. Thus the regulations turn out to work opposite to the intended purpose, prompting nest destruction and serving as an ugly example of the detriment that excessive environmental requirements

⁹⁰⁸ Aplinkos Apsaugos Politikos Centras, 2019. Lietuvos kaimo plėtros 2014-2020 metų programos įtakos gamtinei aplinkai analizė ir aplinkosauginių rodiklių identifikavimas 2016-2018 metais. Galutinė ataskaita

without compensation can bring⁹⁰⁹. There was a case in Aukstadvaris regional park - pests attacked mature spruce trees. Forest owner - had ~20 ha spruce stand, and was not allowed to make a sanitary felling; and to protect the remaining stand. The park director explained, that it was because of some rare grass; but nobody could explain to the owner where it was exactly located, and how to protect it. Furthermore, 10 % of the forest is not used at all (reserved for land restitution; it is long process 10-15 years, land remains unused).

An NGO representative mentioned a specific challenge - activities at national/international level by environment authorities/ NGOs often concentrate on efforts to get project funding and that become a form of business itself. Well financed European projects lack a holistic view how to protect species & biotopes (but often concentrate on campaigns to protect specific single species/habitat). Protection and creating favourable conditions for protect species & biotopes requires deep knowledge of ecosystems and practical experience; and requires involvement of land/forest owners and managers, if one seeks sustainable long term results. But when the real objective becomes to “absorb funds”, then projects very often concentrate on 2 conditions: 1) establish new protected territory, and 2) create new/stricter rules/ to forbid economic activities. This leads to insufficient results. Foresters, land owners often are not involved (not in a formal way), just authorities and NGOs developing/presenting project.

NGO representative also expressed concern, that the national methodology [Manual for Inventory of natural habitats of EC importance⁹¹⁰] developed by projects team for selection of Sites of Community importance (SCIs) is not corresponding to [Interpretation Manual of European Union Habitats](#) (under the Habitats Directive). They have experienced that some habitats do not exist in places where they have been identified, for some sites, there are doubts, that the selection of key habitat site was correct / corresponds to criteria set by Interpretation Manual of EU Habitats. The methodology was criticised by scientific community (see articles^{911 912} of prof. Stasys Karazija, Member of Academy of Science of Lithuania). It appears that to some extent national methodology was prepared to make much easier conditions for implementation of big-scale projects, i.e. to “absorb funds”. Note: during 2009-2014 via big scale environmental projects the identification and inventory of species and habitats for development of Natura 2000 network took place (total funding ~15 mln.LTL). Some 60,000 sites were inventoried in forest (in a large area ~270,000 ha, of which which 210,000 ha, - were identified as high priority habitats). [EU structural fund 2007-2013 projects: **Pasirengimas EB svarbos natūralių buveinių inventorizavimui: metodinės bazės sukūrimas/ Preparation for the inventory of natural habitats of EC importance: development of a methodological framework** ([VP3-1.4-AM-02-V-01-004](#) 449 142,72 EUR value) and **EB svarbos natūralių buveinių inventorizavimas, palankios apsaugos būklės kriterijų nustatymas ir monitoringo sistemos sukūrimas/ Inventory of natural habitats of EC importance,**

⁹⁰⁹ Brukas, V., Stanislavaitis, A., Kavaliauskas, M., Gaižutis, A., 2018. Protecting or destructing? Local perceptions of environmental consideration in Lithuanian forestry. //Land Use Policy; ISSN: 0264-8377
<<http://dx.doi.org/10.1016/j.landusepol.2016.05.006>>

⁹¹⁰ Rašomavičius R. (red.), 2012: EB svarbos natūralių buveinių inventorizavimo vadovas - Vilnius. ISBN 978-9986-443-61-2

⁹¹¹ Karazija, S. Ar paversime Lietuvos miskus taiga?

[http://www.lma.lt/uploads/Pranesimai%20naujienuoms/Karazija_Ar%20paversime%20Lietuvos%20mi%C5%A1kus%20taiga%20\(2\).pdf](http://www.lma.lt/uploads/Pranesimai%20naujienuoms/Karazija_Ar%20paversime%20Lietuvos%20mi%C5%A1kus%20taiga%20(2).pdf)

⁹¹² Karazija, S. Is kur Lietuvoje tiek daug ES buveiniu?

<https://www.forestgen.mi.lt/content/Publikacijos/Karazija%202019%20%C5%A1%20kur%20Lietuvoje%20tiek%20daug%20buveini%C5%B3%20MG%202019%203%2010-13.pdf>

establishment of favorable conservation status criteria and establishment of a monitoring system
([VP3-1.4-AM-02-V-01-009](#), 3 520 331,32 EUR value).

When checking inventoried sites, a significant number of inaccuracies were identified. In particular, it was decided to include into habitat 9010* Western Taiga vast areas (100,000 ha) of premature and mature stands in commercial forest, which was and is managed in a “business as usual” way. A large part of these areas were reforested several decades ago, thinnings and pre- commercial thinnings, and commercial selective fellings were taking place in most part of these forests. So, this habitat is NOT corresponding to Habitats directive I Annex description⁹¹³, as these areas are not natural old forests nor young forest stages naturally developing after fire. The Ministry of Environment of Lithuania officials recognised that themselves (see Chapter 1.4. Identification and delineation of potential SCIs and SPAs [of report](#)): “Lithuania started with identification of sites where concentration of the resource was the highest. In few cases the work was interrupted due to the need to update site selection criteria, e. g. with additional criterion on “saturation” of the resource per area unit. Since time for site selection exercise was very limited, decisions were often taken on best available data despite the fact that data on actual distribution was incomplete for many species and habitats. The role of sectoral NGOs and regional administrations of protected areas was very strong in this process.” As a result, 2/3 of selected SCIs were inventoried in commercial forests, but not in already existing national protected areas (national parks, strict nature reserves, nature reserves, etc.)

An NGO representative stressed that recently it was recognized that national protected territories in Lithuania were established not for protection of environment values as the first priority (but established as complex territories to protect landscape, cultural etc. values, and only partly correspond to definition of protected territories in other EU countries). So, as a result, now 2/3 of protected species and habitats are concentrated not in areas of national protected territories (i.e. national and regional parks, reserves etc.), but in commercially used forests. So, by estimate of forest academicians, if recent drastic plans will be implemented at full scale, about 45 % of forests in Lithuania will be with the status of restrictive management or forbidden of forestry activities at all (now 33 % of forests). Scientifically based recommendations for each habitat type and its proper management are not available. Nevertheless, the Ministry of Environment wants to establish protection status of these sites by simply forbidding (or strictly limiting) forestry activities in main part of identified sites with very minor or no compensation. Authorities do not use contracts between public authorities and landowners - a tool widely recommended by the Commission for the implementation of nature conservation policy.

An NGO representative noted also that all measures are designed in a command-and -control way (not agreeing with forest owners, and recommendations are lacking). The most popular method of management by the authorities involves restrictions/forbidding activities. This is a big problem (for forest owners) - authorities can not tell what to do (not providing advice). This costs quite a lot to land owners/forest owners. If limitations are set on property, the price of land goes down. Nature management measures are implemented using expensive project money, in an unsustainable way. Land and forest owners do not get proper compensation for restricted activities. NGOs tend to focus on projects and opportunities, but often lack and holistic view and do not address the situation as a whole.

A respondent to the online survey (NGO representative) pointed out that naturally afforested abandoned land areas are forced by national law to remove bushes and trees; to keep the land in a

⁹¹³ <https://eunis.eea.europa.eu/habitats/10176>

sound agricultural condition. The only compensational mechanism that exist in a country is related to the change of clear felling silvicultural measure into selective fellings, applied in private forests. The top to bottom approach and the pressure from the Ministry of Environment on imposing forest management restrictions has been increasing almost every year. However, land and forest owners are not very happy with initiatives, since there is no compensation mechanism developed. It breaches the image of such initiatives and "Natura 2000" and EU Biodiversity Strategy to an extent that owners are not willing to take any protective measures. The system of compensations for land and forests owners in relation to volunteer environmental restrictions is not working, due to unfair gain/losses ratio (unsuccessful). In 2019 Lithuania undertook an extensive review of the list of endangered species (so called Red book) for a last decade. It has been concluded that compared to the previous edition of the list, the amount of species has been smaller, diminishing from 764 to 566 species. In 2019 the Parliament has adopted a Forest Law where a maximum area of 1500 ha of private forest holding is set. Another negative: during the last 2-3 years the Ministry of Environment has initiated an extensive increase of protected areas in private forests (200,000 ha transferring from commercial forests into nature protection forests) without taking the formal steps - informing the owners, negotiating the environmental restrictions and setting a budget for compensations. The existing EU financial period of 2014-2020 offers a compensational mechanism for a forest owner that has a site in "Natura 2000" territories who wants to get a 272 euro/ha annual compensation for a change of final felling measure into a selective felling⁹¹⁴. After five years pass, the same owner could apply for an application to invest in a small forest machinery on the same site⁹¹⁵. The bottom up approach when reaching out to land and forest owners and a fair possibility to get a financial support for saving nature would likely be attractive (for private land/forest owners).

Target 4

A national government representative noted that overall, as the Baltic Sea suffered significant reduction of fish stocks during last decade, the implementation of target 4 can not be considered a success story. There are a series of reasons for the decline of fish stocks - environmental pollution is among the most serious. Still, commercial fishing is also contributing to the poor status of some fish species of Community concern, mainly due to high unintentional by-catch rates. Another example of unsuccessful nature conservation efforts is the commercial fishing regulation situation in Curonian lagoon co-managed by Lithuania (25 % of all water body area) and Russian Federation (75 % of all water body area). Some fish species, especially migrating ones, suffer from unfavourable commercial fishing regulation there, but any improvements need to be coordinated on a bilateral basis. The situation is aggravated by poor credibility of data about yields and a lack of transparency in decision making processes in the authorities of the Russian Federation.

A national government representative mentioned that decommissioning dams in rivers has so far not been very efficiently implemented. Only 2 or 3 dams in were recently decommissioned in Lithuania. There is competition between hydroenergy production & nature conservation. Some dams even not used for energy production cannot be removed because of the opposition of local communities. The Ministry of Environment launched a special study on the issue, and is looking for good experience in the countries similar to Lithuania (example of Estonia). The study will include preparation of a priority list of dams to be removed, designing future visions for local developments and stimulating discussions with

⁹¹⁴ <https://www.nma.lt/index.php/parama/lietuvos-kaimo-pletros-20142020-m-programa/priemoniu-sarasas/su-natura-2000-ir-vandens-pagrindu-direktyva-susijusios-ismokos/8680>

⁹¹⁵ <https://www.nma.lt/index.php/naujienos/daugiau-galimybiu-isigyti-misko-technikos/6896>

national and local stakeholders, to convince them. In total in Lithuania there are 1300 dams, ~ 400 are used for energy production. All dams which are not satisfying socio-economic criteria, need to be removed starting from lower parts of the rivers and going (mostly last dams downstream) upstream. National legislation will also be changed, introducing new economic measures for stimulating the changes in this sector.

An NGO representative noted that trawling (in the sea) is causing destruction of habitats. The issue of by-catch is not solved (10% of wintering bird population ends up as a by-catch in nets). Round goby (invasive species) appeared some years ago; but is not commercially fished in Lithuanian waters. Also more and more injured seals are found. There is overfishing in Curonian lagoon (illegal fishing is part of problem; legal fishermen are not reporting the whole catch). Poaching of salmon in internal waters is a problem (although, situation is improving -NGOs are helping inspectors to patrol/ to catch poachers) Hydropower dams are causing destruction of the ecosystem and hampering fish migration. Dams need to be removed (so far very little progress).

Key factors which have hindered the achievement of objectives

Evidence relating to Target 3b

- Insufficient legislative and implementation framework;
- The lack of interaction/cooperation between ministries, a lack of interaction with stakeholders (land & forest owners), and lack of communication from state institutions;
- Insufficient knowledge and awareness (especially amongst private forest owners) of habitats/species of European importance, and how to protect them.

Key gaps in effectiveness

- The National Action Plan does not include the EU Biodiversity Strategy to 2020 objective “To increase the involvement of the agricultural and forestry sector in order to preserve and improve Biodiversity”(Target 3) and related actions; but agriculture and forestry sector is very important in terms of biodiversity and landscape protection;
- Insufficient institutional framework to make BD Strategy to work well (lack of interaction between ministries, an lack of interaction with stakeholders -land & forest owners);
- The Natura 2000 network is not sufficiently developed (therefore, EC in May 2018 started infringement procedure against Lithuania; and the case is still open);
- In 2019 Lithuania has been undergoing an extensive review of the list of endangered species (Red book) for a last decade. Compared to the previous edition of the list, the amount of species diminished considerably (from 764 to 566 species);
- The process of preparation of territorial planning documents (for categorisation of forests) is slow and this has negative consequences on nature conservation policy implementation;
- There is conflict between commercial forestry activities and the management of land for nature protection. Forest owners’ perceptions of biodiversity/conservation measures vary depending on the extent of restrictions they face. Severe restrictions without appropriate compensation leads to conflict (that involve also destruction of rare birds nests);
- Level of annual compensation (272 euro/ha) for restrictions in NATURA 2000 forests is considered too low/insufficient to compensate losses incurred by forest owners;
- Only 1/3 of private forests have management plans;
- Forest management plans are made for 10 years. National biodiversity inventory (mapping of species and habitats of European importance) was completed in 2015. If forest management

plans were made prior to that - the information (on European habitats and species) is not incorporated. Thus, biodiversity integration into forestry (especially outside of the protected areas network) remains an issue;

Forest felling in recent years has increased, in particular in areas where according to national inventory species and habitats of European importance were found, but the sites are not within Natura 2000 (not protected by law);

The “Lithuanian Agriculture Advisory Service” is supposed to provide advice for farmers and forest owners. Nevertheless, this service in many cases is not working efficiently, and within another study it was concluded that “In fact, there is no country-wide advisory service for forest owners” (G. Jasinevicius, 2017);

There is lack of research/knowledge (how to carry out inventories, protect and monitor valuable species/habitats);

The effectiveness among the forestry measures implemented within RDP varies. Some afforestation practices (ploughing the ground before planting new forest, etc.) are harmful/damaging for biodiversity;

Afforestation measure in Lithuania have been geographically unbalanced; and depend on soil quality (in areas of better quality soil, agriculture has priority). In some areas, there is not enough land for afforestation, therefore national target could not be reached;

There are no specific indicators within RDP to monitor biodiversity in forests (only CBI is used).

More specific indicators would be beneficial (for instance, common forest birds index; and also other species than birds - insects, butterflies, etc.);

NGO and socio-economic actor representatives point out the need for greater regard for local realities and stakeholder involvement (for example, during the last 2-3 years the Ministry of Environment has initiated an extensive increase of protected areas in private forests, transferring 200,000 ha from commercial forests into nature protection forests without taking the formal steps - informing the owners, negotiating the environmental restrictions and setting a budget for compensations);

In spite of policies and measures, in recent years, commercial fish populations have decreased both in the Curonian Lagoon and Baltic Sea (mainly as a result of water pollution, changes in food abundance and invasive species);

Unreported catching takes place in Curonian lagoon (both on Lithuanian, and Russian part of the lagoon);

10% of the wintering bird population ends up as by-catch in nets.

5.2.2 Efficiency

Key evidence of benefits

Evidence relating to Target 3b

A government representative pointed out that assessment of socio-economic benefits of NATURA 2000 was carried out (as a part of LIFE IP NATURALIT project), and results are published⁹¹⁶. Total benefits provided by Natura 2000 network were estimated 193 702 708 EUR (this estimate comprise value of goods and services provided in Natura 2000 areas, such as use value of berries and mushrooms, use value of fish from amateur fishing, game from amateur hunting, use value of quality drinking water, use value of visitors, etc.)

⁹¹⁶ https://naturalit.lt/wp-content/uploads/2020/10/BGI_VSTT_Natura-2000_Galutine-vertinimo-ataskaita_20200916-su-ekspertu-parasais.pdf

Total costs of Natura 2000 network were estimated as well; and include State Protected Area Service costs for safeguarding/monitoring/management/maintenance of Natura 2000 areas (10 106 237 10,47 EUR) and lost income of landowners due to Natura 2000 related restrictions of use 78 585 504 EUR); in total 88 691 741 EUR. The total estimated benefit (excluding costs) of Lithuanian Natura 2000 network thus was 105 010 967 EUR (2019).

This study experienced some critics from the forestry sector, on the grounds that the study was not very comprehensive and the methodology was fragmented. This was the very first national-scale assessment (of this kind in Lithuania). Sceptics argue that ecosystems provide the same benefits outside the Natura 2000 network (i.e. added value of Natura 2000 conservation regime is questionable). Interesting is that most substantial benefits are immaterial (non-use values). Results of the study: 1) project created methodology that can further on be used for state institutions themselves for data collection and evaluation of changes in benefits 2) the evaluation of economic values of Natura 2000 benefits itself, for situation as it is now - in 2020. Next evaluation will be carried out after 7 years.

A researcher expressed doubts regarding the findings of NATURALIT study, on account of inadequacies in monitoring, meaning the assessment is vague. It was argued that the methodology does not seem sufficient (leading to nature value - 20-30% higher than commercial value; value of non-wood forest products - overestimated). Natura 2000 provides additional measures, but it can not be taken for granted that the value will be higher than outside Natura 2000. For example, in the NATURALIT study, the estimated price of mushrooms and berries was set at 0 (before the estimate, but it was unlikely so; besides, forests that are not Natura 2000 - also provide these values). Economic losses due to restricted use of forest were not calculated. The compensation mechanism introduced conflicts. In Scandinavia, the forest owner chooses whether to implement measures or not. In Lithuania, environmental protection measures are seen as a threat (by forests owners; since there is no appropriate compensation; therefore forest owners do not trust the system).

An NGO representative expressed the view that LIFE projects (constituting approx. 20% of all biodiversity financing in Lithuania) demonstrate high cost-efficiency (while the largest part ~ 70% comes from RDP, and 10% - other sources; and the cost efficiency of this funding is unclear).

Key evidence of costs

Evidence relating to Target 3b

According to the Ministry of Environment, the most comprehensive review of costs related to Strategy implementation for the period 2014-2020 was made in 2020 while preparing the national Prioritised Action Framework document (PAF) according the Art 8 of the Habitats Directive. The document indicates the total sum of allocations for Natura 2000 network needs for the 7 years period being at MEUR 200,5. (refer to the draft PAF document⁹¹⁷). This sum has to be analysed with caution since the methodology for attributing allocations being related to Natura 2000 needs are very flexible, especially when it comes to expenditures from European Agricultural Fund for Rural Development. Calculations of expenditures from other funds (e.g. Life) have a much more direct relationship. Another source of information on the biodiversity financing needs is the National Plan for Landscape and Biological Diversity Conservation for 2014-2020. In this plan there were rough estimations of allocations needed

⁹¹⁷https://am.lrv.lt/uploads/am/documents/files/saugom_teritorijos_kra%C5%A1tov/natura_2000/PAF-2019-03-27.pdf

for much broader range of actions made at the time of the preparation of the plan (2014). The total needs for 7 years are estimated at MEUR 124,3.

Regarding Target 3B actions there is understanding that actions have not been adequately funded. For example, half of Lithuanian forests are private. There are difficulties to convince private forest owners to implement conservation measures in Natura 2000 areas. Maximum levels for Natura 2000 payments are set in the RDP and cannot be exceeded. The Ministry has to look for other national funding sources to minimize conflict between nature conservation interests and private forest owners' economic interests. The Ministry of Environment started to formulate ideas about how to accumulate financial resources, to buy out private forests. Some new ideas are discussed - regarding changing of currently applied forestry sector taxation model to the more environmentally oriented one. In Lithuania, all operators logging forest commercially, have to pay 5% of their income to the state budget. This is much criticized by forestry sector. The idea of tax reform is that tax will be higher for those who are disturbing forest ecosystem on a greater scale, and reduced/not applied to those who are logging with more care for the ecosystem.

In parallel the Ministry of Environment will propose legislative changes to facilitate financing of buying out private forests. LIFE funding can be used too, but so far was used to very small scale. Lithuania would wish to use land purchase as a conflict management instrument on broader/more systematic scale. The Finnish "Metso programme" is a very good example how to approach issue of nature conservation and private forest owners.

A researcher stated in consultations that only 1.5 % of RDP funding (in Lithuania) was devoted to environmental measures.

According to a respondent to the online questionnaire (NGO representative) the report, conducted by State Forest Service, State Service for Protected Areas and public forest management company "State Forestry" has identified that in order to establish the network on newly protected areas of EU habitat importance, there will be losses up to 84.8 million EUR annually (without any sources of compensation).

Evidence of socioeconomic impacts

Evidence relating to Target 3b

The NGO representative pointed out that within the NATURALIT study, while evaluating the benefits of Natura 2000, the specific value added related to NATURA 2000 status was not evaluated (compared with the benefits provided by ordinary forest areas, which do not have Natura 2000 status). The study found that the total annual value of the socio-economic benefits of Natura 2000 areas (total area 964,900 ha, of which 510,000 hectares of forests) is approximately EUR 105,0 million. The assessment methodology and assumptions, however, was severely criticized by forest sector and NGO representatives⁹¹⁸.

Key gaps efficiency

During planning for 2014-2020 projects to be financed by EU funds, economic (cost-benefit) the analysis was carried out for only a relatively small number of these projects. The analysis was

⁹¹⁸ Mizaras, S., 2000. Comments on the study of socio-economic benefits of Natura 2000 network (in Lithuanian) <https://forest.lt/go.php/lit/-dr.HP-St.Mizaras-Komentarai-del-Natura-2000-tinklo-socio-ekonomines-naudos-vertinimo-studijos/6686>)

carried out using standard methodology for financial and economic analysis, but no assessment was carried out for improvement / deterioration of ecosystem services;

Due to low level of compensations (within RDP), there are difficulties to convince private forest owners to implement conservation measures in Natura 2000 areas. Other practices (such as, buying land for conservation) are still not developed in Lithuania;

Very little evidence is available regarding the value of Natura 2000 - only the study within NATURALIT, conducted late 2020, but independent researchers and NGOs representing landowners argue that results are not credible/convincing enough;

Scientific evaluations of most measures undertaken in the Baltic Sea are generally weak or lacking;

The largest part ~ 70% of all funding for nature conservation/biodiversity comes from the RDP (another 20% - from LIFE, and 10 % of other sources). Exact effects/extent of RDP forestry measures on biodiversity have not been assessed.

5.2.3 Coherence

Coherence with EU Sectoral Policies

Most of respondents to the survey and throughout consultations pointed out issues of coherence (in particular, with CAP, EU Forestry policy, and EU energy policy package).

The national government (Ministry of Environment) representative explained that there is conflict with the CAP - conflict between competing land use types (agriculture vs afforestation). One more point regarding lack of coherence between CAP and nature conservation policy is the level of compensations (Natura 2000 payments) for restricted use of forests (timber) for private forest owners which is far too low to be effective in boreal region situations of “no management” scenarios for forests. Another conflict relates to wind energy, hydropower energy, and renewable energy in general. This includes conflict between migrating species interests and wind farms. A new emerging policy conflict also relates to solar energy development, which poses risks for habitats and species - there are many requests to build large solar energy parks countrywide including in Natura 2000 areas. Normally there is little bureaucracy for solar energy development, but not in the case in Natura 2000 areas, since appropriate impact assessment is required. But in general, developers see Natura 2000 as an obstacle to renewable energy development (potential conflict).

A researcher had a view that biodiversity protection is very much conflicting with economic development (for instance, bioeconomy). There is a need to protect - it means society is not getting natural resources (such as, wood) and they are imported (often without knowledge of their sustainability). It is against the policy of bioeconomy (which promotes use of local resources, green jobs, reduction of GHG emissions, etc.) If conservation has priority - bioeconomy can not be developed (fuel, buildings, etc.) and GHG reduced. Biodiversity will be ultimately threatened by climate change, etc. It is therefore difficult to find win-win solutions.

According to an NGO representative, overall, there are problems with coherence/different policies going in different directions. Properly sustained/managed forest is a resource. Therefore the Biodiversity Strategy, limits use of resources. In the EU there is good control, and sustainable managed forests for decades (but when importing wood from other countries - colonial policy is applied). Sustainable forest management is a basic principle, it should be coherent. Even if there is the subsidiarity principle in forestry - in energy, climate, circular economy policies there are EU-wide overarching policies (there is a need to coordinate all policies in one, reflecting needs of society).

There is complexity of management - areas of forest are to be used in a multifunctional way; and it can be challenging to take a holistic view.

The same respondent pointed out a lack of coherence between the EU biodiversity strategy and EU climate policy, demonstrated as follows:

Example 1: EU biodiversity policy calls for old trees / forests for maximum protection of biodiversity - EU climate policy expects maximum CO₂ storage capacity, which stagnates or decreases in old trees / forests

Example 2: EU biodiversity policy calls for the expansion of protected areas (and consequently excluding forests from economic use). This will lead to less wood availability from local forests and correspondingly less wood residues from the processing industry for renewable energy from wood. On the other hand, EU climate policy calls for an increase in alternative renewable forms of energy. Along with wind, water and sun, wood is an important pillar in this sustainable energy mix.

Example 3: EU biodiversity strategy calls for reforestation to focus on native tree species, but these are in some cases less climate-tolerant than immigrant tree species that have been used in the EU for several decades.

The representative from the Ministry of Agriculture noted that BD Strategy 2020 is in line and coherent with CFP and Marine Strategy Framework Directive. The CFP was designed to ensure that fishing and aquaculture activities contribute to long-term environmental sustainability and to ensure coherence with the fisheries targets.

Coherence with international biodiversity commitments

No specific comments (as Lithuania is not very active in protection of international biodiversity, respondents could not name/ identify any specific coherence problems between Strategy's objectives and CBD /Aichi targets, SDGs or UNFCCC).

Key gaps coherence

There is conflict between BDS 2020 related priorities with other CAP measures - conflict between competing land use types (agriculture vs afforestation); and conflict with EU Energy policy package (needs for land for wind farms, and solar parks); developers see NATURA 2000 as an obstacle;

Conservation objectives restrict/limit economic use of forest for fuel, and development of bioeconomy (wood as construction and/or raw material), thus contradicting other EU policies (promoting biofuels, and use of local resources).

5.2.4 Relevance

Relevance of Target 3b

According to a governmental (Ministry of Environment) official, the target is absolutely relevant. Last decade people were in general passive about nature conservation and believed economic development must be prioritized in Lithuania, so biodiversity needed to be strongly advocated. Arguments from European and global political agenda for biodiversity conservation helped very much. The general opinion started to change in the second part of the decade, e.g. new movements and societal initiatives

(some very active) for forest conservation (“Gyvas miškas”, “Sajūdis už Lietuvos miškus”) or for conservation of migrating salmonid fishes (“Lašišos dienoraštis”) have been established during last 2-3 years. The spectrum of Lithuanian NGOs has significantly broadened. European legislation as well as strategies become much more publicly disputed, while the societal request for changes from the political parties become much more visible, especially for changes of national Forestry strategy. It is believed that European Biodiversity Strategy and public dispute on recent biodiversity crisis had the most impact on these changes.

An NGO representative noted that BD Strategy to 2020 was too generic. The nature of the EU biodiversity strategy as a single issue driven policy instrument already is contradictory with other (sectoral) policies. The EU biodiversity strategy calls for maximization (in particular the protection of biodiversity) in the implementation of its goals and is not well integrated with other policies. As a result, there is potential for conflict with other policies. Besides, with a top down approach, it's difficult to ensure an effective approach. Many ecosystems rely on economic activities. JRC published - Biodiversity in Europe Mapping and Assessment of Ecosystems and their Services report (MAES) -it is misleading when they stated (and published in NATURE magazine an article “Abrupt increase in harvested forest area over Europe after 2015”) that huge forest cover loss occurred after 2015 in Europe. But that conclusion was made when using not suitable methodology and data unsuited for time-series analysis (that was stated by product developers of the Global Forest Change themselves). No reporting information (from forest management planning, etc) was used. JRC did not consult/coordinate with Member States - to find what could be reasons of unexpected findings and disseminate their conclusions to policy makers and public. Such misleading information plays a very negative role, creating publicity that EU forests are overused and not managed in sustainable way.

According to another government official (Ministry of Agriculture), BDS is relevant to help to tackle regional and national fishery issues (decrease of fish stocks in the Baltic Sea and internal waters; invasive alien species; nutrient overload; negative influence of dams).

Relevance to stakeholder needs

According to government representative, it depends on the type of stakeholder. For some, BD Strategy in 2011 was too ambitious (e.g. for associations of private forest owners). Traditional nature conservation NGOs often expressed criticism on national cautious approaches towards agriculture and forestry in the country and lack of internal willingness to change in these sectors. Society at large - people now think and speak about biodiversity much more often and request initiation of policy changes from decision makers. People do not agree with usual commercial practices in forests/consider biodiversity (also in forestry). Possible reasons for the change of societal attitude towards nature conservation in Lithuania might be attributed to the results of awareness-raising work of broad network of protected areas administrations (37 units across the country). All PA administrations run visitor centres and conduct nature educational programmes, for schoolchildren, families, etc. During the last decade thousands of citizens have heard from professionals about the biodiversity crisis and its importance for human well-being. Attitude in general has changed (of general public), for the better.

A researcher pointed out that afforestation is very relevant (and it is in many strategic documents); and forest management plans are relevant, too. There is additional an plus: increase the resilience of forest against fires (prevention& protections) - State forest service is implementing monitoring system to protect all forest, also private forests (against fires).

Relevance of EU Biodiversity Strategy to MS biodiversity needs

NGO representative stated that Strategy was very relevant, but implementation is lagging behind. There was lack of systematic approach /thinking within preparation of national Biodiversity and Landscape action plan; and setting the priorities.

A researcher pointed out that conflict of BDS 2020 priorities with forest owners is not a good thing, as it influences also payment of taxes (still a command & control system).

Key gaps Relevance

The current SCI network is incomplete for some habitat types and species. This was pointed out also by the EC (infringement case, initiated in 2018, not closed yet, see also Section 2.1.1.); There is lack of systematic (needs driven) approach within National Biodiversity and Landscape action plan; the plan was prepared in response to EU policies;
Practical implementation of EU BDS 2020 was lagging behind /weak point;
Mismatch between the interests/needs of the private forest owners and nature conservation goals /measures within RDP. As a consequence, the forestry sector was reluctant to change practices.

5.2.5 EU added-value

Evidence of additional benefits compared to MS action

The national government representative (Ministry of Environment) expressed the view that progress would not be so visible without the EU strategy. One important initiative resulting from the European Strategy has been the mapping and assessment of ecosystems and their services (MAES) and its integration into decision making. There was little probability that this kind of initiative would take place without the European Biodiversity Strategy. Now this concept is making its way in various national legislative proposals, expectations related to MAES policy initiative are high.

Another government official (Ministry of Agriculture) pointed out that several projects realized with the support of EMFF led to biodiversity improvements:

Example 1: Project supported under the EMFF measure “Design and implementation of conservation measures” - Support for the implementation of the Plan for the recovery of European eel stocks in Lithuania resulted in improvement of the state of eel stocks;

Example 2: Project supported under the EMFF measure “Restoration of spawning grounds and migration routes of migratory species” - Installation and modernization of fish passes in Tauragė district let open the routes for the migratory species to their spawning grounds.

Example 3: Projects supported under EMFF measure “Aquaculture providing environmental services” - Aquaculture farms received support for the implementation of environmental management plans providing 20 percent lowering of water levels in ponds, managing of islands in ponds, mowing down or not mowing in order to relocate birds, amphibians, reptiles and other animals for biodiversity sake.

An NGO representative expressed the view that the EU BDS has definitely provided added value, by setting out a framework that the authorities have to work with. The strategy has emphasised that actions and resources should not only concentrate on species, but on whole ecosystems. Clearcuts,

burned out areas, etc. are needed (as different species need different conditions). More scientifically based/ practical evidence is needed for establishing Natura 2000 areas. The previous target (3b) was too narrow, not taking into account what standards/practices are in the field already. If there are no active nature management activities - protected species can disappear.

Example: it is not legally allowed to make clearcuts in national parks - in Dzūkija national park, when occasional fellings are conducted to manage commercial pine forest stands in park territory - very aggressive quick growing grass (*Calamagrostis/landrunas*, 2 m high) appeared when more light reached the forest floor, chemicals can't be used in protected territories. Now vast areas are covered by grass - and the forest cannot regenerate.

Evidence of change in MS ambition and/or commitments due to Biodiversity Strategy

A national government representative expressed the view that progress in Lithuania (especially with regard to IAS, agri-environmental schemes) would not be so good without the EU strategy.

An NGO representative pointed out that the Lithuanian national Strategy was prepared, based on EU BDS 2020 (otherwise, there was lack of national ambition).

A researcher expressed the view that BDS 2020 played a positive role (because there was support). BDS helped to develop good examples and learn from the process. Implementation was criticized, but it is under development/improving.

Evidence of change in sectoral ambition due to Biodiversity Strategy

A national government (Ministry of Environment) representative expressed the view that sectoral ambitions had been raised by the Strategy, especially regarding commercial fishing (in inland waters). In forestry there is ongoing debate on the need to change legislation (for last 2-3 years). Public request to change legislation is high. The newly appointed national Government used some wordings of goals from new European Strategy on Biodiversity to 2030 in its political programme, which is promising and reflects societal demand for changes, e.g. committed to achieve national political agreement on forests, to increase the share of protected areas by 2% and review national legislation on protected areas making it more conservation results oriented.

An NGO representative was more critical and expressed the view that the success of EU BDS 2020 was limited, especially where a cross-sectoral approach is required (agriculture/forestry/fisheries).

Key gaps EU added-value

- The success of EU BDS 2020 was limited, especially where cross-sectoral approach was required (especially in agriculture/forestry/fisheries);
- Efforts and resources of BD Strategy should not only concentrate on species and habitats, but on ecosystems as a whole;
- More scientifically based/ practical evidence is needed for establishing Natura 2000 areas.

5.3 Conclusions

Overall, the progress with implementation of BDS 2020 targets 3B and 4 in Lithuania was mixed; and progress with both targets (3B and 4) insufficient. The review of Red list species, undertaken in 2019; shows that compared to the previous edition of the list, the number of species diminished considerably (from 764 to 566 species). The reasoning for the change (decline in number of national red-listed species) is mixed. The majority of the changes are attributed to changes in methodology. In 2019 evaluation was undertaken according to IUCN red-listing methodology (while previous assessments were done using national methodology, but international comparison of the status was hardly possible, furthermore, some of previous evaluation criteria were considered too subjective). For some of the protected species the improvements in their conservation status have taken place and it was the reason for deleting these species from the national list (e.g. Crane, Fishotter) after evaluation. Other species are considered extinct in the country and therefore cannot be actually preserved (38 species). In addition, there was a lack of data on the status of certain species, therefore scientists proposed to study them better and, after evaluation of the results, to propose their inclusion or non-inclusion in the list of protected species (in the future) On other had, a few dozens of new species are now included into national Red List, after evaluation according to IUCN methodology.

Also interviewees assessed the overall progress as moderate (acceptable) to bad; depending on the type of respondent (public authorities were more positive, while NGO representatives were more critical).

There has been considerable progress in several areas during the last decade. Overall, the presence of EU BDS 2020 brought more attention to biodiversity; this likely contributed to a number of positive changes; and there was a unanimous view from all respondents that progress in Lithuania alone would not be so good without the EU strategy. A national inventory of habitats and species of European importance is now completed, and serves as a basis for monitoring. The assessment of socio-economic benefits of Lithuanian Natura 2000 network (the very first assessment of this kind) was made in 2019; and shows that there are economic arguments for nature conservation -the total estimated benefit (excluding costs) was 105 010 967 EUR per annum. Biodiversity related measures were included in Lithuanian RDP, as well as EMFF; and support to various activities and projects is available (through RDP, EMFF, LIFE programme; in particular, support through LIFE IP NATURALIT, aimed at optimizing the management of Natura 2000 network in Lithuania is considered a great asset). The forestry measures in RDP during both programming periods (2007-2013 and 2014-2020) were focussed on afforestation; compensations for limitations of use in Natura 2000 forests; and there is also extension of application of Natura 2000 payments in forests beyond the boundaries of Natura 2000 network (in RDP 2014-2020)

Through the EMFF programme in Lithuania a number of projects have been realised, aiming at the reduction of the impact of fisheries on the marine environment, including the avoidance and reduction of unwanted catches; and setting target value for change in unwanted catches (-43 tonnes (- 20 %), by 2023).

There has been nation-wide stakeholder discussion on changes of forestry legislation; and major changes are expected to take place mid-2021; introducing economic incentives for sustainable forest management. At the end of January 2021, the new Minister of Environment, Mr. Simonas Gentvilas instructed the State Forest Enterprise not to carry out the forest fellings in Group III forests, until the entry into force of one of the main priorities of the current government, the National Forest

Agreement⁹¹⁹ (in the forests of Group I and Group II, clearcuts already are not allowed). The National Forest Agreement will be discussed with the public at the highest political level. The Ministry of Environment has already provided for the procedural arrangements, and will start consultations with the social partners in February 2021. The stakeholder agreement was reached on the new FSC National Forest Stewardship Standard of Lithuania, which will be used for forestry certification scheme (run by FSC), and entered in force as of January 1, 2021. 100 % of state owned forests are already FSC certified and regularly audited. All state forests and 1/3 of private forests have management plans; and forest management plan is compulsory when preparing for forest felling or applying for support from RDP.

The Natura 2000 network in the Lithuanian part of the Baltic Sea is completed. The designation of marine Natura 2000 sites is helpful for restricting some fishing activities thereby helping depleted fish stocks to recover (this effect, however, is very difficult to quantify, as most Natura 2000 sites are multi-use sites, rather than strict no-take zones). Commercial fishing in inland waters has been almost stopped with few exceptions; priority is given to hobby fishing. There is ongoing debate to stop commercial fisheries in Curonian lagoon (and to switch to amateur fishing only).

On other hand, there still are challenges. The development trends in the forest sector are favourable from the nature conservation point of view, and the risk of short-sighted thinking and acting is high. The legislation and current management system has only partly been adapted to the new conditions (private ownership of forests), and there is lack of knowledge and awareness of nature conservation among people. Next to that, the progress with protection of habitats and species of EU importance, and designation of terrestrial Natura 2000 sites (including forest areas) in Lithuania has been too slow/insufficient (the infringement case against Lithuania launched by the Commission in 2018 at the time of preparation of this report -January 2021- is still open). The national biodiversity inventory (mapping of species and habitats of European importance) was completed in 2015; and the information (on European habitats and species) is not incorporated in forest management plans prepared prior to the inventory. Thus, biodiversity integration into forestry (especially outside of the protected areas network) remains an issue. The lack of financial resources for the surveillance of species and habitats and for activities related to habitat restoration and maintenance remains a key difficulty in carrying out the required nature management activities in the Natura 2000 network.

Progress with the national target for afforestation is slower than expected, due to lack of available land. Problems hindering afforestation are:

- Land (forest) reform is not completed (part of land still reserved for restitution; and not managed at all);
- national RDP stipulates that agricultural land of high productivity should be sustained for farming;
- Direct payments for agricultural land in less favoured areas received by farmers are higher than compensation for lost income (unfavourable for afforestation).

There is conflict between commercial forestry activities and the management of land for nature protection - forest owners' perceptions of biodiversity/conservation measures vary depending on the extent of restrictions they face. Severe restrictions without appropriate compensation lead to conflicts (involving, amongst others, destruction of rare birds nests). The level of annual compensation (272 euro/ha) for restrictions in Natura 2000 forests is considered too low/insufficient to compensate losses

⁹¹⁹ Ministry of Environment of the Republic of Lithuania, 2021

incurred by forest owners. NGO representatives point out that forest felling in recent years has increased (in particular in areas where according to national inventory species and habitats of European importance were found), but the sites are not within Natura 2000, and thus, not protected by law. The advisory service for forest owners foreseen in the RDP is not working efficiently (within another study it was concluded that “In fact, there is no country-wide advisory service for forest owners”; G. Jasinevicius, 2017).

Although formally Lithuanian fishermen are not exceeding their quotas, the established quota levels (of all countries in the Baltic Sea basin) is exceeding scientific advice for TAC⁹²⁰. Unreported catching takes place; especially in Curonian lagoon (both on Lithuanian, and Russian part of the lagoon). The poaching of salmon in rivers is also an issue. The by-catch problem is not solved yet (~10% of wintering bird population ends up as a by-catch in nets).

NGO and socio-economic actor representatives point out the need for greater regard for local realities and stakeholder involvement. The lack of interaction between ministries, a lack of interaction with stakeholders (land & forest owners), and lack of communication is hampering implementation of biodiversity targets.

⁹²⁰ New Economics Foundation, 2020. Landing the blame (Overfishing in the Baltic sea 2020)

6 Romania

6.1 Introduction

6.1.1 Overview of key biodiversity state, trends, pressures and drivers

Romania has **diverse landscapes and rich ecosystems** (from wetlands to forests), which translate into an abundance and diversity of species.⁹²¹ The country contains some **1,550 protected areas**, covering 23.42% of its landmass and 20.81% of its marine waters.⁹²² 77% of the protected area network in Romania is made up of Natura 2000 sites, and only 2.84% is protected through national legislation.⁹²³ Romania's Natura 2000 network encompasses five of the nine biogeographical regions of the EU, and includes one of the five largest Natura 2000 sites in Europe, the Delta Dunării și Complexul Razim – Sinoie (5,083 km²).^{924,925} Romania contains habitats and species with a prevailing 'good' conservation status (>60% and >40% out of 173 and 621, respectively).⁹²⁶ For example, the Stag Beetle, found in Romania, is a species in good conservation status. However, according to the EEA,⁹²⁷ there are several species in a bad conservation status (and becoming worse) such as the Stellate Sturgeon, the Danube Salmon, and the Romanian Hamster.⁹²⁸ While trends in species conservation vary, the majority of habitats are in good condition. The conservation status for the majority of habitats that are not in good condition (n=55) is categorised as 'unfavourable, but stable'.⁹²⁹

Although Romanian legislation accurately reflects EU environmental requirements overall, its on-the-ground **implementation is a challenge**. This is due to a lack of planning, coordination, and appropriate funding.⁹³⁰ Lack of enforcement and information dissemination capacity have also been cited as barriers to implementation in the past.⁹³¹ Additionally, one stakeholder noted the incomplete knowledge (stock-taking) of the conservation status of habitats and species as an important challenge for Romania⁹³². It is, therefore, difficult to measure progress when you only have a partial understanding of the 'starting point'.⁹³³

One stakeholder noted that the biggest pressure on biodiversity is the **forestry sector**, which lacks concern for biodiversity.⁹³⁴ There are examples of Natura 2000 sites (e.g. Făgăraș) that have a large forest coverage, but the species that depend on the forest ecosystems are in poor conservation status. This is attributed to the forestry activity in the area. Most efforts to tackle the problem are made by NGOs, although Romsilva has made some recent attempts to improve its monitoring capacity.

⁹²¹ European Commission (2019), The Environmental Implementation Review. [Romania](#) [factsheet]

⁹²² Biodiversity Information System for Europe, [Romania](#)

⁹²³ Biodiversity Information System for Europe, [Romania](#)

⁹²⁴ EC (2019), The Environmental Implementation Review 2019. [Country Report Romania](#)

⁹²⁵ EEA (2019), [Delta Dunării și Complexul Razim - Sinoie](#)

⁹²⁶ EEA (2020), [State of Nature in the EU](#)

⁹²⁷ EEA (2020), [State of Nature in the EU](#)

⁹²⁸ EEA (2020), [State of Nature in the EU](#)

⁹²⁹ EEA (2020), [State of Nature in the EU](#)

⁹³⁰ European Commission (2019), The Environmental Implementation Review. [Romania](#) [factsheet]

⁹³¹ Ioras, F. (2003), [Trends in Romanian biodiversity conservation policy](#)

⁹³² Input received through interview

⁹³³ Input received through interview

⁹³⁴ Input received through interview

6.1.2 Overview of the national biodiversity policy framework, governance and overall progress towards the EU and global 2020 biodiversity targets

The **National Biodiversity Strategy and Action Plan (NBSAP) 2014-2020**⁹³⁵ sets the general strategic framework for biodiversity and nature protection in Romania, identifying strategic objectives and corresponding actions to be implemented by 2020 (see Table 1-1 below). The cornerstone of Romania's legislative framework for the conservation, management, and sustainable use of biodiversity is **Emergency Government Ordinance 57/2007**⁹³⁶ regarding the protected areas regime, conservation of natural habitats and wild flora and fauna approved with amendments and completions (modified by Law 49/2011⁹³⁷). Other legislative tools exist on more specific topics such as Law 5/2000 approving national planning of protected areas; Government Decision 230/2003 on the delimitation of biosphere reserves, national parks and nature parks, and setting their administration; Government Decisions 2151/2004, 1581/2005, 1143/2007 regarding the designation of new protected areas; and Government Decision 1284/2007 on the designation of special protection areas as part of Natura 2000 network (updated in 2011).⁹³⁸

The **National Agency for Protected Natural Areas (ANANP)** was created in 2016 to coordinate the management of protected areas (including Natura 2000 sites).⁹³⁹ In 2018, the government transferred the responsibility of managing Natura 2000 sites to the agency through an Emergency Government Ordinance (75/2018).⁹⁴⁰ Previously, the sites were managed by state-owned companies, private companies, universities, and research organisations.

⁹³⁵ Ministry of Environment (2014), [Strategia națională și Planul de acțiune pentru conservarea biodiversității 2014-2020](#)

⁹³⁶ Romanian Government (2007), [ORDONANȚĂ DE URGENTĂ nr. 57 din 20 iunie 2007 privind regimul ariilor naturale protejate, conservarea habitatelor naturale, a florei și faunei sălbatice](#).

⁹³⁷ Romanian Government (2011), [LEGE nr. 49 din 7 aprilie 2011 pentru aprobarea Ordonanței de urgență a Guvernului nr. 57/2007 privind regimul ariilor naturale protejate, conservarea habitatelor naturale, a florei și faunei sălbatice](#)

⁹³⁸ A more complete list can be found in the [CBD Fifth National Report](#)

⁹³⁹ <http://ananp.gov.ro/>

⁹⁴⁰ Romanian Government (2018), [Ordonanța de urgență nr. 75/2018 pentru modificarea și completarea unor acte normative în domeniul protecției mediului și al regimului străinilor](#)

Table 6-1 Brief mapping of national legislation/policies to the targets of the Biodiversity Strategy to 2020 (non-exhaustive)

EU Biodiversity Strategy 2020	RO national targets	Examples of related strategies/action plans/measures
Headline target: halt the loss of biodiversity and the degradation of ecosystem services	National Biodiversity Strategy and Action Plan (NBSAP) 2014-2020 - strategic objective D: Sustainable use of biological diversity components⁹⁴¹	
	The legislative backbone of all Romanian action on nature and biodiversity conservation is the Emergency Government Ordinance 57/2007 . Its purpose is to guarantee the conservation and sustainable use of the country's natural heritage (as per Article 1) ⁹⁴²	
Target 1: Fully implement the Birds and Habitats Directives	NBSAP - direction 2 aims to integrate the biodiversity conservation policy into all sectorial policies by 2020	<ul style="list-style-type: none"> Awareness-raising efforts have been made to increase public awareness of biological diversity values. Most European funded projects have an awareness-raising component⁹⁴³.
	NBSAP - strategic objective B: Ensuring coherence and efficient management of the natural protected areas network (includes operational objectives related to financing, legal and institutional objectives, and objectives related to efficient management)	<ul style="list-style-type: none"> Creation and establishment of a new authority, the National Agency for Protected Natural Areas, to coordinate the management of protected areas, including Natura 2000 sites (which are in the custody of the Agency as of 2018);⁹⁴⁴ EU-funded projects have supported the development of guidelines and IT tools for Natura 2000 management plans. Biodiversity conservation is primarily funded by the EU (Rural Development Fund, Operational Programme Environment, Operational Programme Fisheries, LIFE+) and the state budget, as well as Swiss and Norwegian Funds⁹⁴⁵;

⁹⁴¹ Ministry of Environment (2014), [Strategia națională și Planul de acțiune pentru conservarea biodiversității 2014-2020](#)

⁹⁴² Romanian Government (2007), [ORDONANȚĂ DE URGENȚĂ nr. 57 din 20 iunie 2007 privind regimul ariilor naturale protejate, conservarea habitatelor naturale, a florei și faunei sălbatice](#)

⁹⁴³ Biodiversity Information System for Europe (BISE) (n.d.), [Romania - Contribution to the mid-term review of the EU biodiversity strategy to 2020 based on the 5th national report to CBD](#)

⁹⁴⁴ EC (2019), The Environmental Implementation Review 2019. [Country Report Romania](#)

⁹⁴⁵ Biodiversity Information System for Europe (BISE) (n.d.), [Romania - Contribution to the mid-term review of the EU biodiversity strategy to 2020 based on the 5th national report to CBD](#)

EU Biodiversity Strategy 2020	RO national targets	Examples of related strategies/action plans/measures
		<ul style="list-style-type: none"> The Prioritised Action Framework (PAF) for Natura 2000 in Romania 2014-2020, includes a major focus on the on-going development, approval and enforcement of management plans for the 531 Natura 2000 sites in Romania⁹⁴⁶; A comprehensive tranche of national legislation provides the legal baseline for the Natura 2000 management plans (Emergency Government Order No. 34/2013 and Government Decision No. 1064/2013), ensuring that land which was under permanent pasture on 01/01/2007 is maintained under permanent pasture, and that strict controls are in place on the change of use and removal of permanent grassland.⁹⁴⁷
	NBSAP - strategic objective C: Ensuring a favorable conservation status for protected wildlife species	<ul style="list-style-type: none"> One of the main areas of action of the Prioritised Action Framework (PAF) for Natura 2000 in Romania 2014-2020 is the implementation of ameliorative measures for improving the conservation status of species and natural habitats of community importance.⁹⁴⁸
Target 2: Maintain and restore ecosystems and their services		<ul style="list-style-type: none"> Another areas of action of the Prioritised Action Framework (PAF) for Natura 2000 in Romania 2014-2020 is the maintenance and rehabilitation of the ecosystems and services provided in all sectors that impact upon biodiversity, with the view of rehabilitating at least 15% of already degraded ecosystems through the creation of forest plantations, ecological corridors, etc;⁹⁴⁹ The 2035 Territorial Development Strategy contains specific measures on green infrastructure; Connectivity through green infrastructure is also a priority action under the European strategy for the Danube Region; and the Carpathian Convention contains several objectives on green infrastructure.⁹⁵⁰

⁹⁴⁶ Barbu, R, Stanciu, I., and Redman, M. (2019), Evaluation of the impact of the CAP on habitats, landscapes, biodiversity - Romania case study report

⁹⁴⁷ Barbu, R, Stanciu, I., and Redman, M. (2019), Evaluation of the impact of the CAP on habitats, landscapes, biodiversity - Romania case study report

⁹⁴⁸ Barbu, R, Stanciu, I., and Redman, M. (2019), Evaluation of the impact of the CAP on habitats, landscapes, biodiversity - Romania case study report

⁹⁴⁹ Barbu, R, Stanciu, I., and Redman, M. (2019), Evaluation of the impact of the CAP on habitats, landscapes, biodiversity - Romania case study report

⁹⁵⁰ European Commission (2019), [The Environmental Implementation Review 2019. Country Report Romania](#).

EU Biodiversity Strategy 2020	RO national targets	Examples of related strategies/action plans/measures
Target 3: Increase the contribution of agriculture (3a) and forestry (3b) to maintaining and enhancing biodiversity	NBSAP - strategic objective D.4: Agriculture	<ul style="list-style-type: none"> Environmental needs according to the Rural Development Programme (RDP) for Romania 2014-2020 are: maintaining biological diversity and environmental value of agricultural land and forests; maintaining and improving water resources; protection and improvement of soil resources; adapting to climate change, and low GHG emissions from the agricultural sector and the transition to a low carbon economy;⁹⁵¹ The RDP contributed to protecting 1.2 mn ha of high nature value (HNV) farmland⁹⁵²; The RDP includes a target indicator for “area under contracts supporting biodiversity and/or landscapes”, which is less than 10% for Romania.⁹⁵³
	NBSAP - strategic objective D.2: Forest management	<ul style="list-style-type: none"> The Ministry of Environment, Waters and Forests developed a national catalogue of virgin and quasi-virgin forests (latest update in November 2020)⁹⁵⁴; In 2020, relevant stakeholders from the forestry sector were invited to share their views on strategic options for the development of future forest policy.^{955,956}
Target 4: Ensure the sustainable use of fisheries resources		N/A
Target 5: Combat invasive alien species	NBSAP - strategic objective F: Control invasive alien species	N/A
Target 6: Help avert global biodiversity loss		N/A

⁹⁵¹ Redman, M, and Barbu, R. (2017). Evaluation study of the payment for agricultural practices beneficial for the climate and the environment (“greening” of direct payments). Case study on Romania

⁹⁵² European Commission (2019), [The Environmental Implementation Review 2019. Country Report Romania](#)

⁹⁵³ BirdLife (2015), [Halfway There? Mid-Term Assessment of Progress on the EU 2020 Biodiversity Strategy](#).

⁹⁵⁴ Ministry of Environment, Waters and Forests (2020), [Ediția noiembrie 2020 a Catalogului pădurilor virgine și cvasivirgine din România](#)

⁹⁵⁵ Forest policy consultation (2020), [Principii propuse](#)

⁹⁵⁶ Forest policy consultation (2020), [Consultarea factorilor interesați din sectorul silvic cu privire la opțiunile strategice de dezvoltare a sectorului](#)

6.1.3 Choice of targets to focus the national case studies, and justification

Although Romania has fully transposed the EU Nature Directives, analysis shows that the country still **needs to make further efforts to fully implement the legislation**.⁹⁵⁷ Romania's land cover is comprised of **agricultural land (61%), followed by forests and other forest lands (28%)**.⁹⁵⁸ Over half of Romania's protected area network is made up of forest ecosystems (56%), followed by agroecosystems (31.5%).⁹⁵⁹ In fact, the country has the **largest area of surviving primeval forest in the EU**.⁹⁶⁰ A national catalogue currently includes 43,823.36 ha of virgin and quasi-virgin forests, but the total area may be many times larger.⁹⁶¹

As such, the focus targets selected for Romania are:

Target 1 - Full implementation of the EU nature legislation (terrestrial and marine);

Target 3A - Maximise areas under agriculture across grasslands, arable land and permanent crops that are covered by biodiversity-related measures under the CAP; and,

Target 3B - Define Forest Management Plans or equivalent instruments, in line with SFM, for all forests that are publicly owned and for forest holdings above a certain size that receive funding under the EU Rural Development Policy.⁹⁶²

6.2 Country-specific biodiversity target focus

6.2.1 Effectiveness

Overall progress towards the Biodiversity Strategy

Overall, Romanian legislation accurately reflects EU environmental requirements, but implementation remains challenging and there is a lack of knowledge/stock-taking of progress. The stakeholder consultation reflected a general consensus that there are not enough data or information available to understand national progress towards the objectives of the Biodiversity Strategy.⁹⁶³ This is partly explained by the lack of indicators. Furthermore, biodiversity conservation measures should be evaluated based on results, not only the number of beneficiaries or hectares covered by the measures.⁹⁶⁴

The 2019 EIR noted no new information on the state of natural habitats and species, or on progress made in improving their conservation status, between 2017 and 2019 (between the 2017 EIR and the 2019 EIR).⁹⁶⁵

Key success/failure stories on the implementation of the Biodiversity Strategy in MS

One stakeholder mentioned that there are many success stories, but these are **dispersed**. There are no success stories at national level, other than the creation of the **National Agency for Protected Natural Areas (ANANP)**. The agency was created to address problems of incoherent and fragmented management of protected areas.

⁹⁵⁷ WWF (2018), [Nature Score Card](#)

⁹⁵⁸ EEA (2020), [Romania country briefing - The European environment - state and outlook 2015](#)

⁹⁵⁹ Biodiversity Information System for Europe (BISE) (n.d.), [Romania](#)

⁹⁶⁰ European Commission (2019), [The Environmental Implementation Review 2019. Country Report Romania](#)

⁹⁶¹ Ministry of Environment, Waters and Forests (2020), [Ediția noiembrie 2020 a Catalogului pădurilor virgine și cvasivirgine din România](#)

⁹⁶² European Commission (2011), [The EU Biodiversity Strategy to 2020](#)

⁹⁶³ Input received from case study survey and interview

⁹⁶⁴ Input received from case study survey

⁹⁶⁵ European Commission (2019), [The Environmental Implementation Review 2019. Country Report Romania](#)

In addition, the consultation process revealed that stakeholder participation was insufficient in both the development and the implementation of the strategy.

Evidence of successful implementation of focus targets

Target 1

As reported in the Environmental Implementation Review 2019 (EIR 2019), Romania **coverage of Natura 2000 sites, Special Protection Areas (SPAs) and Sites of Community Interest (SCIs)** exceeded the EU average (as of early 2018).⁹⁶⁶ Natura 2000 sites covered 22.7% of the country's national land area (vs 18.1% in the EU), SPAs designated under the Birds Directive covered 15.3% (vs 12.4% in the EU), and SCIs designated under the Habitats Directive covered 16.9% (vs 13.9% in the EU). Romania made **progress towards preparing Natura 2000 site management plans**. In 2019, 48.5% of SCIs and 47% of SPAs had (adopted) management plans.⁹⁶⁷ However, the EIR 2019 reported a lack of communication between the Ministry of Environment and the Ministry of Waters and Forests at the time of reporting. The Ministry of Environment did not have access to the forest management plans held by the Ministry of Waters and Forests, creating a challenge for the development of Natura 2000 management plans.

Stakeholders acknowledged that positive steps were taken towards achieving Target 1, however, the steps did not necessarily result in improved implementation. The adoption of Law 49/2011⁹⁶⁸ consolidated the legal framework for the national system of protected areas, recognised the Natura 2000 sites, and clarified various aspects concerning the implementation of the EU Nature Directives. Furthermore, the adoption of the National Biodiversity Strategy (2013-2020) and a National Action Plan established provisions and proposed actions in the direction of strengthening the ecological coherence of the Natura 2000 network.

Targets 3A and 3B

Evidence suggests that some progress was made in terms of protecting high nature value (HNV) farmland through Romania's Rural Development Plan. Around half of Romania's **HNV grassland** (1.2 million ha) were protected by granting financial compensation to farmers applying management requirements.⁹⁶⁹

Agri-environment measures were highlighted as successful examples in the stakeholder consultation. Agri-environment measures have been implemented since 2007 and they are the only compensatory payment measures for biodiversity conservation through the CAP. Romania has packages on species (e.g. butterflies, birds) and permanent grasslands.

One stakeholder noted that **Forest Management Plans** are developed by the National Institute of Forestry Research and Development "Marin Drăcea" (INCDS). Forest management principles take into account forest functions as well as ecological and social aspects. The elaboration and implementation of these plans are financed through the capitalisation of the managed forest products.

⁹⁶⁶ European Commission (2019), [The Environmental Implementation Review 2019. Country Report Romania](#)

⁹⁶⁷ European Commission (2019), [The Environmental Implementation Review 2019. Country Report Romania](#)

⁹⁶⁸ Romanian Government (2011), [LEGE nr. 49 din 7 aprilie 2011 pentru aprobarea Ordonanței de urgență a Guvernului nr. 57/2007 privind regimul ariilor naturale protejate, conservarea habitatelor naturale, a florei și faunei sălbatice](#)

⁹⁶⁹ European Commission (2019), [The Environmental Implementation Review 2019. Country Report Romania](#)

Evidence of unsuccessful implementation of focus targets

Target 1

The implementation of Target 1 in Romania suffers from a **lack of planning, administrative capacity, coordination, and adequate funding**.⁹⁷⁰ The EIR 2019 explained that implementing the Nature Directives is a considerable challenge for Romania.⁹⁷¹ Although MS need to designate SCIs as Special Areas of Conservation (SACs) within six years of their (SCI) designation, Romania did not meet its deadline.⁹⁷² As of 2019, **no SACs had been designated**.⁹⁷³ Furthermore, the change in the management system of the Natura 2000 sites (from the custody of NGOs, state-owned companies, private companies, universities and research organisations to the new National Agency for Protected Natural Areas) created some (short-term) uncertainty about the project proposals submitted for EU financing.⁹⁷⁴

The National Agency for Protected Natural Areas (ANANP) was created to address the issues of coordination and administrative capacity that Romania faces. Its creation is seen as a positive contribution to a more coherent approach to nature conservation; however, according to one stakeholder, the institution is only becoming active now (i.e. several years after its creation). Another stakeholder noted that the agency has very low technical and financial capacity due to the generally low budget allocations for the sector. The change in responsibility was also criticised due to the fact that the previous custodians (i.e. especially NGOs) of the protected areas had delivered good results. As a result of this change, 530 protected areas (at least 60% of the total) remained unmanaged, ANANP lacking the capacity to ensure the implementation of conservation measures in the territory. Recent infringement proceedings related to the management of Natura 2000 sites indicate the deficiency of the system.

Targets 3A and 3B

According to a study by Redman and Barbu (2017), relevant authorities (notably the Ministry of Agriculture and Rural Development) have taken a 'line of least resistance' regarding the implementation of 'greening' (of direct payments to farmers) in Romania and simply followed the main text of Articles 43-46 of Regulation (EU) No 1307/2013⁹⁷⁵.⁹⁷⁶ This can be explained by the complexity and late approval of the 'greening package', and lack of institutional capacity of the relevant authorities. The same study explains that opportunities for tailoring greening practices to suit the specific agronomic context of arable production in Romania (particularly in the lowland plain areas) and the challenges of climate change (e.g. water deficits, soil desertification) have been overlooked.

The stakeholder consultation reiterated that there is insufficient connectivity between Natura 2000 sites - except for the examples of connectivity for large carnivores. The latter causes troubles for farmers.

⁹⁷⁰ European Commission (2019), The Environmental Implementation Review. [Romania](#) [factsheet]

⁹⁷¹ European Commission (2019), [The Environmental Implementation Review 2019. Country Report Romania](#)

⁹⁷² EEA (2020), [State of Nature in the EU](#)

⁹⁷³ European Commission (2019), [The Environmental Implementation Review 2019. Country Report Romania](#)

⁹⁷⁴ European Commission (2019), [The Environmental Implementation Review 2019. Country Report Romania](#)

⁹⁷⁵ EU (2013), [Regulation \(EU\) No 1307/2013 of the European Parliament and of the Council of 17 December 2013 establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy and repealing Council Regulation \(EC\) No 637/2008 and Council Regulation \(EC\) No 73/2009](#)

⁹⁷⁶ Redman, M, and Barbu, R. (2017). Evaluation study of the payment for agricultural practices beneficial for the climate and the environment ("greening" of direct payments). Case study on Romania

Key factors which have contributed to achieving objectives

Evidence relating to Target 1

In 2016, the **National Agency for Protected Natural Areas** was established to coordinate the management of protected areas, including Natura 2000 sites.⁹⁷⁷ The agency became responsible for the sites in 2018 through an Emergency Government Ordinance.⁹⁷⁸ However, according to one stakeholder, the agency is only starting to become active now. The establishment of the new management authority is seen as a positive and hopeful shift in responsibility. Beyond the management of protected natural areas, the authority has a mandate to promote public policies related to environmental protection, carry out biodiversity monitoring and awareness-raising activities, provide support to local administrations, organise training activities, and implement conservation measures.⁹⁷⁹ The establishment of the agency is not expected to fully eliminate capacity constraints, but some improvements are foreseen in the future. The agency is expected to help coordinate and provide a coherent, top-down approach to conservation activities.

Evidence relating to Targets 3A and 3B

In 2020, the Ministry of Environment, Waters and Forests initiated a **dialogue with relevant stakeholders from the forestry sectors** to help develop and discuss future forest policy (i.e. a strategy for the forestry sector).⁹⁸⁰ The consultation aimed to involve relevant stakeholders in the decision-making process, and to inform them about the strategic challenges and opportunities existing in the sector. The consultation led to the elaboration of several principles, including: ensuring the stability of forest ecosystems (i.e. forest policy should increase the resilience of forest ecosystems) and ensuring the continuity of ecosystem services through adequate forest management.⁹⁸¹

Illegal logging is seen as a big problem in Romania. Efforts have been made to combat illegal logging, including the updated Integrated Information System for Wood Tracking (SUMAL), which now allows the public to report any vehicles suspected to be loaded with illegal timber to the emergency number, 112.⁹⁸²

Key factors which have hindered the achievement of objectives

Evidence relating to Target 1

As already highlighted above, factors that have hindered the achievement of Target 1 objectives include **lack of administrative capacity and coordination (including lack of resources to assess management plans), lack of knowledge and data, complex decision-making processes, and lack of spatial planning**. One stakeholder noted the lack of a unified approach at national level and the incomplete knowledge about the level of conservation in the country to represent important obstacles to the implementation of the Biodiversity Strategy in Romania. The mismatch between positions of responsibility and adequate skills or education is yet another obstacle.

Poor management plan quality and restrictive measures in the plans that such require compensation for land owners further affected green infrastructure promotion (through Natura 2000 sites).⁹⁸³ The EIR

⁹⁷⁷ <http://ananp.gov.ro/>

⁹⁷⁸ Romanian Government (2018), [Ordonanța de urgență nr. 75/2018 pentru modificarea și completarea unor acte normative în domeniul protecției mediului și al regimului străinilor](#).

⁹⁷⁹ <http://ananp.gov.ro/misiune/>

⁹⁸⁰ Forest policy consultation (2020), http://apepaduri.gov.ro/app/webroot/uploads/files/Met_v3_final.pdf

⁹⁸¹ Forest policy consultation (2020), [Principii propuse](#)

⁹⁸² European Commission (2019), [The Environmental Implementation Review 2019. Country Report Romania](#)

⁹⁸³ European Commission (2019), [The Environmental Implementation Review 2019. Country Report Romania](#)

2019 recommended to put in place clearly defined conservation objectives, necessary conservation measures for the sites, and provide adequate resources for their implementation.

Evidence relating to Targets 3A and 3B

The same main factors highlighted above are relevant for Targets 3A and 3B.

Romania's agricultural sector is largely dominated by fragmented, small-scale farming. The few existing medium and large-scale commercial units are considered target group for greening in Romania.⁹⁸⁴ Smaller farms are not a target group for greening, but they are closely linked to HNV farming, particularly in the mountainous and sub-mountainous regions of Romania. Research shows that the permanent grasslands measure appears to have been relatively straightforward to administer and has the potential to bring about positive benefits, but only 38% of permanent grasslands are subject to the measure given the polarised structure of Romanian agriculture (due to its fragmented nature, comprised of many small tracks of agricultural land).⁹⁸⁵

Another factor that hinders the implementation of Target 3A is **farmers' attitude towards greening**, which is seen as a primarily administrative/bureaucratic exercise adding an additional layer of complexity on top of existing mandatory obligations and voluntary undertakings.⁹⁸⁶

Meanwhile, one could say that Target 3B is hindered by **illegal logging**. This is an issue that is strongly covered by national and international media.^{987,988,989} Illegal logging happens on Natura 2000 sites as well. Authorities have boosted efforts to combat illegal logging - through improved inspection capacity, the use of new monitoring technologies, and a stricter legal framework.⁹⁹⁰

The lack of clear objectives relating to sustainable forest management leads to a loose interpretation of the actions of the strategy, making it difficult to manage forests in a sustainable way.⁹⁹¹

6.2.2 Efficiency

There was an overall lack of specific evidence to draw substantiated conclusions on the efficiency criterion. However, it seems that the Biodiversity Strategy brought direct benefits to Romania in that it influenced national and local policy. However, progress and implementation have been very limited and slow. It has been demonstrated that funds in Romania are not often spent efficiently, which in turn hinders policy-making. Given the lack of adequate resources and the poor spending of funds, adequate implementation of biodiversity measures may be seen as inefficient.⁹⁹² Additionally, one stakeholder indicated that there is a lack of transparency in terms of how funds are spent. Since there is a lack of

⁹⁸⁴ Redman, M, and Barbu, R. (2017). Evaluation study of the payment for agricultural practices beneficial for the climate and the environment ("greening" of direct payments). Case study on Romania

⁹⁸⁵ Redman, M, and Barbu, R. (2017). Evaluation study of the payment for agricultural practices beneficial for the climate and the environment ("greening" of direct payments). Case study on Romania

⁹⁸⁶ Redman, M, and Barbu, R. (2017). Evaluation study of the payment for agricultural practices beneficial for the climate and the environment ("greening" of direct payments). Case study on Romania

⁹⁸⁷ Eurisy (2017), [Romania turns to satellites to crackdown on illegal deforestation](#)

⁹⁸⁸ Euractiv (2020), [Illegal logging in Romania overwhelms authorities](#)

⁹⁸⁹ The Guardian (2020), [Violence escalates as Romania cracks down on illegal timber trade](#)

⁹⁹⁰ European Commission (2019), [The Environmental Implementation Review 2019. Country Report Romania](#)

⁹⁹¹ Example from stakeholder consultation

⁹⁹² As reported in the stakeholder consultation

national coordination (i.e. lack of a unitary approach), irregularities in funding schemes can be inefficient.⁹⁹³

Key evidence of benefits

Evidence relating to Target 1

Higher landscape value (e.g. in the Danube Delta).⁹⁹⁴

Evidence relating to Targets 3A and 3B

The promotion of sustainable agricultural products.⁹⁹⁵

Key evidence of costs

Evidence relating to Target 1

No specific evidence was found.

Evidence relating to Targets 3A and 3B

Examples of costs are agri-environment payments. Compensatory payments are important for motivating farmers to keep implementing extensive measures.

Evidence of socioeconomic impacts

Evidence relating to Target 1

No specific evidence could be identified.

Evidence relating to Target 3A and 3B

Land consolidation, intensive farming, threat to smallholders, and lack of interest for young farmers to remain in rural areas.⁹⁹⁶

6.2.3 Coherence

Coherence with the EU 2020 Strategy

Formal efforts are made to align with the EU strategy, but, in practice, progress is very limited due to the constraints highlighted above (such as administrative capacity and lack of data and information)⁹⁹⁷.

Coherence with EU Policies/ Programmes

The Biodiversity Strategy is coherent with the **LIFE programme**. For example, large carnivore conservation in Romania is funded by the LIFE programme, contributing to capacity building. Examples of LIFE projects include: Vrancea LIFE02 NAT/RO/008576, Carnivores Vrancea II, LIFE05 NAT/RO/000170, and URSUSLIFE, LIFE08 NAT/RO/000500. These examples have been cited as good practice examples of monitoring, knowledge, and policy in a study by Ecologic.⁹⁹⁸ According to the study, the first of the listed projects started with a team of three people and grew to over 25 people working on large carnivore conservation issues within URSUSLIFE or other parallel projects. The expert network has helped implement monitoring activities over the years. Since the projects were finalised, two other LIFE projects have commenced: LIFE FOR BEAR (LIFE13 NAT/RO/001154) and WOLFLIFE (LIFE13 NAT/RO/000205). The beneficiaries of the LIFE projects have been able to manage other

⁹⁹³ Interview

⁹⁹⁴ Example from stakeholder consultation

⁹⁹⁵ Example from stakeholder consultation

⁹⁹⁶ Examples from stakeholder consultation

⁹⁹⁷ Input from interview

⁹⁹⁸ EEA (2020), [State of Nature in the EU](#)

projects focused on large carnivore conservation, funded by other sources such as National Geographic and EEA grants. In Romania, the wolf has a favourable conservation status.⁹⁹⁹ Furthermore, the LIFE project, “Connect Carpathians - Enhancing landscape connectivity for brown bear and wolf through a regional network of NATURA 2000 sites in Romania”, is another example of a successful LIFE project connecting Natura 2000 sites and protecting bears and wolves.¹⁰⁰⁰

Coherence with international biodiversity commitments

The biodiversity ambitions in Romania are consistent with the Convention on Biological Diversity (CBD). Romanian legislation makes references to international commitments, but they are only partially implemented.

6.2.4 Relevance

Relevance of EU Biodiversity Strategy

The EU Biodiversity Strategy is considered very relevant overall. It creates a basis on which biodiversity action can be taken and provides a direction to national policies.

Relevance to stakeholder needs

Several stakeholders mentioned that the strategy and its targets remain relevant to the needs of various stakeholders.

Based on the implementation of the LIFE projects cited above (which support the ambitions of the Biodiversity Strategy), funding going to biodiversity promotes capacity building that supports biodiversity-related objectives.

Relevance of EU Biodiversity Strategy to MS biodiversity needs

Several stakeholders considered the EU Biodiversity Strategy to be relevant to Romania’s biodiversity needs. One stakeholder noted that it is partially relevant due to the lack of clear and legally binding indicators. Another stakeholder noted that needs have not changed substantially over time, and that the need to tackle biodiversity loss, habitat degradation, and species population reduction remains relevant, particularly in light of the focus on economic development post-Covid-19.

6.2.5 EU added-value

Evidence of additional benefits compared to MS action

Stakeholders generally agree that the strategy brought **additional benefits** compared to MS action. One stakeholder reported that stopping the EU intervention would lead to negative impacts in the medium to long term.¹⁰⁰¹ Another stakeholder highlighted that EU law has had a significant impact on nature protection in Romania.¹⁰⁰² Most of the positive legal developments that have happened in Romania in the past 15 years are directly linked to the transposition of the relevant EU directives and the pressure of the European Commission to ensure compliance.¹⁰⁰³

⁹⁹⁹ EEA (2020), [State of Nature in the EU](#)

¹⁰⁰⁰ European Commission (2019), The Environmental Implementation Review. [Romania](#) [factsheet]

¹⁰⁰¹ Input received through case study survey

¹⁰⁰² Input received through case study survey

¹⁰⁰³ Input received through case study survey

Evidence of change in MS ambition and/or commitments due to Biodiversity Strategy

One stakeholder highlighted the importance of the EU Biodiversity Strategy in **influencing large infrastructure projects**. Since 2019, the European Commission (more specifically, DG Environment) has been more attentive to Romania's large infrastructure projects and their impact on biodiversity (including on Natura 2000 sites). DG Environment takes more of a stance now, in line with the Biodiversity Strategy.

Evidence of change in sectoral ambition due to Biodiversity Strategy

Other stakeholders noted that the adoption of the **National Biodiversity Strategy** is directly linked to the EU Biodiversity Strategy, and its objectives are aligned to those of the EU strategy.¹⁰⁰⁴ In the absence of the EU strategy, there may not have been a national strategy, and it would not have had the same ambitions. However, impact on the ground remains limited because the strategy is non-binding.

6.3 Conclusions

In thinking about the **effectiveness** of the Biodiversity Strategy in Romania, and focusing particularly on targets 1, 3A, and 3B, the strategy has brought benefits to Romania. The benefits that were identified include the development of national legislation, action plans, forest management plans, and a national strategy. Although the legal framework is in place, implementation remains weak and there is limited evidence on the **efficiency** of actions. Overall, the strategy remains **relevant** and **coherent**, but it is non-binding nature and the lack of data to measure progress limits its impacts on the ground. There was limited evidence in literature on the relevance and coherence of the strategy, but there was a general consensus among stakeholders that the strategy was relevant, coherent, and **adds value** on top of national action. The strategy also provides a base for EU funding in biodiversity and helps counter projects and actions that are incoherent with biodiversity objectives (e.g. large infrastructure projects putting biodiversity in danger). Overall, the main criticism is that **implementation mechanisms have been weak**.

¹⁰⁰⁴ Input received through case study survey

7 Bulgaria

7.1 Introduction

7.1.1 Overview of key biodiversity state, trends, pressures and drivers

Bulgaria is one of Europe's richest countries in terms of biodiversity, and ranks 3rd among the EU member states, after Slovenia and Croatia, in the percentage coverage of the **NATURA 2000 network** - **34.9%** of the national territory. There are 120 protected areas designated under the Birds Directive. The total area of SPAs is 26 164 km² (by 2019). 13 protected areas under the two Directives have common borders and completely overlap. The designated protected areas under the Habitats Directive are 233. The total area of SPA and SCI, including overlaps and together with marine protected areas is 41 560 km²¹⁰⁰⁵. Bulgaria is situated in 3 biogeographical regions - Alpine, Black Sea and Continental, and a high number of Balkan and Bulgarian endemics can be found on its territory. Bulgaria has 55 reserves, 364 nature landmarks, 3 national and 11 nature parks¹⁰⁰⁶.

Recently, a new National Biodiversity Conservation Strategy has been drafted together with a National Plan for Biodiversity and Genetic Resources Conservation 2020-2024 - both are awaiting approval. Although in the last decade there is a big improvement in the human, technological and financial capacity in the sector of biodiversity, still a number of challenges remain and require further development - such as effective management and control of biodiversity-related actions, and adequate institutional capacity and coordination.

Among the main threats to biodiversity in Bulgaria remain the loss of habitats caused by urban and infrastructure development; unsustainable agriculture and intensification of agricultural practices (e.g. grazing); afforestation with non-native species; exploitation of economically viable species; pollution¹⁰⁰⁷.

For the purpose of this study, a survey was sent out to the most relevant stakeholders (64). The total number of answered surveys was 13, among which 2 were from governmental/administrative bodies, 6 regional governance bodies, 1 specialised territorial unit of the Executive Forest Agency, 2 NGOs, 1 academic body and 1 association. In addition, 4 interviews were carried out - with 2 representatives of the competent authorities - the Ministry of Environment and Water (MoEW) and the Ministry of Agriculture, Food and Forestry (MAFF) and two with experts in biodiversity.

7.1.2 Overview of the national biodiversity policy framework, governance and overall progress towards the EU and global 2020 biodiversity targets

¹⁰⁰⁵ Ministry of Environment and Water, Bulgaria (2019) [National prioritised action framework \(NPAF\) for Natura 2000 Bulgaria](#).

¹⁰⁰⁶ <https://www.nsi.bg/en/content/5071/environment>

¹⁰⁰⁷ Ministry of Environment and Water, Bulgaria (2019) [National prioritised action framework \(NPAF\) for Natura 2000 Bulgaria](#).

During the period 2014 - 2020, the **national policy framework** directly related to biodiversity conservation in Bulgaria was **amended** and **supplemented**, and **new legislation** was drafted. Among these: Biodiversity Act, Forests Act, Environmental Protection Act, Law on hunting and game conservation, Law on Medicinal Plants, Ordinance for development of protected areas management plans, etc.¹⁰⁰⁸. Many **strategic documents**, action plans and programmes for nature conservation have been developed or amended, such as: NPAF for Natura 2000 Bulgaria 2014-2020, National Action Plan for Conservation of Wetlands 2013-2022¹⁰⁰⁹, National Strategy for Sustainable Agriculture Development in Bulgaria 2014-2020¹⁰¹⁰, Draft Strategy for sustainable use of the Black Sea coastal ecosystems¹⁰¹¹, National Regional Development Strategy (NRDS) of the Republic of Bulgaria 2012-2022¹⁰¹², Rural Development Programme (RDP) Bulgaria 2014-2020¹⁰¹³, Operational Programme Environment 2014-2020¹⁰¹⁴, Maritime and Fisheries Programme 2014-2020¹⁰¹⁵ and other operational programmes, National Forest Development Strategy for Bulgaria 2013 - 2020¹⁰¹⁶, etc.

In line with the requirements of the EU Biodiversity Strategy 2020, a number of **projects** and **activities** have been implemented in Bulgaria. These projects have been carried out with a large number of participants - scientists, state institutions and NGOs representatives.

In addition, during the last decade, Bulgaria signed and ratified the Nagoya Protocol on Access to Genetic Resources and benefit-sharing¹⁰¹⁷ and became the 127th member of the Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES)¹⁰¹⁸.

Although Bulgaria has enhanced its policy framework with regard to biodiversity, still a number of challenges have been recognised that hinder the progress on biodiversity goals and quality of environment. Among these are the poor enforcement of environmental and conservation regulations, ineffective management and administration of protected areas, and inefficient spending of available financing¹⁰¹⁹.

Below, the Bulgarian national legislation/policies have been mapped in relation to the targets of the Biodiversity Strategy to 2020.

¹⁰⁰⁸ Ministry of Environment and Water. [*Sixth National Report 2014-2018 to the Convention on Biological Diversity*](#)

¹⁰⁰⁹ [Bulgarian Biodiversity Foundation \(2013\) *National Action Plan for Conservation of Wetlands of High Significance in Bulgaria 2013-2022*: Bulgarian Biodiversity Foundation, IBER-BAS, Bulgarian Society for the Protection of Birds, Ministry of Environment and Water](#)

¹⁰¹⁰ Ministry of Agriculture and Foods of the Republic of Bulgaria (2013) *National Strategy For Sustainable Agriculture Development In Bulgaria In The Period 2014 – 2020*

¹⁰¹¹ Ministry of Environment and Water (2009-2014). [Draft Strategy for sustainable use of the Black Sea coastal ecosystems](#)

¹⁰¹² Ministry of Regional Development and Public Works (2012). [National Regional Development Strategy of the Republic of Bulgaria 2012-2022](#).

¹⁰¹³ Rural Development Programme 2014-2020. [RDP 2014-2020](#)

¹⁰¹⁴ Operational Programme Environment 2014-2020. [OPE 2014-2020](#)

¹⁰¹⁵ [Maritime and Fisheries Programme 2014-2020](#)

¹⁰¹⁶ Ministry of Agriculture and Foods of the Republic of Bulgaria (2013). [National Forest Development Strategy for Bulgaria 2013 - 2020](#).

¹⁰¹⁷ <https://www.cbd.int/abs/>

¹⁰¹⁸ <https://www.ipbes.net/>

¹⁰¹⁹ European Commission (2019) [The Environmental Implementation Review 2019 - Country report for Bulgaria](#).

Table 7-1 Overview of Bulgaria Biodiversity national targets and related actions and measures to the Targets of the EU Biodiversity Strategy to 2020

EU Biodiversity Strategy 2020	Bulgarian National targets	Related strategies/action plans/measures
Headline target: halt the loss of biodiversity and the degradation of ecosystem services	<p>NRDS - National Regional Development Strategy of the Republic of Bulgaria (2012-2022)</p> <p>Priority 1.3. Development of environmental protection infrastructure;</p> <ul style="list-style-type: none"> - Objective No. 4: Conservation, maintenance and restoration of biodiversity as part of the natural potential for sustainable development of the regions - Objective No. 5: Prevention of natural risks <p>Improving management of water and other natural resources, including biodiversity and Natura 2000</p>	<p>National Regional Development Strategy (NRDS) of the Republic of Bulgaria 2012-2022</p> <p>Partnership Agreement 2014-2020</p> <p>Cohesion policy funds 2014-2020</p> <p>Marine Strategy of Republic of Bulgaria</p> <p>National Biodiversity Conservation Plan for 2005-2010;</p>
Target 1: Fully implement the Birds and Habitats Directives	<p>NDP Priority 3, Sub-priority 3.5, Target: Protecting, sustaining and restoring biodiversity as part of the natural potential for sustainable development of the regions</p> <p>NPAF priorities</p> <ul style="list-style-type: none"> - Priority 2 (corresponding to Aichi target 11): sustainable management of protected areas of the NATURA 2000 network - Priority 4: Building, development and maintaining of a shared vision for NATURA 2000 in Bulgaria; 	<p>National Development Program: Bulgaria 2020</p> <p>NPAF for Natura 2000 Bulgaria</p>
Target 2: To maintain and enhance ecosystems and their services	<p>NPAF priorities</p> <ul style="list-style-type: none"> - Priority 2: Sustainable management of protected areas of the NATURA 2000 network - Priority 3: Sustainable use of ecosystem services for optimum public benefits, and other factors for socioeconomic development of regions <p>National Action Plan for Conservation of Wetlands - horizontal measures</p> <ul style="list-style-type: none"> - Introduction and support of economic mechanisms for wetland conservation, including inventorying and evaluation of the ecosystem services <p>Draft Strategy for sustainable use of the black sea coastal ecosystems: Scope 1:</p> <ul style="list-style-type: none"> - Priority 1 - Creation of a legal framework for the introduction of ecosystem services into legislation and sectoral policies - Priority 2 - Creating institutions to implement the strategy and the sustainable use of the Black Sea coastal ecosystems - Priority 3 - Creating mechanisms for planning and information on ecosystem services - Priority 5 - Protection and restoration of ecosystems and habitats, incl. emblematic species and habitats - Priority 6 - International cooperation to improve the knowledge, protection and restoration of ecosystems of the Black Sea and its coastal zone 	<p>NPAF for Natura 2000 Bulgaria</p> <p>National Action Plan for Conservation of Wetlands 2013-2022</p> <p>Draft Strategy for sustainable use of the black sea coastal ecosystems under Programme BG03: Biodiversity and Ecosystem Services under the Financial Mechanism of the European Economic Area 2009-2014</p>

<p>Target 3A. Agriculture: By 2020, maximise areas under agriculture across grasslands, arable land and permanent crops that are covered by biodiversity;</p>	<p>RDP - Two of the six Rural Development priorities include: Competitiveness of agri sector and sustainable forest management and Restoring, preserving and enhancing ecosystems related to agriculture and forestry</p> <ul style="list-style-type: none"> - Converting 46 000 ha to organic farming; - Implement agri-environmental measures in 113 000 ha <p>NDP - National Priority: 4. Development of the agricultural sector to ensure food security and production of products with high value added through sustainable management of natural resources.</p> <p>Target: Promoting the development of the organic agricultural sector</p> <p>By 2020 a decrease in the negative impact on biodiversity in agricultural areas by implementation of sustainable schemes for management of lands and forests</p> <p>Draft Strategy for sustainable use of the black sea coastal ecosystems: Scope 2:</p> <ul style="list-style-type: none"> - Priority 7 - Implementation and application of good agricultural practices and protection of traditional agricultural practices for biodiversity conservation in agricultural lands - Priority 8 - Develop a national policy for building and managing farmers' markets 	<p>Rural Development Programme Bulgaria 2014-2020 (RDP)</p> <p>National Development Program: Bulgaria 2020</p> <p>Draft Strategy for sustainable use of the black sea coastal ecosystems</p>
<p>Target 3b. Forests: By 2020, Forest Management Plans or equivalent instruments, in line with Sustainable Forest Management (SFM), are in place for all forests that are publicly owned and for forest holdings above a certain size</p>	<p>Under the RDP € 8 750 000 public funding was planned to be spent on forest-environmental and climate activities and forest conservation</p> <p>NFDS 3 National strategic targets: 1. Ensuring sustainable development of the forest sector through achievement the optimal balance between the ecological function of forests and their ability to provide material benefits and services in the long run; 2. Strengthening the role of forests in ensuring economic growth of the country and more evenly (balanced) territorial socio-economic development; 3. Increasing the contribution of the forestry sector to the green economy.</p> <p>NDP: Sub-priority 4.5 Sustainable use and management of the natural resources Target area: Sustaining and preserving the forest resources.</p> <p>Draft Strategy for sustainable use of the black sea coastal ecosystems: Scope 2 - Priority 9 - Sustainable management of forests along the Black Sea coast; Scope 5 - Adaptation of ecosystems to climate change - Priority 19 - Adaptation of forest ecosystems towards a warmer and a drier climate</p>	<p>Rural Development Programme Bulgaria 2014-2020 (RDP)</p> <p>National Forest Development Strategy for Bulgaria (2013 - 2020)</p> <p>Draft Strategy for sustainable use of the black sea coastal ecosystems</p>
<p>Target 4: To ensure the</p>	<p>NDP Priority 3. Achieving sustainable integrated regional development and use of local potential</p>	<p>National Development Program: Bulgaria 2020</p>

sustainable use of fisheries resources	<p>Sub-priority 3.5 Establishing conditions for preserving and improving the environment in the regions, adapting to the climate changes and achieving sustainable and effective use of the natural resources</p> <ul style="list-style-type: none"> - Target area: Improving the environment of the Black Sea and the Bulgarian Black Sea coast <p>Sub-priority 4.6 Establishing competitive fish sector providing sustainable management of fisheries and aquacultures</p> <ul style="list-style-type: none"> - Target area: Protecting and effectively managing the fish resources <p>Maritime and Fisheries Programme 2014-2020: Union Priority 1: Promoting environmentally sustainable, resource-efficient, innovative, competitive and knowledge-based fisheries</p> <p>Draft Strategy for sustainable use of the black sea coastal ecosystems: Scope 2</p> <ul style="list-style-type: none"> - Priority 10 - Sustainable management of fishery resources in the Black Sea coast <p>Marine Strategy of Bulgaria 2016-2021</p>	<p>Maritime and Fisheries Programme 2014-2020</p> <p>Draft Strategy for sustainable use of the black sea coastal ecosystems</p> <p>Marine Strategy of Republic of Bulgaria - transposing the MSFD in the BG legislation</p>
Target 5: To control invasive alien species (IAS)	<p>Regulations on the Introduction of non-native or re-introduction of native animal and plant species into nature</p> <p>National Action Plan for Conservation of Wetlands - horizontal measures</p> <ul style="list-style-type: none"> - Inventorying and impact assessment of invasive species 	<p>Biodiversity Act - https://www.lex.bg/laws/ldoc/2135456926</p> <p>National Action Plan for Conservation of Wetlands 2013-2022</p>
Target 6: To help avert global biodiversity loss	<p>Strategic goal on “Limitation and halting of the biodiversity loss”;</p> <p>Draft Strategy for sustainable use of the black sea coastal ecosystems: Scope 2</p> <ul style="list-style-type: none"> - Priority 16 - Integrating biodiversity into spatial and regional planning 	<p>National Strategy for Environment 2009-2018</p> <p>Draft Strategy for sustainable use of the black sea coastal ecosystems</p>

7.1.3 Choice of targets to focus the national case studies, and justification

For Bulgaria, three targets have been chosen as a focus for this case study, namely Target 1, Target 3A and Target 5.

Target 1 - As mentioned, Bulgaria is one of the EU Member States with the richest biodiversity. During the period of the Strategy, the process of issuing orders for designating protected areas for protection of wild birds in Bulgaria has been practically completed. However, the process of issuing orders with restrictions and requirements under the Habitats Directive has been significantly delayed, posing a serious risk to biodiversity and hence nonconformity with the Biodiversity Strategy targets.

Target 3A

Agriculture is one of the important sectors for Bulgaria's economy. The share of agricultural land in Natura 2000 is 23%, significantly higher than the EU-28 average (about 11%). This percentage is an important indicator of the degree of biodiversity conservation. In Bulgaria only 15.4% of agricultural land of Community interest is in a favourable conservation status and about 84.6% of meadows have an

unfavourable-unsatisfactory conservation status¹⁰²⁰. According to Eurostat data (NUTS-3 level), Bulgaria is among the Member States with the highest loss of High Nature Value farmland (-0.2% of the Utilised Agricultural Area) due to intensification of agriculture. The Ministry of Agriculture, Food and Forestry (MAFF) addresses this problem with applying measures envisaged in the Rural Development Program 2014-2020¹⁰²¹ (e.g. Measure 10. Agroecology and Climate). Some of the measures in the RDP support conservation of important habitats and biodiversity in High Nature Value farmland, promote sustainable land management, the protection of natural landscapes and rare breeds of animals and plant varieties, etc. However, the specifics of the region - land abundance, together with the fact that the agricultural land is highly “fragmented”, in small farms, and the intensification of agricultural production, create risk for biodiversity - inefficient use of natural resources and negative impact on ecosystems and the services they provide.

Target 5

Until 2005 there was no progress in addressing the problem of invasive alien species (IAS). Following the adoption of Regulation (EU) No 1143/2014 on the prevention and management of the introduction and spread of IAS, more informed actions are being taken. In the recent years, however, the rate of spread of some invasive species in Bulgaria is increasing. Currently, nearly 60 species of flowering plants are considered invasive or potentially invasive. Some of the most problematic for local biodiversity are *Ailanthus altissima*, *Amorpha fruticosa*, *Fallopia bohemica* and more recently *Opuntia humifusa*. The biggest threat to biodiversity for Bulgaria are the Asian ladybeetle *Harmonia axyridis* and the Horse chestnut leaf miner *Cameraria ohridella*¹⁰²². Combating IAS needs a very sound coordination and constant joint efforts in a global aspect to make progress in dealing with their invasion. In this respect, Bulgaria has made some advancements, yet common for the country issues, such as administrative capacity or inefficient use of funding, is an impediment to better results.

7.2 Country-specific biodiversity target focus

7.2.1 Effectiveness

Overall progress towards the Biodiversity Strategy

Bulgaria made a significant **progress in designating protected areas**. The designation of Important Bird Areas as SPAs has been completed. However, there is a considerable delay in the designation of Sites of Community Importance as Special Areas of Conservation, which is noncompliance with Article 4(4) of the Habitats Directive. Another point of progress towards the Biodiversity Strategy is the setting of an **appropriate mechanism to monitor natural habitats**, species and birds subject to protection through NATURA 2000 network¹⁰²³.

Since January 2016, Bulgaria has also made substantial progress in implementing Mapping and Assessment of Ecosystem Services (MAES). Methodologies for mapping and assessing the state of ecosystems and their services have been established in accordance with the methodological framework set by the Working Group for MAES at the EC, in connection with Action 5 of the EU Biodiversity Strategy 2020. This became possible with the implementation of a predefined project BG03.PDP2 “Methodological support for

¹⁰²⁰ Agrarian University – Plovdiv (2020) *Analysis of agriculture on the state of the environment and climate change: SWOT analysis*.

¹⁰²¹ Rural Development Programme 2014-2020. [RDP 2014-2020](#)

¹⁰²² Agrarian University – Plovdiv (2020) *Preparation of analysis of the influence of agriculture on the environment and climate change, Annex № 1: Contribution of the analysis of the results and impact of the CAP 2014-2020 to the SWOT analysis*.

¹⁰²³ Bulgarian National Audit Office (2019). “Efficiency of the management of Natura 2000 network for protection of the environment and local communities” for the period from 01.01.2016 to 31.12.2018, Sofia

assessment of the state of ecosystems and biophysical assessment of ecosystem services” (MetEcoSMAP), aiming to create a **National Methodological Framework** for assessment and mapping of ecosystems and their services. This framework includes nine methodologies for the respective nine types of ecosystems identified on the territory of Bulgaria.

Under the Rural Development Programme 2007-2013¹⁰²⁴, and more specifically in the frame of Priority Axis 2 - Improving the environment and nature, which includes agri-environmental payments and payments for Natura 2000 and the Water Framework Directive (for farmlands), a **National Strategy for Sustainable Development of Agriculture in Bulgaria 2014-2020** has been elaborated.

Bulgaria actively participated in establishing the **East and South European Network on Invasive Alien Species (ESENIA¹⁰²⁵)**, with the objective of creating a single information portal for exchange of information, identification of new invasive species, assessment and risk management, monitoring and control of the established species, enhance cooperation between the institutions and experts from Southeast Europe. Measures to mitigate the impact of invasive species are embedded in some sectoral plans and programs.

Key success/failure stories on the implementation of the Biodiversity Strategy in MS

The best success stories on the implementation of Biodiversity targets to 2020 in Bulgaria come from a number of projects, carried out under the LIFE programme (summarised below).

Target 1

Programme/funding	LIFE
Name of project	NaturAll LIFE - NaturAll LIFE: Build up acceptance of Natura2000 among key audiences; bring up generation of knowledgeable supporters, LIFE15 GIE/BG/000977 - http://www.prosveta.bg/naturall/
Status	Completed, 2016 – 2019
Beneficiary	Large enterprise – Prosveta
Aim of the project, measures and results	<p>The project focused on communication and information actions designed to raise awareness in Bulgaria of the Natura 2000 network and aiming to trigger positive behavioral changes among farmers, hunters, students and teachers.</p> <p>Project actions and results:</p> <ul style="list-style-type: none"> - Initiative ‘Natura 2000 on wheels’ for reaching at least 5 400 farmers, hunters and managers of Natura 2000 network sites; - Initiative ‘Natura 2000 Imaginaria’ for reaching at least 32 000 middle and elementary school pupils and 120 teachers each year; - Establishing a support network among teachers interested in Natura 2000; - Conducted events at national and regional levels as part of a media campaign designed to reach 300 000 people; - Developed materials and guides for responsible behavior.

Target 3

Programme/funding	LIFE
Name of project	Restoration and sustainable management of Imperial Eagle’s foraging habitats in key Natura 2000 sites in Bulgaria (LIFE14 NAT/BG/001119) - http://www.landforlife.org/

¹⁰²⁴ Rural Development Programme 2007-2013

¹⁰²⁵ ESENIA

Status	Completed, 2015 – 2020
Beneficiary	NGO - Bulgarian Society for the Protection of Birds
Aim of the project, measures and results	<p>The project focused on reducing the degradation and ultimate loss of natural habitats in terms of managing Imperial Eagle's foraging habitats. Measures and results:</p> <ul style="list-style-type: none"> - Developed and tested sustainable land-management models within the key grassland habitats; - Restored 250 ha of tilled grasslands; - Restored 550 ha of overgrown grasslands; - Sustainably managed 1400 ha of grasslands through natural grazing of sheep, cattle and horses; - Local farmers trained in sustainable grassland management in areas with breeding Imperial Eagles; - Improved Imperial Eagles foraging habitats; - 600 planted trees; - 40 artificial nests installed in suitable habitats; - Developed and endorsed National Action Plan for Conservation of European Soudlik.

Programme/funding	LIFE
Name of project	Safe Ground Redbreasts - Conservation of the wintering population of the globally threatened red-breasted goose (<i>Branta ruficollis</i>) in Bulgaria; LIFE09 NAT/BG/000230 - http://bspb-redbreasts.org/
Status	Completed, 2010 – 2015
Beneficiary	NGO - Bulgarian Society for the Protection of Birds
Aim of the project, measures and results	<p>The project aimed at reducing and preventing threats for the red-breasted goose (<i>Branta ruficollis</i>) - in Dobrudzha region, Bulgaria by the development of land management that ensures appropriate foraging habitat for the species and safe roosting grounds.</p> <p>Project results:</p> <p>The beneficiary (BSPB) caught 150 red-breasted geese to record individual data from rings, and equipped 22 of them with GPS transmitters. This produced 10 bird months of tracking data, covering the birds' movement during migration and their foraging behavior. Maps were produced in order to visualize roosting sites and foraging areas and the ecological corridors between them. Subsequently, a national agri-environmental scheme focusing on the red-breasted goose was developed and included in the National Rural Development Programme (NRDP). In the first half of 2015, 240 farmers had already applied for this goose-friendly agri-environmental scheme.</p> <p>Extensive consultation work with local farmers and hunting and fishing communities reduced the disturbance and direct killing of red-breasted geese to practically zero. For example, new fishing areas were opened, to reduce bird disturbance in key areas in a Natura 2000 site, while a patrol scheme was introduced to prevent illegal shooting and disturbance around Shabla and Durankulak lakes. The project produced management prescriptions which were incorporated into the revised National Species Action Plan, in accordance with the regulations of the Ministry of the Environment and Water (MoEW).</p>

Target 5

Programme/funding	LIFE
Name of project	LIFE IAS Free Habitats - Collaborative management for conservation of forest and grassland habitats negatively affected by IAS in Bulgaria; LIFE16 NAT/BG/000856 - https://invasiveplants.eu/
Status	In progress, 2017 – ongoing
Beneficiary	NGO - The Information and Nature Conservation Foundation (INCF)

Aim of the project, measures and results	<ul style="list-style-type: none"> - Improve the conservation status of priority forest habitat, endemic forests with <i>Juniperus</i> spp (9560*), via a dedicated set of conservation measures; - Remove IAS and maintain the conservation status of priority forest habitat, Tilio-Acerion forests of slopes, screes and ravines (9180*); - Improve the conservation status of mesophile grasslands (6510); - Enhance knowledge and experience of stakeholders and land managers for the management and control of IAS in Natura 2000 network sites; - Expand institutional and stakeholder capacity for managing targeted habitats within Natura 2000 network sites (e.g. national and regional authorities, site managers, landowners); and - Promote inter-institutional collaboration between stakeholders and authorities at regional and national levels.
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Evidence of successful implementation of focus targets

Target 1

Next to the successful LIFE projects, described above, the implementation of two other projects have significant importance for the progress towards Target 1 of the Biodiversity Strategy to 2020:

- DIR-59318-2-3 "Development and implementation of an information system for protected areas of ecological network NATURA 2000", carried out under the Operational Program Environment 2007-2013. This project set out a unified information system for the Natura 2000 protected areas.
- BG16M10P002-3.003-0001 "Analyses and research of species and natural habitats, subject to reporting under Art. 17 of the Habitats Directive and Art. 12 of the Birds Directive" under the Operational Program Environment 2014-2020, priority axis "Natura 2000 and Biodiversity"¹⁰²⁶. The project has been implemented by the Executive Environmental Agency and aimed to provide information for the regular MS reporting under the two nature Directives¹⁰²⁷.

Implemented and contracted (still ongoing) are a number of projects and measures directly aimed at conservation and restoration of species and habitats under Nature Directives (e.g. development of **management plans** and **action plans for species**, scientific research, improvements in the National Biodiversity Monitoring System, promotion of nature conservation and the Natura 2000 network, etc.).

As result of these projects:

- Changes have been made to the standard forms of protected areas for habitats 91E0 and 9180 and 2 species (*Sabanejewia aurata* and *Cottus gobio*);
- 2 action plans have been developed for species from the Annexes of the Habitats Directive that are currently being adopted - for the Wolf (*Canis lupus*) and for the European ground squirrel (*Spermophilus citellus*);
- The development of an action plan for the Northern Crested Newt (*Triturus cristatus*) has been commissioned;
- Terms of reference for the development of action plans for another 15 animal and 5 plant species from Annexes 2 and 4 of the Habitats Directive have been approved.

In respect to Birds Directive:

- 10 action plans for the protection of birds have been adopted, among which for *Aquila heliaca*, *Falco cherrug*, *Aythya nyroca*, *Phalacrocorax pygmaeus*, *Branta ruficollis*, etc.;

¹⁰²⁶ http://eea.government.bg/bg/opos_2014-2020/opos_os3

¹⁰²⁷ Stakeholder survey results

- 7 more action plans have been developed that are in the process of adoption, among them action plan for the Griffon Vulture (*Gyps fulvus*), Bearded Vulture (*Gypaetus barbatus*), Lesser Kestrel (*Falco naumanni*), Lesser Spotted Eagle (*Clanga pomarina*), etc.;
- Two more action plans for conservation have been assigned for development;
- Terms of reference for the development of action plans for another 17 bird species have been approved.

Several other achievements can be mentioned as evidence of successful implementation of Target 1:

- Increase in the average numbers of chamois (*Rupicapra rupicapra*), a species from Annex II of the Habitats Directive¹⁰²⁸;
- The return of the griffon vultures (*Gyps fulvus*) as nesting species in Bulgaria¹⁰²⁹. The species is considered Least Concern (IUCN), listed in Annex II of the CITES Convention, Annex II of the Bern Convention, Annex II of the Bonn Convention, European Conservation status: SPEC 1w, Annex I of the Birds Directive. In Bulgaria it is considered Endangered. It is also listed in Annex II and III of the Bulgarian Biodiversity Act;
- In 2018 the Court of Justice of the EU issued a decision that in Bulgaria in the Rila mountain no sufficient territories are designated for the protection of 17 bird species. As a consequence, in 2019 The Council of Ministers designated two new protected areas in Rila mountain - for the protection of wild birds - BG BG0002129 Rila buffer and for natural habitats and wild flora and fauna - BG0000636 Low Rila. With the adoption of these the new protected areas, Bulgaria has fulfilled its commitments in response to the Court of Justice decision, as well as inquiries from DG Environment regarding deficiencies in the Natura 2000 network under the Habitats Directive for the Brown bear (*Ursus arctos*) and the European bullhead (*Cottus gobio*).
- Averting the threat of construction of a large tourist complex on the dunes of Kamchiya SCI, BG0000116, which national protection status was canceled with a decision of the Supreme Administrative Court¹⁰³⁰.

Target 3A

Under the Rural Development Programme 2014-2020¹⁰³¹ (RDP), Measure 10: "Agroecology and Climate" includes a number of activities for which compensation is envisaged in regard to prohibitions (e.g. mowing meadows, use of non-selective pesticides in agriculture, removal of landscape features, etc). Among these activities are: Restoration and maintenance of permanent grassland of High Nature Value; Maintenance of habitats of wintering geese species and meadow harrier in arable land of ornithological importance; Maintenance of habitats of the eastern imperial eagle and the Egyptian vulture in arable land of ornithological importance; Soil erosion control; Traditional practices for seasonal grazing (pastoralism), Conservation of endangered agriculturally-valuable local breeds; Conservation of endangered indigenous plant varieties of value to the agriculture.

The largest number of applications under this measure were for the 'Endangered local breeds' and 'Soil erosion control'. In 2018 the applications for compensations for these actions were 34.5% and 32% of all beneficiaries respectively¹⁰³².

- It should be noted as a positive trend that during the period 2015-2017 the indicator "Change in the number of wintering waterfowl" showed an increase;

¹⁰²⁸ <http://eea.government.bg/bg/soer/2017/biodiversity-nem/promyana-v-chislenostta-i-sastoyanie-na-populatsiyata-na-beliya-shtarkel-v-balgariya-pri-sedmoto-mezhdunarodno-prebroyavane-2014-2013-2015-g>

¹⁰²⁹ <https://greenbalkans.org/natura2000/newhorizons/bg/Beloglav-leshoyad.p598>

¹⁰³⁰ http://natura2000.moew.government.bg/PublicDownloads/Auto/PS_SCI/BG0000116/BG0000116_PS_14.pdf

¹⁰³¹ Rural Development Programme 2014-2020. [RDP 2014-2020](#)

¹⁰³² Ministry of Environment and Water. [Sixth National Report 2014-2018 to the Convention on Biological Diversity](#)

- Another positive trend observed is the increase of the area occupied by organic farming - in 2017 Bulgaria reported an area of 136,618 ha occupied by organic farming, compared to 2007 - 13,646 ha, or a tenfold increase¹⁰³³.

Increasing knowledge, skills and capacity building (including financial capacity) of beneficiaries (e.g. farmers, local smart-ups, local communities - hunters, fishermen, shepherds) in the management of biodiversity is crucial to halt biodiversity loss, conserve and restore ecosystems, and prevent IAS, illegal hunting and logging, etc. to achieve this target of Biodiversity Strategy. In this respect a few achievements could be mentioned:

- Since 2004, Bulgaria joined the Slow Food Foundation¹⁰³⁴ that supports local communities in sustainable use of agro biodiversity through preserving local breeds, plant species and traditional food products;
- Implementation of 5-year scientific research and innovation infrastructure in Agriculture and Foods project (RINA1035) has started in 2018-2023, coordinated by the Agricultural Academy;
- Implementation of the project "Promoting Citizens' Initiatives for Sustainable Development and Biodiversity Conservation in Mountain Meadows and Pastures by Controlling Bracken", coordinated by the Association Centre for Regional Development and Initiatives, aiming to increase knowledge and awareness of local communities about environmentally-friendly ways to restore and maintain biodiversity of meadows and pastures and composting bracken¹⁰³⁶;
- The National Agricultural Advisory Service provides free consultations and training to farmers. Between 2014 and 2018 under the RDP Measure 10 "Agroecology and Climate" 4927 consultations were provided to beneficiaries, while under Measure 11 "Organic Farming" - 7262 consultations¹⁰³⁷.

The most integral and positive impact in regard to target 3A of the Strategy can be seen in the implementation of projects under the LIFE programme, described above.

Target 5

With regard to Target 5 of the Biodiversity Strategy to 2020, at national level, the routes of entry of IAS have been determined and prioritised, scientific papers have been published, working groups have been established, etc. In the frame of the program BG03 "Biodiversity and Ecosystem Services" of the Financial Mechanism of the European Economic Area, 2009-2014, the Executive Environmental Agency implemented a project: BG03.PDP1 "Improving the Bulgarian Biodiversity Information System" (IBBIS)¹⁰³⁸. Under activity 3 of the project, a **module for data collection and risk assessment of invasive alien species in Bulgaria was established**, which aims to ensure compatibility and cooperation with the Network for Invasive Species in Southeast Europe¹⁰³⁹, as well as with other international, European and regional databases, such as EASIN, NOBANIS, DIAS, EU COST Actions on IAS for the purpose of data exchange, adaptation of common standards and methodologies. Also, in 2017 under ESENIAS project, a guide to invasive alien species of European Union concern has been published by the Institute of Biodiversity and Ecosystem Research at Bulgarian Academy of Science and ESENIAS¹⁰⁴⁰. The guide contains original data

¹⁰³³ Eurostat, 2017. [Organic farming statistics](#)

¹⁰³⁴ <http://www.slowfood-bg.com/>

¹⁰³⁵ <https://www.agriacad.bg/en/science-and-education/projects>

¹⁰³⁶ Ministry of Environment and Water. [Sixth National Report 2014-2018 to the Convention on Biological Diversity](#)

¹⁰³⁷ Agrarian University - Plovdiv (2020) *Preparation of analysis of the influence of agriculture on the environment and climate change, Annex № 1: Contribution of the analysis of the results and impact of the CAP 2014-2020 to the SWOT analysis.*

¹⁰³⁸ <http://eea.government.bg/bg/ibbis/nachalo>

¹⁰³⁹ ESENIAS. www.esenias.org

¹⁰⁴⁰ Trichkova, T., Vladimirov, V., Tomov, R., Todorov, M. (eds.) (2017) [Guide to invasive alien species of European Union concern: IBER-BAS, ESENIAS, Sofia.](#)

from Bulgaria for 37 species included in the first list of IAS of EU concern to the Regulation adopted in 2016. The list includes 14 plants, 7 invertebrates and 16 vertebrates (2 fish, 1 amphibian, 1 reptile, 3 bird and 9 mammal species).

Evidence of unsuccessful implementation of focus targets

Target 1

The terrestrial part of the Natura 2000 network for birds can be considered completed. Concerning the protected areas under the Habitats Directive and issuing their orders for **adoption of specific objectives and requirements** for their protection shows a considerable delay, which is a non-fulfilment of the Bulgarian and European legislation.

Another example of unsuccessful implementation is the failure to adopt the management plan for the Natura 2000 protected area "Kaliakra Complex" due to **conflicts between stakeholders** - property owners, representatives of environmental organisations, the scientific community, industry organizations and experts from the MoEW.

The Audit report "Efficiency of the management of Natura 2000 network for protection of the environment and local communities"¹⁰⁴¹, prepared in 2019 have found some gaps in the implementation of the Nature Directives, which might create a serious **risk for future expenditure of public financial resources** due to non-fulfilment of EU policy objectives (2019). More specifically, the goals of the NATURA network defined in the Biodiversity Act are **not linked to economic development and achieving of sustainable development**, as set out in both directives.

Further to this, the Ministry of Environment and Water (MoEW) expresses the need for **establishing an effective mechanism for managing the NATURA 2000 network**, the need for **improvement of the legal framework**, as well as setting out **clear division of responsibilities between central and regional authorities**. A new approach for managing the Natura 2000 network in Bulgaria has been developed in 2017. According to this approach, the network will be managed through development of territorial plans covering the entire territory of protected areas. The development of 16 regional plans is forthcoming, one for the territory of each local Regional Inspectorate of Environment and Waters¹⁰⁴². The managing approach is proposed as part of the amendments to the Biodiversity Act, which currently still awaits approval.

A representative from the NGO conservation community expressed an opinion in the survey that EU funds allocated for nature conservation are spent in a wasteful way. The NGOs have also informed the EC on the issue of **lack of efficiency and "even harmful measures"**, insisting on implementing result-oriented measures.¹⁰⁴³

Target 3A

In the period 2007 to 2016, the agriculture areas with **high and medium intensity** in Bulgaria increased significantly - from 220 to 275 thousand ha and from 350 to 1 841 thousand ha, respectively. This trend

¹⁰⁴¹ Bulgarian National Audit Office (2019). "Efficiency of the management of Natura 2000 network for protection of the environment and local communities" for the period from 01.01.2016 to 31.12.2018, Sofia.

¹⁰⁴² Ministry of Environment and Water, Bulgaria (2019) [National prioritised action framework \(NPAF\) for Natura 2000 Bulgaria](#).

¹⁰⁴³ For the Nature. ["How EU money for Natura 2000 in Bulgaria were wasted"](#).

is associated with higher amounts of agricultural investment (fertilizers, pesticides and feed/fodder) per hectare of agricultural land.

For the period 2005-2017 the decrease in bird species inhabiting farmlands continues. The 27% decline over this period has been slightly less than the 32% decline at EU level¹⁰⁴⁴.

The **Rural Development Programme** in Bulgaria includes a measure, titled "Pastoralism in National Parks", which provides subsidies for grazing cattle in parks. Current actions within this measure in Pirin National Park, also a Natura 2000 site under the Birds and Habitats Directives, resulted in cattle coming inside glacial lakes, causing bank erosion and eutrophication. While the real problem was associated with the lack of control over the number of animals and the grazing locations, the MoEW tackled the consequences by limiting the access of cattle to the banks of the lakes through installing electric fencing. This however created another problem as electric fencing around the lakes disrupts the landscape and prevents the access of wildlife to the lakes¹⁰⁴⁵.

Target 5

Bulgaria has a relatively moderate number of dangerous Invasive Alien Species compared to north-western EU countries, (e.g. BE, DE, NL, FR), however the threat from them requires timely measures against their spread, particularly in forests where there is risk of genetic contamination of native species¹⁰⁴⁶. Experts and authorities also report challenges in removal and control of invasive species in the waterways due to the species mobility and the lack of sufficient human and finance resources¹⁰⁴⁷.

The Environmental Implementation Review (2019)¹⁰⁴⁸ has outlined the need to improve surveillance systems and data collection for Invasive Alien Species. Recently, there was a proposal to develop a stand-alone Strategy for IAS, however it was decided to be part of the forthcoming Biodiversity Strategy, which is now in preparation.

Unexpected or unintended consequences of implementing focus targets

No specific points could be presented by the surveyed stakeholders as unexpected or unintended consequences of implementing focus targets of the Strategy. Perhaps, as one such issue can be noted the fact that **Natura 2000 network is still not well understood**, and therefore, not perceived as a helpful instrument by a big part of the society. Instead, many people especially farmers, fishermen and small businesses are negative about it and see it just as an obstacle for their livelihood.

Another example is that as a result of the large coverage of the Natura 2000 network, no GMO production can actually happen in the country, an idea, supported by the majority of Bulgarians. In 2010 a large public campaign attempted to prevent legal changes in the GMO Act allowing for GMO production. An opinion poll at the time showed that 91% of Bulgarians oppose this. As an EU member Bulgaria could not ban this type of production, but an exception was set for Natura 2000 sites and a buffer around them, which has practically made it impossible to grow GMO crops.

¹⁰⁴⁴ Executive Environment Agency, Bulgaria (2020). [National report on the state and protection of the environment in the Republic of Bulgaria for 2018, Sofia.](#)

¹⁰⁴⁵ Stakeholder survey results

¹⁰⁴⁶ Agrarian University - Plovdiv (2020). *Preparation of analysis of the influence of agriculture on the environment and climate change*

¹⁰⁴⁷ Interviewee opinion

¹⁰⁴⁸ European Commission (2019). [The Environmental Implementation Review 2019 - Country report for Bulgaria.](#)

Key factors which have contributed to achieving objectives

Three main factors could be described as contributing to fulfilling the Biodiversity Strategy objectives:

1. **EU legislation** - The existing EU rules and the control mechanisms of the EC are largely seen as a driver for success. A major factor in implementing biodiversity conservation policies in Bulgaria is the pressure exerted by the European Commission.
2. **Actions of nature conservation NGOs** - In connection to the above, the nature conservation NGOs in Bulgaria are very active and help to control cases of breach of EU rules or inadequate governmental decisions.
3. **EU funding** - another key factor is of course the available EU funding and the many possibilities it provides for implementing measures and taking actions towards achieving the Strategy targets. The efficient use of the funding however is another aspect, which is separately considered.

A further factor benefiting achievement of objectives has been **cooperation between different stakeholders** during project implementation, including transboundary cooperation¹⁰⁴⁹.

Key factors which have hindered the achievement of objectives

A general challenge relates to difficulties in communication and coordination- the improvement reached at national level is still not comprehensively presented at regional and local level¹⁰⁵⁰. In this respect, it has been pointed out by the surveyed stakeholders, that there is a **need for improved involvement of the stakeholders in the phase of Strategy implementation**.

Target 1

Lack of established organization for collecting primary and aggregated data on the indicators set out in the NPAF 2014-2020, which hinders the evaluation of the progress of adopted measures and actions. In addition, no interim evaluation and interim reports have been prepared for the implementation of the NPAF. Currently, the updated NPAF for Natura has been drafted and is in the process of public discussion. In connection to the above, internal procedures for publication of information and documentation in the NATURA 2000 information system is lacking¹⁰⁵¹.

In the designated protected areas, there is preventive control carried out through the procedure for compatibility assessments of plans, programs, projects and investment proposals with the objectives of Natura 2000, which is regulated in the Biodiversity Act. Therefore, for the areas currently lacking orders for objectives and protection, there is a risk of deterioration in their ecological status and state of biodiversity.

Changes in evaluation methodology with respect to the reporting format approved by the EC in November 2016, mean that the results of the last two reporting periods 2007-2012 and 2013-2018 cannot be directly compared and conclusions relating to the achievement of targets are difficult to draw¹⁰⁵².

Most of the protected areas are non-compact, completely or partially overlapping under the two Directives, national protected areas and also include settlements. These specifics of the protected areas

¹⁰⁴⁹ Stakeholder survey results

¹⁰⁵⁰ Stakeholder survey results

¹⁰⁵¹ Bulgarian National Audit Office (2019). *"Efficiency of the management of Natura 2000 network for protection of the environment and local communities" for the period from 01.01.2016 to 31.12.2018*, Sofia

¹⁰⁵² Stakeholder survey results

in Bulgaria, including their large area, the provisions of the national legal framework and the insufficient administrative capacity led to issues in the implementation of the Nature Directives and national legislation for Natura 2000 and respectively in the full implementation of Target 1 of the Biodiversity Strategy to 2020¹⁰⁵³.

The large percentage of the country's area being in the scope of Natura 2000 and the related restrictions and regimes for carrying out activities in the respective territories further complicates the administration in managing the network and achieving a balance between biodiversity conservation policy and other sectoral policies in the country¹⁰⁵⁴.

Two other interrelated issues hinder the achievement of the objectives of the Biodiversity Strategy - public procurement, which often lacks sufficient transparency, on the one hand, and appeal procedures as a result of such procurement, on the other hand. Appeal procedures take a very long time, which can lead to non-compliance with project deadlines and a lack of time to provide quality data. Such an example is the last reporting period, which started with a huge delay¹⁰⁵⁵.

A further problem is the conflict between the Biodiversity Strategy targets and the government's transport policy - in particular the building of Strouma Motorway and the EU Funding for the motorway passing through the Kresna Gorge, one of the richest biodiversity areas in Bulgaria. Despite an EIA and Compatibility Assessment decision from 2008 to move the motorway out of the gorge as a mitigation measure, the government decided to change the decision and leave the traffic in one direction passing through the gorge. Here, also the lack of action on behalf of the EU was seen as a contributing factor to not resolving this issue¹⁰⁵⁶.

Target 3A

About 1/3 of the territory of the protected areas in the Natura 2000 network is occupied by agricultural lands, most of which are permanent pastures. The main mechanism for their protection is the introduction of a ban on afforestation of pastures and meadows, as well as their ploughing and conversion into arable land and permanent crops. Bulgaria has designated only 22 out of 229 Sites of Community Importance as Special Areas of Conservation for which the six-year deadline for issuing orders with specific objectives, restrictions and prohibitions on activities has expired. The lack of issued orders for these areas might pose a risk for damage or destruction of habitats (e.g. due to investment projects) and as well limit the possibility of the property owners to obtain compensatory payments envisaged in the legislation for lost profits and incurred expenses for these territories.

In regards to this target, there is a gap in the legislation, and hence lack of coordination between the responsible authorities (the Ministry of Environment and Water and the Ministry of Agriculture, Food and Forestry). As a consequence, the placement of permanent crops may be permitted in protected areas.

¹⁰⁵³ Stakeholder survey results

¹⁰⁵⁴ Stakeholder survey results

¹⁰⁵⁵ Interviewee opinion

¹⁰⁵⁶ Stakeholder survey results

Target 5

Although Bulgaria has made advances in achieving target 5 of the Strategy, the identification of IAS is still not recognised as a priority, which brings about reduced control¹⁰⁵⁷. An expert from the Bulgarian Academy of Science also expressed the opinion that while the early warning of presence of IAS might be considered more advanced, the quick response to handling the species is a challenge, because currently there is no clear division of responsibilities and sound procedure in case of registering an invasive alien species.

Another issue to be noted is the **strict expertise needed** for managing the IAS and the **lack of capacity in the regional structures** of the Ministry of Environment and Water - RIEWs, currently managing the actions related to IAS.

7.2.2 Efficiency

Key evidence on the cost efficiency of the Biodiversity Strategy as a whole

In Bulgaria, what is publicly available, is the information on Natura 2000 and biodiversity costs allocated in the Operational Programme Environment (OPE) 2014 - 2020¹⁰⁵⁸. It should be noted that in 2020 about EUR 35 mln. were transferred for fighting Covid-19 economic consequences.

Key evidence of costs

Evidence relating to Target 1

For implementing measures under the budget of the National Priority Action Framework for NATURA 2000 for the period 2014-2020, 1 584 636 583 EUR were envisaged. The OPE 2014-2020 envisaged financing of 33 measures under 5 priorities and 18 sub-priorities in the amount of EUR 101 382 203. For the implementation of the 33 measures (part of the NPAF for Natura 2000) in the Priority Axis 3 of OPE 2014-2020, activities were set for the amount of EUR 86 181 500, of which EUR 15 300 000 for the "Conservation and enhancement of biological diversity, nature protection and environmentally friendly infrastructure" and EUR 70 881 500 for the "Conservation, restoration and sustainable use of NATURA 2000 sites". The funds actually paid for the implementation of the NPAF with financing under OPE 2014-2020 amounted to EUR 4 616 041 or BGN 9 028 191¹⁰⁵⁹. For the period 2016-2018, 881 scheduled inspections in Natura protected areas were carried out by the 16 RIEWs, which is 98% of planned inspections. Another 546 occasional/emergency inspections were carried out in the same period.

Evidence relating to Target 3A

The Rural Development Program (RDP) 2014-2020¹⁰⁶⁰ was set to finance 34 measures under 5 priorities and 15 sub-priorities in the amount of EUR 1 172 878 259. One of the three objectives of the RDP is "Ecosystem protection and sustainable management, use of natural resources in agriculture, forestry and the food industry, climate change prevention and adaptation" is relevant to the management of NATURA 2000. The measure 12 under RDP - "Payments under NATURA 2000 and the Water Framework Directive" supports the measures of the NPAF. The measure has a budget of EUR 139 676 037 and is intended to compensate the beneficiaries for additional costs or lost income. The actual funds paid under this

¹⁰⁵⁷ Stakeholder survey results

¹⁰⁵⁸ Operational Programme Environment 2014-2020. [OPE 2014-2020](#)

¹⁰⁵⁹ Bulgarian National Audit Office (2019). "Efficiency of the management of Natura 2000 network for protection of the environment and local communities" for the period from 01.01.2016 to 31.12.2018, Sofia

¹⁰⁶⁰ Rural Development Programme 2014-2020. [RDP 2014-2020](#)

measure amount to EUR 69 857 737 (BGN 136 629 858), or 66% of the planned budget under this Measure, and it concerns 404 937 ha, for which compensatory payments have been applied¹⁰⁶¹.

Evidence relating to Target 5

In terms of **efficiency**, the approach to combat IAS has to be **prevention, in order to reduce long term management costs**. Managing the IAS which have entered the water bodies needs a huge resource, both human and financial, which is difficult to devote. No national funds are available for maintaining the waters free of invasive species¹⁰⁶².

Evidence of socioeconomic impacts

A number of projects implemented in the country in terms of nature conservation and biodiversity on the one hand aim to improve the conservation of important conservation species and habitats (Target 1), and on the other hand have positive socio-economic effects on the local population, especially in the less economically developed regions of the country, where there is a demographic collapse in the settlements located in them. In this way, the implementation of the Birds and Habitats Directives but also the implementation of the other targets of Biodiversity Strategy to 2020 are supported, while at the same local economy is enhanced by supporting local communities and social cohesion through e.g. organic production, bee-keeping, development of local/regionally branded products, rural tourism, etc. Bulgaria is one of the more sparsely populated countries in the EU and the combination of preserved nature and lower living costs has attracted foreigners in villages, which has helped to revive them^{1063 1064}.

One of the best examples is the four-year Bulgarian-Swiss project (2012 - 2016) "For the Balkans and the People"¹⁰⁶⁵ that won the Natura 2000 award of the EC for 2016 in the category "Socio-economic benefits". The project was funded by the Bulgarian-Swiss Cooperation Program and was implemented in partnership by four Swiss and six Bulgarian partners in nine Natura 2000 sites. The project partnership proves that local development and nature conservation can co-exist without conflict and contribute to improving the quality of life in rural areas and especially in North-western Bulgaria, which remains one of the poorest regions in Europe. The project achieved important results, among which: improved National regulations in terms of direct sale of food of animal origin; established 8 environmentally friendly business models of entrepreneurs which brought increase in revenue by over 20%; established the first public web-based information system for rare local breeds containing information on 112 405 animals from 33 breeds; developed 5 payment schemes for ecosystem services; improved administrative capacity for management of protected areas in Bulgaria, etc.

Further evidence for socio-economic benefits and impacts is set out in the results of the projects implemented under LIFE programme, described above.

7.2.3 Coherence

¹⁰⁶¹ Bulgarian National Audit Office (2019). *"Efficiency of the management of Natura 2000 network for protection of the environment and local communities" for the period from 01.01.2016 to 31.12.2018*, Sofia

¹⁰⁶² Interviewee opinion

¹⁰⁶³ Stakeholder survey results

¹⁰⁶⁴ Interviews results

¹⁰⁶⁵ ["For the Balkans and the People"](#)

Coherence with the EU 2020 Strategy

All strategic plans developed under the relevant national policies for Bulgaria are subject to environmental assessment (EIAs) and compatibility assessment with Natura 2000 objectives procedures, which in principle should take into account the objectives of the strategy.

Coherence with EU Sectoral Policies

Appropriate policies, by outlining the relevant measures in Bulgaria, are embedded in many regulatory and strategic documents, such as:

- River Basin Management Plans (RBMPs), including the issued environmental assessment opinions for them;
- Flood Risk Management Plans (RMPs) and the issued opinion on Ecological assessments;
- Marine Strategy of the Republic of Bulgaria and the program of measures (PoM) to it for maintaining or achieving good status of the marine environment developed in accordance with Article 13 of the Marine Strategy Framework Directive 2008/56/EC;
- Law on the Black Sea Coast Management;
- National Prioritised Action Framework for NATURA 2000 (NPAF) 2014-2020;
- National Forest Development Strategy for Bulgaria 2013 - 2020;
- National Strategy for Environment 2009 - 2018;
- Draft Strategy for sustainable use of the black sea coastal ecosystems;
- National Development Program: Bulgaria 2020;
- Forest Management Plans and programs prepared under Art. 9 and Art. 13 of the Forest Act;
- Program of measures for adaptation of forests in the Republic of Bulgaria to climate change by areas of vulnerability;
- National action plan for conservation of wetlands of high significance in Bulgaria, 2013-2022;
- National Action Plans for some of the target species under the Birds Directive;
- National Action Plans for some of the target species under the Habitats Directive;
- Compensatory mechanisms introduced related to the use of agricultural land from the "Rural Development Program for the period 2007-2013" - measure 213 - "Natura 2000 payments" and measure 214 "Agri-environmental payments", re-adapted respectively to measure 12 and measure 10 of the RDP 2014-2020;
- The National Standards for Good Agricultural and Environmental Condition, layer "Permanently grassed areas", developed by the Ministry of Agriculture and Food annually since 2014;
- etc.

Coherence with international biodiversity commitments

No concrete evidence could be provided on this issue

Coherence of EU Biodiversity Strategy

No concrete evidence could be provided on this issue

7.2.4 Relevance

Relevance of EU Biodiversity Strategy

The stakeholder's opinion on the relevance of the EU Biodiversity Strategy is quite explicit and unambiguous - the Strategy is the **right instrument to halt the biodiversity loss** as it covers most of the

critical aspects related to conservation of biological diversity. However, better mainstreaming and integrating biodiversity conservation into other sectoral policies, especially to that aimed primarily at stimulating economic growth, would have increased the relevance to stakeholders¹⁰⁶⁶.

Relevance to stakeholder needs

Based on opinion expressed by the surveyed stakeholders, there is no sufficient data and publicly accessible information to understand the national progress towards the objectives of the EU Biodiversity Strategy. Another stakeholder stated that the mechanisms to encourage the creation of "green jobs" are not well covered and clear.

A fundamental need in general in the field of nature conservation is to educate youth - to enhance knowledge in conservation practices, which could lead to desirable behaviour, which is lacking currently¹⁰⁶⁷. In connection to this, citizen science in Bulgaria is not well developed, the participation of citizens and civil society organizations in the process of decision-making is a challenge.

Relevance of EU Biodiversity Strategy to MS biodiversity needs

The common opinion of the surveyed stakeholders is that the main needs related to biodiversity and the priorities in the sector **remain relevant**. As a main disadvantage, stakeholders pointed out that the Strategy is not legally-binding and does not affect specific characteristics of biodiversity at MSs national level. (survey results). As a consequence, no action plan has been adopted with concrete measures - measurable, feasible and controllable for each of the 6 targets. A surveyed stakeholder expressed a strong opinion that the freshwater ecosystems are under enormous pressure and that the EU Biodiversity strategy has not brought enough attention for this serious matter.

One suggestion regarding measures that could be improved to address breaches of the Nature Directives relates to the possibility of stakeholders directly approaching the Commission to launch an appeal procedure. While this mechanism is mainly found to be effective, some stakeholders stated that the EU response is often slow and there is often "lack of action"¹⁰⁶⁸.

One issue that should be noted is the proposed amendments in the legislation regulating Natura 2000 (Biodiversity Act). The amendments envisage exclusion of scientists and experts from the processes of Natura 2000 governance. If accepted, this could pose a risk for the nature protection and management in the country. Position papers from NGOs, National Natural History Museum at the Bulgarian Academy of Science and the Forestry University had strong opposing reaction to these amendments¹⁰⁶⁹.

7.2.5 EU added-value

Nearly all of the surveyed stakeholders expressed the opinion that the most likely consequences of stopping or withdrawing existing EU intervention would be a marked negative impact on the identification of common nature conservation objectives, priorities and management actions, the exchange of experience and best practices, consequently, the joint work of Member States on the conservation of

¹⁰⁶⁶ Stakeholder survey results

¹⁰⁶⁷ Interviewee opinion

¹⁰⁶⁸ Stakeholder survey results

¹⁰⁶⁹ [Bill amending and supplementing the Biodiversity Act](#)

habitats and species, etc. This would inevitably lead to the loss of biodiversity and the deterioration of important ecosystem services¹⁰⁷⁰.

Evidence of additional benefits compared to MS action

Cross-border cooperation, harmonisation of research methodologies and unification of monitoring programmes at regional level, exchange of best practices are viewed as additional benefits compared to MS action¹⁰⁷¹.

Evidence of change in MS ambition and/or commitments due to Biodiversity Strategy

Overall, taking into account the results from the stakeholder's survey, the opinions of the interviewed experts and the analysed evidence for implementation of Biodiversity Strategy targets it can be concluded that for Bulgaria, the EU Biodiversity Strategy to 2020 did not impact the country's ambition and commitments in the field of biodiversity conservation.

Evidence of change in sectoral ambition due to Biodiversity Strategy

No concrete evidence could be provided on this issue.

7.3 Conclusions

Target 1

To reach an effective management for Natura 2000 protected areas, Bulgaria needs improvement of the legal framework, clear division of responsibilities between central and regional authorities, as well as strengthening of the monitoring and control on the implementation of the National Prioritised Action Framework (NPAF) for Natura 2000. The lack of appropriate instrument for evaluating the effectiveness of actions for Natura 2000 management could pose a risk for the loss of biodiversity and failure to achieve the objectives of the NATURA 2000 network for conservation and sustainable use of biodiversity.

Further to this, it is recognised that the funds are not efficiently spent, part of that being result of insufficient capacity and part due to corruption practices. Often, the initiated appealing procedures due to incorrect public tender procedures (usually initiated by nature conservation NGOs) are an impediment for timely and quality implementation of the envisaged projects, and consequently to loss of funding. Moreover, lack of sufficient transparency and accountability of the spent public resource and the achieved results is noticeable¹⁰⁷². As an alternative, it is proposed that the European Commission should insist on result-oriented instruments for implementation as in the case of the Environment Operational Programme¹⁰⁷³.

Target 3

Bulgaria is among the Member States with the largest loss of land with High Nature Value (> 0.2% of Utilised Agricultural Area) due to the intensification of agriculture. The areas with high and medium intensity (purchased investments of fertilizers, pesticides and fodder in Euro/ha) are growing. On the other hand, public support for biodiversity conservation and sustainable use of nature resources is insufficient, mainly due to ineffective environmental education and undeveloped traditions in this direction. Therefore, it is essential to maintain and support low- and medium-intensive agricultural practices and technologies in the country, to foster knowledge and skills of people applying these

¹⁰⁷⁰ Stakeholder survey results

¹⁰⁷¹ Stakeholder survey results

¹⁰⁷² Bulgarian National Audit Office (2019). "Efficiency of the management of Natura 2000 network for protection of the environment and local communities" for the period from 01.01.2016 to 31.12.2018, Sofia.

¹⁰⁷³ Stakeholder survey results

practices, and to continue implementing measures aimed to improve the conservation status of species and habitats of European importance in agricultural lands. Efforts need to be devoted to strengthening institutional capacity and cooperation between authorities, as well to improve coherence of policy implementation process.

Target 5

Although Bulgaria has made some advances in achieving Target 5 of the Biodiversity Strategy, the identification and control of IAS is still not widely recognised as a priority. Appropriate procedures need to be developed with clear responsibilities of the competent authorities and envisaged measures for prevention of IAS entering and distribution. In addition, targeted trainings should be carried out (1) among professionals - to enhance the control and prevention and (2) among the wider public, including youth - to limit the planting of proven invasive species near roads, parks, gardens, agricultural land. Continuation of the established international cooperation and mutual efforts to combat IAS with other MS.

8 Slovakia

8.1 Introduction

8.1.1 Overview of key biodiversity state, trends, pressures and drivers

The biodiversity identified in the country consists of **approximately 11,323 plant species** (including algae), **more than 28,800 animal species** (including invertebrates) and over 1,000 species of protozoa. In addition, there are a wide range of land and water habitats, although their natural distribution has been significantly altered by land use changes since the onset of intensive settlement. Partial monitoring of selected plant and animal species indicates that **most species suffer from a decrease in population size and area of distribution**, but many also a deteriorating conservation status, which is very often not favourable. As a result of the extensive use of natural resources, some plant and animal species are now extinct, and others have become rare or endangered. Of the total 3,124 species of higher plants, 1,135 are listed in the National Red List of Angiosperms and Gymnosperms. **Endangered species** comprise 45% of fish species (including lampreys), 100% of amphibian species, 100% of reptile species, 32% of bird species and 65% of mammal species.

Declining status trends have been recorded, in particular, for aquatic and wetland species (e.g., fish, amphibians, reptiles) and habitats that depend on regular mowing and grazing (e.g., *Spermatophytes*, *citellus*, order *Maculinea*, and some plant species). Halophyte habitats are the most endangered ones,

caused by the fall of groundwater level, abandonment of traditional management and secondary succession. The most favourable status is indicated for rocky habitats due to their inaccessibility, and forest habitats because of the relatively sensitive forest management on such sites.¹⁰⁷⁴

According to Slovakia's 2013-2018 Article 17 national report, 38 out of 101 assessed habitats are in favourable (38%), 51 in unfavourable-inadequate (51%) and 10 in unfavourable-bad (10%) condition. For 2 habitats (2%) the status could not be assessed. Species are doing significantly worse than habitats: Of 320 assessed species, only 75 are in favourable condition (23%), 172 in unfavourable-inadequate condition (54%), and 69 in unfavourable-bad condition (22%). Slovakia made significant improvements in understanding. Under the previous reporting, the status of 6 habitats and 62 species could not be assessed, while this national report showed only 2 habitats and 4 species respectively could not be assessed. Nonetheless, no significant change in conservation status was observable.¹⁰⁷⁵

According to 6NR reporting, the **most significant threats to biodiversity and associated trends** are:¹⁰⁷⁶

- habitat fragmentation caused by a significant increase in the construction of transport and also industrial infrastructure;
- reduction in the use of agricultural land, particularly regarding permanent grassland (meadows and pastures), resulting from a reduction in livestock farming and the unprofitability of agriculture, thereby putting habitats of rare species of flora and fauna at risk; pressures on arable land and production of big monocultures (esp. of those crops, which are useful for biomass and biofuels production), pressures raising also from the plantations of fast-growing trees, etc.;
- invasive species whose impact is increasing in intensity due to permanent changes caused by agricultural activity, forestry, rearing of farm animals, intensive construction of buildings, including transport infrastructure;
- acidification of soil and water;
- climate change and the higher incidence of extreme weather events (e.g., flooding, drought, wind storms);
- industrial pollution in spite of a significant reduction in atmospheric industrial pollutants in recent years;
- mineral extraction (e.g., natural gas, magnesite, wall stone, calcite);
- agricultural pollution, esp. in intensive agricultural areas and on the other side abandonment of agricultural land (where there is more extensive way of land management);
- forestry and pressures on forest land, intensified management of forest land and massive logging;
- tourism (several national parks are counted among the most endangered territories as a result of activities, such as mountain tourism), unbalanced pressures on some protected areas.

For the purpose of this study, a survey was sent out to the most relevant stakeholders in November 2020. 51 different institutions and 71 Departments of Nature Protection on the District offices were contacted (in total about 200 e-mail addresses). The number of answered surveys with sufficient and relevant answers was only 6, representing governmental/administrative bodies. No NGO replied unfortunately,

¹⁰⁷⁴ Ministry of Environment, (2019). The Sixth National Report on the implementation of the Convention on Biological Diversity in the Slovak Republic. Bratislava. Available at: <https://chm.cbd.int/database/record?documentID=246532>

¹⁰⁷⁵ EEA, (2020). Management effectiveness in the EU's Natura 2000 network of protected areas. European Environment Agency. Available at: <https://cmshare.eea.europa.eu/s/fPAH9bHrrkY6pc9>

¹⁰⁷⁶ Ministry of Environment, (2019). The Sixth National Report on the implementation of the Convention on Biological Diversity in the Slovak Republic. Bratislava. Available at: <https://chm.cbd.int/database/record?documentID=246532>

even they try to be very visible in the media. In addition, 3 interviews were carried out in January 2021 - with the member of European parliament, representative of the State Nature Conservancy of the Slovak Republic (ŠOP SR) and the representative of Slovak Water Management Enterprise (SVP).

8.1.2 Overview of the national biodiversity policy framework, governance and overall progress towards the EU and global 2020 biodiversity targets

The Convention on Biodiversity in the Slovak Republic is managed by the Ministry of the Environment, however, due to the wide range of topics covered by the Convention, its implementation requires cooperation of other ministries, especially the Ministry of Agriculture and Rural Development and the Ministry of Transport and Construction.

The implementation of activities resulting from the Action Plan for Implementation of Measures Resulting from the Updated National Strategy for Biodiversity Protection until 2020, mainly involves professional organizations of the Ministry of the Environment of the Slovak Republic - the State Nature Conservancy of the Slovak Republic and the Slovak Environment Agency.

The national biodiversity policy framework in Slovakia can be split to legal documents and strategic documents.

Main legal documents are:

- Act No. 543/2002 on Nature and Landscape Protection and the implementing regulation to this Act - the Ordinance No. 24/2003.
- Act No. 15/2005 on the Protection of Species of Wild Fauna and Flora by regulating trade therein and the implementing regulation to this Act - the Ordinance No. 110/2005.
- Act No. 150/2019 on the prevention and management of the introduction and spread of invasive alien species and the implementing regulations to this Act - the Ordinance No. 450/2019 and the Government Regulation No. 449/2019.
- Act No. 24/2006 on Environmental Impact Assessment and the implementing regulation to this Act - the Ordinance No. 113/2006.
- Act No. 39/2013 on Integrated Prevention and Control of Environmental Pollution and the implementing regulation to this Act - the Ordinance No. 11/2016.
 - Ordinances, which declare protected areas and monuments, e.g.: Ordinance No. 83/1993 on state nature reserves, Ordinance No. 293/1996, which publishes the list of protected areas and natural monuments and declares national natural monuments in the Slovak Republic, Ordinance No. 292/2001, which declares national natural monuments, Ordinance No. 17/2003, which establishes national nature reserves and publishes a list of nature reserves, etc.

Strategic documents at the level of the Government of the Slovak Republic are Updated National Strategy for Biodiversity Protection until 2020 (issued in 2014) and Action Plan for Implementation of Measures Resulting from the Updated National Strategy for Biodiversity Protection until 2020 (issued in 2014), Updated Wetland Care Programme of Slovakia until 2024 (issued in 2019) and Strategy for the Adaptation of the Slovak Republic to Climate Change - Update 2018. Within the Ministry of the Environment, it is primarily the Priority Action Framework for Financing Natura 2000 in the Slovak Republic for the EU Programming Period 2014 - 2020. At the same time, several strategic documents outside the Ministry of the Environment directly or indirectly related to nature and landscape protection are in force. In recent years, several new strategic documents have been added to them within the Ministry of the Environment, from which it sets out the vision and goals for effective nature and landscape protection, in particular Greener Slovakia - Strategy of the Environmental Policy of the Slovak Republic until 2030. A critical point

for the successful implementation of measures to improve nature and landscape protection is the lack of dialogue between all ministries and stakeholders, including municipalities and their associations, landowners, users and administrators, and academia as well.¹⁰⁷⁷

The table below presents the Slovak national legislation and policies related to the targets of the Updated National Strategy for the Protection of Biodiversity to 2020.¹⁰⁷⁸

Table 8-1 Slovakia biodiversity legislation and policy mapped to the EU Biodiversity Strategy to 2020

EU Biodiversity Strategy 2020	SK National targets and proposed measures	Related strategies/action plans/measures
National strategic target of the Slovak Republic to 2020:	Key target for 2020: Halt the loss of biodiversity and the degradation of ecosystems and their services in the SR by 2020, ensure the restoration of biodiversity and ecosystems in an appropriate extent and increase our contribution to averting the loss of biodiversity at the global level.	<ul style="list-style-type: none"> • Act No. 543/2002 on Nature and Landscape Protection • Ordinance No. 24/2003, implementing the Nature and Landscape Protection Act • Convention on Biological Diversity (1994) • Updated National Strategy for the Protection of Biodiversity until 2020 (2014) • Action plan for the implementation of measures resulting from the Updated National Strategy for the Protection of Biodiversity until 2020 (2014) • List of indicators for status and protection of biodiversity in Slovakia (updated in 2015) • Concept of nature and landscape protection 2006-2015 (updated for 2019 - 2030) • Priority Action Framework (2012, updated in 2013 and 2015) • Greener Slovakia - Strategy of the Environmental Policy of the SR until 2030 (so called Envirostrategy 2030) • National Forest Programme of the Slovak Republic (2007) • Action Plan of the National Forest Programme for 2015-2020 (2015) • Strategy for the Adaptation of the Slovak Republic to Climate Change - Update 2018 • KIMS - Complex information and monitoring system (http://www.biomonitoring.sk/) • National geoportal (http://geoportal.gov.sk/sk/map)
Thematic area A (Target 1): Nature Conservation	<p>National Target A.1: To halt the deterioration in the status of all species and habitats, especially those covered by EU legislation, and achieve a significant and measurable improvement in their condition.</p> <p>Measure A.1.1: Strict implementation of the Birds Directive and the Habitats Directive, adopted resolutions and decisions of international conventions, organizations and programs; improve national legislation for the enforcement of the protection of species and habitats; link the networks of protected areas based on scientific data;</p> <p>Measure A.1.2: Ensure integrated management of important areas based on an ecosystem approach, through the development and implementation of management programs and their</p>	<ul style="list-style-type: none"> • Act No. 543/2002 on Nature and Landscape Protection • Ordinance No. 24/2003, implementing the Nature and Landscape Protection Act • Updated National Strategy for the Protection of Biodiversity until 2020 (2014) • Action plan for the implementation of measures resulting from the Updated National Strategy for the Protection of Biodiversity until 2020 (2014) • List of indicators for status and protection of biodiversity in Slovakia (updated in 2015) • Priority Action Framework (2012, updated in 2013 and 2015) • Strategy for the Adaptation of the Slovak Republic to Climate Change - Update 2018

¹⁰⁷⁷ Ministry of Environment, (2019). Concept of nature and landscape protection until 2030 (draft). Bratislava. An unapproved version is available at: <https://www.slov-lex.sk/legislativne-procesy/-/SK/dokumenty/LP-2019-890>

¹⁰⁷⁸ Ministry of Environment, (2014). Updated National Strategy for the Protection of Biodiversity until 2020. Bratislava. English version available at: <https://www.cbd.int/doc/world/sk/sk-nbsap-v3-en.pdf>

	<p>integration into sectoral policies and strategies; Measure A.1.3: Introduce international standards into nature conservation and effective management and financing of protected areas; Measure A.1.4: Facilitate exchange of experience and best practices, cross-border cooperation in the management of Natura 2000 areas and other protected areas of international importance and transboundary protected areas; Measure A.1.5: Ensure the inclusion of biodiversity protection and management of protected areas as priorities in the planning of EU funding instruments in the next multiannual financial framework.</p>	
	<p>National Target A.2: Ensure that both general public and professions are aware of the importance of biodiversity and the steps towards its protection sustainable use. Measure A.2.1: Develop and adopt a communication strategy on biodiversity, which will include measures for awareness raising and public participation, the expansion of levels of education, participation and awareness in various fields (including various international conventions, cooperation with key sectors, training courses for judges and public prosecutors) and ensure its implementation; Measure A.2.2: Cooperate with the EC in the development and implementation of the communication campaign on the Natura 2000 network, as appropriate.</p>	<ul style="list-style-type: none"> • Updated National Strategy for the Protection of Biodiversity until 2020 (2014) • Action plan for the implementation of measures resulting from the Updated National Strategy for the Protection of Biodiversity until 2020 (2014) • Greener Slovakia - Strategy of the Environmental Policy of the SR until 2030 (so called Envirostrategy 2030) • Strategy for the Adaptation of the Slovak Republic to Climate Change - Update 2018 • KIMS - Complex information and monitoring system (http://www.biomonitoring.sk/) • National geoportal (http://geoportal.gov.sk/sk/map)
Thematic area B (Target 2): Preservation and enhancement of ecosystems and their services	<p>National target B.3: By 2020, ensure the preservation of ecosystems and enhancement of ecosystems services by means of green infrastructure and the restoration of at least 15% of degraded ecosystems. Measure B.3.1: Improvement of knowledge on ecosystems and their services by mapping and assessing the state of ecosystems and their services in the SR; Measure B.3.2: Development of a system of economic valuation of ecosystem goods and services and proposing a comprehensive system of payments for ecosystem services, taking existing systems and mechanisms into consideration; Measure B.3.3: Evaluation of the costs and benefits of protected areas for the purposes of efficient management of the natural heritage, taking into account the provisioning of ecosystem services and goods; Measure B.3.4: Development of a strategic framework for setting priorities for ecosystem restoration, development and implementation of a restoration program for wetlands and rivers as a contribution to climate change mitigation and adaptation; Measure B.3.5: Application of the concept of green infrastructure and the so called national spatial system of ecological stability in spatial planning, land consolidation, preparation of plans for economic and social development of</p>	<ul style="list-style-type: none"> • Act No. 543/2002 on Nature and Landscape Protection • Ordinance No. 24/2003, implementing the Nature and Landscape Protection Act • Convention on Biological Diversity (1994) • Updated National Strategy for the Protection of Biodiversity until 2020 (2014) • Action plan for the implementation of measures resulting from the Updated National Strategy for the Protection of Biodiversity until 2020 (2014) • List of indicators for status and protection of biodiversity in Slovakia (updated in 2015) • Priority Action Framework (2012, updated in 2013 and 2015) • Updated Wetland Care Programme of Slovakia until 2024 (2019) • Action plan for wetlands for the years 2019 - 2021 to the Updated Wetland Care Programme of Slovakia until 2024 (2019) • KIMS - Complex information and monitoring system (http://www.biomonitoring.sk/)

	regions; establishment of a legal and financial mechanism to support the construction and maintenance of green infrastructure; Measure B.3.6: Ensure the positive impact of the "Climate Change Adaptation Strategy of the SR" on biodiversity by means of ecosystem based approaches.	
Thematic area C (Target 3): Protection of biodiversity in national policies on agriculture, forestry and fisheries	National target C.4: By 2020, implement the measures of the Common Agricultural Policy that have positive effects on biodiversity at all cultivated areas, so as to measurably improve the condition of species and habitats. Measure C.4.1: Implement measures with a positive effect on biodiversity, species, habitats and protected areas with the objective of maximizing the contribution of farmers to biodiversity protection at a national level; Measure C.4.2: Support areas with a traditional mosaic pattern of farming, in particular in historically differentiated types of landscape in the SR; Measure C.4.3: Identify species and habitats dependent on a specific method of farming and subsequently propose and implement specific measures with the support of relevant EU funds in order to improve their conservation status.	<ul style="list-style-type: none"> • Act No. 543/2002 on Nature and Landscape Protection • Ordinance No. 24/2003, implementing the Nature and Landscape Protection Act • Updated National Strategy for the Protection of Biodiversity until 2020 (2014) • Action plan for the implementation of measures resulting from the Updated National Strategy for the Protection of Biodiversity until 2020 (2014) • Strategy for the Adaptation of the Slovak Republic to Climate Change - Update 2018
	National Target C.5: Implement national programs of forest management so as to achieve a measurable improvement in the condition of species and habitat dependent on a suitable forest environment and those, which are significantly affected by forestry practices, and to ensure a measurable improvement in the provisioning of ecosystem services in accordance with sustainable forestry practices as compared to the EU reference condition (2010). Measure C.5.1: Maintain the area of primeval and natural forests, prevent further fragmentation and support the forest regeneration, while providing compensation to landowners for the loss of profit caused by differences in management, promote and support alternative uses of high nature value forests; Measure C.5.2: Integrate measures for biodiversity protection into forest management programs, including the integration of forest management programs and management plans for protected areas; Measure C.5.3: Ensure the implementation of the Protocol on Sustainable Forest Management of the Carpathian Convention.	<ul style="list-style-type: none"> • Act No. 543/2002 on Nature and Landscape Protection • Ordinance No. 24/2003, implementing the Nature and Landscape Protection Act • Updated National Strategy for the Protection of Biodiversity until 2020 (2014) • Action plan for the implementation of measures resulting from the Updated National Strategy for the Protection of Biodiversity until 2020 (2014) • National Forest Programme of the Slovak Republic (2007) • Action Plan of the National Forest Programme for 2015-2020 (2015) • Strategy for the Adaptation of the Slovak Republic to Climate Change - Update 2018 • National Report on The Implementation of The Protocol on Conservation and Sustainable Use of Biological and Landscape Diversity to The Framework Convention on The Protection and Sustainable Development of The Carpathians (2017)
	National Target C.6: Ensure adequate protection for aquatic and water dependent habitats and to achieve a good condition of aquatic ecosystems by 2020, and ensure that the development of aquaculture does not have adverse effects on aquatic species and ecosystems.	<ul style="list-style-type: none"> • Act No. 543/2002 on Nature and Landscape Protection • Ordinance No. 24/2003, implementing the Nature and Landscape Protection Act • Updated National Strategy for the Protection of Biodiversity until 2020 (2014)

	<p>Measure C.6.1: Ensure full coordination with the implementation of the Water Framework Directive, with the objective of creating conditions for the development of aquatic habitats and the restoration of riverine ecosystems;</p> <p>Measure C.6.2: Provide conditions for the support of preventive measures to limit conflicts between the interests of fisheries and activities of fish predators.</p>	<ul style="list-style-type: none"> • Action plan for the implementation of measures resulting from the Updated National Strategy for the Protection of Biodiversity until 2020 (2014) • Water Plan of Slovakia (2009-2015, update 2016-2021, draft 2022-2027)
<p>Thematic area D (Target 4): Fight against invasive species</p>	<p>National Target D.7: Ensure the reduction of the negative impact of invasive species on biodiversity and ecosystems in Slovakia by 2020.</p> <p>Measure D.7.1: Adopt a strategy for invasive species in the SR and implement measures for the prevention, control and removal of invasive alien species;</p> <p>Measure D.7.2: Establish a viable mechanism for the financing of the elimination of invasive alien species and define priorities;</p> <p>Measure D.7.3: Establish a commission for introduced alien species to determine conditions and regulations for their import and handling;</p> <p>Measure D.7.4: Modify the management regime for invasive alien species as a part of the amendment to the Nature Protection Act;</p> <p>Measure D.7.5: Identify and monitor newly-introduced invasive alien species, identified their entry points and their routes of spread into and within the territory of the SR.</p>	<ul style="list-style-type: none"> • Act No. 543/2002 on Nature and Landscape Protection • Ordinance No. 24/2003, implementing the Nature and Landscape Protection Act • Act No. 150/2019 on the prevention and management of the introduction and spread of invasive alien species and the implementing regulations to this Act - the Ordinance No. 450/2019 and the Government Regulation No. 449/2019 • Updated National Strategy for the Protection of Biodiversity until 2020 (2014) • Action plan for the implementation of measures resulting from the Updated National Strategy for the Protection of Biodiversity until 2020 (2014)
<p>Thematic area E (Target 5): Reduction of pressures on biodiversity and the rational use of genetic resources</p>	<p>National Target E.8: Reduce the intensity of negative factors affecting biodiversity; finalize, for this purpose, an effective legal framework and tools ensuring compliance with relevant legislation, and ensure fair and equitable sharing of benefits arising from the utilization of genetic resources.</p> <p>Measure E.8.1: Provide improved instruments for biodiversity protection, increasing the coherence of policies and support for measures and mechanisms having a positive effect on biodiversity and reforming or removing measures and mechanisms with a negative effect on biodiversity in all sectors;</p> <p>Measure E.8.2: Support the adoption of legislation on the access to benefit sharing, with respect to genetic resources, at EU level and adopt this legislation at the national level; and accede to the Nagoya Protocol.</p>	<ul style="list-style-type: none"> • Act No. 543/2002 on Nature and Landscape Protection • Ordinance No. 24/2003, implementing the Nature and Landscape Protection Act • Updated National Strategy for the Protection of Biodiversity until 2020 (2014) • Action plan for the implementation of measures resulting from the Updated National Strategy for the Protection of Biodiversity until 2020 (2014)
<p>Thematic area F (Target 6): Improvement of the cooperation and synergies between the environmental and other sector policies on measures aimed at reducing the ecological footprint in</p>	<p>Target F.9: Engage a wide range of stakeholders and establish or re-establish partnerships to support the implementation of the national strategy for biodiversity; promote education, training, research and participation.</p> <p>Measure F.9.1: Ensure the integration of biodiversity protection into policies, strategies, planning and decision-making processes in various sectors;</p> <p>Measure F.9.2: Ensure better coordination between institutions which are responsible for the implementation of international conventions; re-establish the inter-ministerial commission for the</p>	<ul style="list-style-type: none"> • Act No. 543/2002 on Nature and Landscape Protection • Ordinance No. 24/2003, implementing the Nature and Landscape Protection Act • Updated National Strategy for the Protection of Biodiversity until 2020 (2014) • Action plan for the implementation of measures resulting from the Updated National Strategy for the Protection of Biodiversity until 2020 (2014) • The Sectoral Policy on Environmental Education and Awareness until 2025 (2015).

terms of international cooperation, and increasing support for education, training and research in this field	<p>CBD and strengthen capacities in this area;</p> <p>Measure F.9.3: Provide capacities for a continuous and long-term mapping and monitoring of components of biodiversity;</p> <p>Measure F.9.4: Ensure the participation of academia to improve our knowledge on biodiversity, its values, role, status and trends, and consequences of its loss and damage;</p> <p>Measure F.9.5: Ensure the involvement of the private sector in the protection and financing of biodiversity protection.</p>	
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8.2 Choice of targets to focus the national case studies, and justification

Slovakia's geographical position, in the centre of Europe and on the boundary of the Carpathian Mountain and Pannonian lowland areas, allows for a rich diversity of flora and fauna, as well as for diversified landscape with a lot of species, including endemic ones. The integrity of landscapes and natural ecosystems is considered an essential instrument for increasing Slovakia's competitiveness in the tourism sector. The potential, which Slovak nature, biodiversity and landscape have as a contribution to the overall tourism sector is still not used properly and significant changes would have to be done in the near future in this field.¹⁰⁷⁹

Considering the above mentioned, two targets have been selected for more detailed examination in this case study: **Target 1** (Fully implement the Birds and Habitats Directives) and **Target 2** (Maintain and enhance ecosystems and their services).

8.3 Country-specific biodiversity target focus

8.3.1 Effectiveness

Overall progress towards the Biodiversity Strategy

Target 1

Slovakia adopted a Revised National Biodiversity Strategy and Action Plan to 2020 in 2014. On the basis of the latest update of the assessment, Slovakia's terrestrial Natura 2000 network under the Birds and Habitats Directives is now considered to be virtually complete. Natura 2000 is considered to be integrated into the national system of protected areas as there is a high degree of overlap between conservation measures for Natura 2000 sites and for nationally protected areas. The Act on Nature and Landscape Protection, governs both networks (Act 543/2002 Coll. as amended).¹⁰⁸⁰

Target 2

Slovakia has a range of policies and strategies in place to develop and improve green infrastructure. The Act on Nature and Landscape Protection defines a coherent European network of protected areas and sets conditions for the management and protection of these areas. It sets out that the Territorial System of Ecological Stability (TSES) is a spatial structure of interrelated ecosystems that ensure diverse

¹⁰⁷⁹ Ministry of Environment, (2019). The Sixth National Report on the implementation of the Convention on Biological Diversity in the Slovak Republic. Bratislava. Available at: <https://chm.cbd.int/database/record?documentID=246532>

¹⁰⁸⁰ European Commission, (2019). The EU Environmental Implementation Review 2019. Country report - Slovakia. Available at: https://ec.europa.eu/environment/eir/pdf/report_sk_en.pdf

conditions and life forms in the landscape. Under this system, documents must be prepared at regional level.¹⁰⁸¹

There was no significant change in progress towards National Target B.3 The 15 % target was definitely not achieved. Several projects at local level helped to restore and protect some habitats and ecosystems, but a prioritized framework for the common restoration of ecosystems has not yet been prepared.¹⁰⁸²

Ecosystems in Slovakia are under constant pressure coming from investors who want to build various technical elements in the country. Agroecosystems are most at risk, but valuable ecosystems within protected areas are also often endangered by the construction of sports, recreation and entertainment centres. Many times, the economic interests outweigh environmental ones. The remnants of primary forests and natural forests are also endangered by their logging when attacked by bark beetles. The pressure on aquatic and alluvial ecosystems is mainly created by inappropriate stream modifications as part of flood control measures and also after the creation of a new natural riverbed after floods, or the construction of hydroelectric power plants directly on the stream and plans to navigate some streams for shipping (e.g., Morava river, Váh river).¹⁰⁸³

Key success/failure stories on the implementation of the Biodiversity Strategy in MS

Around 48,9 % of Slovak forest overlaps with Natura 2000 sites. The contradictory approaches to forest management in protected areas have been identified as one of Slovakia's three biggest environmental challenges.

Although environmental legislation is relatively strict, enforcement is low. The infringement procedures under way for noncompliance with nature legislation are due to insufficient designation of new Natura 2000 sites and poor management of existing sites including missing management plans. A specific problem relates to forest management plans and activities such as logging in protected areas, affecting the target species, like Capercaillie.

In general, administrative capacities remain insufficient in Slovakia and this has a negative impact on the enforcement of the environmental laws and policies. The most affected sectors are water management and nature protection. Regional offices are still badly affected by a high turn-over of staff.

The Ministry of the Environment has kept up the positive momentum created during the Slovak Presidency in the second half of 2016. The new 2030 National Environmental Strategy is one of its flagship initiatives. The general public in Slovakia has lately become more active and vocal when it comes to its reactions to issues related to environment. Despite their limited resources (financial and human) the environmental NGOs in Slovakia play an important role in this respect and can have a great impact on attracting attention of general public to such problems.¹⁰⁸⁴

¹⁰⁸¹ European Commission, (2019). The EU Environmental Implementation Review 2019. Country report - Slovakia. Available at: https://ec.europa.eu/environment/eir/pdf/report_sk_en.pdf

¹⁰⁸² Ministry of Environment, (2019). The Sixth National Report on the implementation of the Convention on Biological Diversity in the Slovak Republic. Bratislava. Available at: <https://chm.cbd.int/database/record?documentID=246532>

¹⁰⁸³ Filčák, R., Považan, R., Adamec, M., Dokupilová, D., Chrenko, M., Izakovičová, Z., Kadlečík, J., Szemesová, J., Špulerová, J. and Šťastný, P., (2017). Environmental Development Scenarios 2020+. Sustainable growth in the context of biodiversity protection and climate change (short-term prospective study). Centre for Social and Psychological Sciences, Slovak Academy of Sciences, organizational unit Prognostic Institute of the Slovak Academy of Sciences. Available at: <https://www.enviroportal.sk/spravy/detail/9161>

¹⁰⁸⁴ European Commission, (2019). The EU Environmental Implementation Review 2019. Country report - Slovakia. Available at: https://ec.europa.eu/environment/eir/pdf/report_sk_en.pdf

Evidence of successful implementation of focus targets

Target 1

Slovakia made visible progress in completion of the List of Sites of Community importance (SCIs) in accordance with the requirements of the Habitats Directive. The evidence is the database with added sites in Standard data form (SDF) for Natura 2000 sites for Slovakia. Additionally, systematic monitoring of habitats and species was established (www.biomonitoring.sk). Successful implementation can be demonstrated also by realisation of 14 LIFE+ projects and 5 LIFE projects, which is documented in the list of LIFE projects for Slovakia on LIFE project web site. Preparation of documentation for management plans for Natura 2000 sites and rescue plans for habitats and species, can be also mentioned as a positive example of implementation (www.sopsr.sk). Other activities are mentioned in the Report of Implementation of National Action Plan for Biodiversity.¹⁰⁸⁵

For Aichi Target 11: Slovakia has met the target with respect to terrestrial ecosystems, as over 25 % of the area of the country has been protected by law. However, the protection of some protected areas, including some national parks, in practice is insufficient and does not comply with the international standards (especially IUCN criteria).¹⁰⁸⁶

It is positive, that according to the Nature Conservation Act, the non-intervention in national parks has been set up to 50%, while the Envirostrategy 2030 speaks of a gradual adjustment up to 75%. However, it remains questionable how this goal will be achieved in reality, if there is no fundamental change in the management of these territories and functional compensation for private landowners.¹⁰⁸⁷

Target 2

Activities related to MAES are under way in Slovakia. In 2020, the country has prepared the methodology for mapping and assessment of ecosystems and their services¹⁰⁸⁸, as well as a detailed map of Slovakia's ecosystems¹⁰⁸⁹, which identifies individual ecosystems and their spatial distribution, status, and selected properties.

The implementation of Target 2 can be documented by realised INTEREG and Carpathian convention projects, where maintenance and development of international cooperation was successful. It is no less important to mention the publishing activities of expert outputs (List of publications related to biodiversity assessments, i.e., outputs of State Nature Conservancy of the Slovak Republic).¹⁰⁹⁰

Another example of successful implementation was the partial restoration of existing water relevant ecosystems which was realized. Realised measures can be described as multiple-beneficial, due to RBMPs, FRMs and climate change adaptation measures were implemented (old oxbow lakes system with particular hydro meliorations canals in Medzibodrožie).¹⁰⁹¹

¹⁰⁸⁵ Stakeholder survey results

¹⁰⁸⁶ Ministry of Environment, (2019). The Sixth National Report on the implementation of the Convention on Biological Diversity in the Slovak Republic. Bratislava. Available at: <https://chm.cbd.int/database/record?documentID=246532>

¹⁰⁸⁷ Interview results

¹⁰⁸⁸ <http://www.sopsr.sk/files/hodnota-ekosys.pdf>

¹⁰⁸⁹ <https://www.tandfonline.com/doi/full/10.1080/17445647.2019.1689858>

¹⁰⁹⁰ Survey results

¹⁰⁹¹ Stakeholder survey results

Evidence of unsuccessful implementation of focus targets

Target 1

The sustainable use of (woody) biomass remains a concern in certain regions of Slovakia where high quality wood was cut and burnt for energy purposes. To help its renewable energy policy objectives, Slovakia used EU funds to increase the use of biomass. However, these subsidies are regarded as environmentally harmful and a campaign by NGOs has been under way since 2014 to stop this support. The subsidies were finally ceased by a legislative change, which came to force on 1st January 2019. This represents progress although the change does not include woody biomass coming from calamity and sanitary logging on NATURA sites. The lack of an impact assessment may adversely affect the integrity of the sites, in breach of the Habitats Directive.¹⁰⁹²

There are several examples of unsuccessful implementation of focus targets in Slovakia, unfortunately. There is continual degradation of habitats and species while land remains in unfavourable/bad conservation status, as reported under article 12 BD and article 17 HD. There is also a lack of large-scale management measures implemented in Slovakia. Most of the management measures have focused on small scale areas. Pressures from agricultural intensification and forestry policy further cause deterioration of habitats and species. Another issue is the continual development of road infrastructure and hydropower plants which largely influence the conservation status of habitats and species in negative ways by further destruction of connectivity. Additionally, the development of urban areas creates continual pressure on habitats and species and their conservation status. This situation is not improving and in fact it is getting worse. There is also very limited financial support for land outside of LPIS for practical management measures for habitats and species CS improvement. Unsuitable rules in CAP, which support intensification and unsuitable practices for biodiversity support can be also described as negative factor.¹⁰⁹³

Revitalization interventions and management measures are mostly non-systemic, rather local and dependent on projects and the availability of funds at a certain time. Although these are part of the policies of relevant sectors, they are not systemically planned and funds are not allocated for their implementation on a regular and long-term basis, but mostly just ad-hoc.¹⁰⁹⁴

The NBSAP assessment mentions tasks and activities related to ecosystem restoration, but the 15 % target was definitely not achieved. Several projects at local level helped to restore and protect some habitats and ecosystems (esp. in floodplain, grasslands and peatland habitats), but a prioritised framework for the common restoration of ecosystems has not yet been prepared.¹⁰⁹⁵

¹⁰⁹² European Commission, (2019). The EU Environmental Implementation Review 2019. Country report - Slovakia. Available at: https://ec.europa.eu/environment/eir/pdf/report_sk_en.pdf

¹⁰⁹³ Stakeholder survey results

¹⁰⁹⁴ Filčák, R., Považan, R., Adamec, M., Dokupilová, D., Chrenko, M., Izakovičová, Z., Kadlečík, J., Szemesová, J., Špulerová, J. and Šťastný, P., (2017). Environmental Development Scenarios 2020+. Sustainable growth in the context of biodiversity protection and climate change (short-term prospective study). Centre for Social and Psychological Sciences, Slovak Academy of Sciences, organizational unit Prognostic Institute of the Slovak Academy of Sciences. Available at: <https://www.enviroportal.sk/spravy/detail/9161>

¹⁰⁹⁵ Ministry of Environment, (2019). The Sixth National Report on the implementation of the Convention on Biological Diversity in the Slovak Republic. Bratislava. Available at: <https://chm.cbd.int/database/record?documentID=246532>

Target 2

Slovakia has prepared strategic documents in the field of biodiversity and protection of ecosystems and their services at a good professional level (Updated National Biodiversity Protection Strategy until 2020 and its Action plan, National Strategy for Sustainable Development, etc.), but the implementation of the measures specified therein is insufficient, most of them are not fulfilled. There is also a well-developed concept of green infrastructure in the form of the concept of a Territorial System of Ecological Stability (TSES) on a geosystem approach and already developed a supra-regional TSES and regional TSES (RTSES) for former districts. RTSES is currently being updated for the current districts. The weak implementation of the proposed measures in practice needs to be emphasized also here. Planting and revitalization of TSES elements is unique, often carried out on a voluntary basis.¹⁰⁹⁶

With the significant delay in the adoption of the Natura 2000 management plans, the impact of other tools – despite benefiting green infrastructure – is marginal as they have no formal status for actual landscape management.¹⁰⁹⁷

Not many stakeholders are interested in realisation of green infrastructure projects. The main pressure is focused on state organisations, and pressure on private land owners is weak. The mechanisms are in place, but realization is too weak.¹⁰⁹⁸

Unexpected or unintended consequences of implementing focus targets

Evidence relating to Target 1 and 2

As a result of increased awareness and interest of people in the protection of their immediate natural environment, they become direct participants in the discussion of strategic documentation of cities and municipalities, but also in decision-making proceedings, where they predominantly advocate the preservation of the natural environment. On the other hand, they are aware that roads and highways are necessary for the Slovak economy, they are in favour of building roads and highways on which noise protection will be ensured.¹⁰⁹⁹

Some stakeholders argue that nature protection has been frequently prioritised in Slovakia, without any analyses of negative impacts on society and inhabitants. It is argued that sometimes it looks like the only priority is nature protection and not sustainable living of people.¹¹⁰⁰

¹⁰⁹⁶ Filčák, R., Považan, R., Adamec, M., Dokupilová, D., Chrenko, M., Izakovičová, Z., Kadlečík, J., Szemesová, J., Špulterová, J. and Šťastný, P., (2017). Environmental Development Scenarios 2020+. Sustainable growth in the context of biodiversity protection and climate change (short-term prospective study). Centre for Social and Psychological Sciences, Slovak Academy of Sciences, organizational unit Prognostic Institute of the Slovak Academy of Sciences. Available at: <https://www.enviroportal.sk/spravy/detail/9161>

¹⁰⁹⁷ European Commission, (2019). The EU Environmental Implementation Review 2019. Country report - Slovakia. Available at: https://ec.europa.eu/environment/eir/pdf/report_sk_en.pdf

¹⁰⁹⁸ Stakeholder survey results

¹⁰⁹⁹ Stakeholder survey results

¹¹⁰⁰ Stakeholder survey results

Key factors which have contributed to achieving objectives

Evidence relating to Target 1 and 2

The Ministry of the Environment has kept up the positive momentum created during the Slovak Presidency in the second half of 2016. The new 2030 National environmental strategy is one of its flagship initiatives.¹¹⁰¹

The key factor, frequently identified by interviewees as having been important in contributing towards achieving objectives of the EU Biodiversity Strategy 2020, was the fact that the EU wide targets are valid for all member states and the Biodiversity Strategy presents a complex and single framework for addressing this issue across the EU.¹¹⁰²

Evidence relating to Target 1

The deterioration of species and habitats can only be stopped if their status is sufficiently known and, on the basis of which, appropriate measures can be proposed to improve it. From the point of view of species and habitats, a key knowledge base from the entire territory where the relevant species or habitats occur and ensuring regular collection and supplementation of data on their occurrence and status is crucial. Within the State Nature Conservancy of the Slovak Republic, a tool for the collection and evaluation of occurrence data was created - the Comprehensive Information and Monitoring System (KIMS¹¹⁰³). This tool is currently used to evaluate and determine the status of species and habitats.¹¹⁰⁴

Key factors which have hindered the achievement of objectives

Evidence relating to Target 1 and 2

In general, administrative capacities remain insufficient in Slovakia and this has a negative impact on the enforcement of environmental laws and policies. The most affected sectors are water management and nature protection. Regional offices are still badly affected by a high turn-over of staff.¹¹⁰⁵

As the legislation covers all issues linked to the nature, biodiversity and landscape protection, it is rather difficult to describe, where it works well and where are some limitations, but generally mentioned, the legislation is prepared well - problems are linked more with the proper implementation or with the weak enforcement of the law in some areas of nature, biodiversity and landscape protection.

Implementation of relevant tasks is rather limited to the established legislation as well as to the structure and activities of the NBSAP. It often happens, that not all scientific and technical needs are taken into account or the opposite - legislation and tasks are not prepared in line with the scientific and technical needs and projects.¹¹⁰⁶

¹¹⁰¹ European Commission, (2019). The EU Environmental Implementation Review 2019. Country report - Slovakia. Available at: https://ec.europa.eu/environment/eir/pdf/report_sk_en.pdf

¹¹⁰² Interview results

¹¹⁰³ <http://www.biomonitoring.sk/>

¹¹⁰⁴ Filčák, R., Považan, R., Adamec, M., Dokupilová, D., Chrenko, M., Izakovičová, Z., Kadlečík, J., Szemesová, J., Špulterová, J. and Šťastný, P., (2017). Environmental Development Scenarios 2020+. Sustainable growth in the context of biodiversity protection and climate change (short-term prospective study). Centre for Social and Psychological Sciences, Slovak Academy of Sciences, organizational unit Prognostic Institute of the Slovak Academy of Sciences. Available at: <https://www.enviroportal.sk/spravy/detail/9161>

¹¹⁰⁵ European Commission, (2019). The EU Environmental Implementation Review 2019. Country report - Slovakia. Available at: https://ec.europa.eu/environment/eir/pdf/report_sk_en.pdf

¹¹⁰⁶ Ministry of Environment, (2019). The Sixth National Report on the implementation of the Convention on Biological Diversity in the Slovak Republic. Bratislava. Available at: <https://chm.cbd.int/database/record?documentID=246532>

The general public is usually unaware of the biodiversity targets, which are usually only known by the people involved somehow in the agenda. People in general do not understand what the targets of nature protection are. Based on the information presented in media, it looks like the targets are changing according to political will.¹¹⁰⁷

One of the hindering key factors, identified by interviewees, is the high demand for paper work with low practical outputs. This creates negative attitude towards this mechanism of financing.¹¹⁰⁸

Evidence relating to Target 1

A key factor, hindering the achievement of objectives for Target 1, is the issue of compensation for farming restrictions in designated Natura 2000 sites and bird areas, which is not fully resolved. This leads to significant opposition by landowners to declare new protected areas and Natura 2000 sites.¹¹⁰⁹

To improve the condition of species and habitats, it is not enough to ensure legislative protection and implementation of monitoring, but an important condition is the implementation of appropriate management with the provision of practical care. In the current legislative environment of Slovakia, however, the implementation of practical care, which would result in a significant improvement in the status of species and habitats in some cases is problematic. Management measures are tied to specific localities where it is necessary to ensure the improvement of the situation at the local level, while the consent of the owner of the land on which the species occurs and where the measures are to be implemented is required. However, the State Nature Conservancy of the Slovak Republic responsible for monitoring, reporting and practical care is not a land administrator, not only outside protected areas, but also directly in protected areas. Therefore, the implementation of measures and efforts to improve the protection of species and habitats and meeting the Target 1, can be provided by them only in close cooperation with the landowner. Even in the case of land owned by the state, it is necessary to find consensus and consent in the use of such land in accordance with the interests of all state entities that have an impact on the ownership, administration or management of land.¹¹¹⁰

The obstacle of competence discrepancies (if not fights directly) was identified also during the performed interviews. There are often disagreements between the Ministry of the Environment (stipulating that something needs to be done in the specific area in the field of biodiversity protection) and the Ministry of Agriculture, which has economic priorities in the given area. This is happening not only in forests, but also in other areas of agriculture. On top of that, there is also the problem of ownership relations in protected areas. The conflict of interests of the Ministry of the Environment and the Ministry of Agriculture can also be seen here. Forest lands that belong to the state and are in the third (and higher) level of protection should be of particular interest in the protection of biodiversity. However, because they are managed by the Ministry of Agriculture, their goal is forest management (profit) and not protection.

¹¹⁰⁷ Stakeholder survey results

¹¹⁰⁸ Stakeholder survey results

¹¹⁰⁹ Stakeholder survey results

¹¹¹⁰ Filčák, R., Považan, R., Adamec, M., Dokupilová, D., Chrenko, M., Izakovičová, Z., Kadlečík, J., Szemesová, J., Špulerová, J. and Šťastný, P., (2017). Environmental Development Scenarios 2020+. Sustainable growth in the context of biodiversity protection and climate change (short-term prospective study). Centre for Social and Psychological Sciences, Slovak Academy of Sciences, organizational unit Prognostic Institute of the Slovak Academy of Sciences. Available at: <https://www.enviroportal.sk/spravy/detail/9161>

Last but not least, there is a problem in the area of competencies - **the state administration in the area of the environment is subordinated to the Ministry of the Interior**. As a result, the environmental authorities within the state administration are not managed from the Ministry of the Environment and thus the guidelines from the Ministry of the Environment do not have such weight for them. This is often affected by the political influences of individual nominees, as well.¹¹¹¹

Evidence relating to Target 2

In the case of the integration of new areas into the Regional TSES, mainly the inclusion of forest stands in biocentres of regional importance, there is disagreement with this inclusion by landowners and users, due to concerns about limiting their management.¹¹¹²

There is insufficient integration of environmental management and nature protection into sectoral policies. There is also **insufficient coordination between the various bodies responsible for the protection of the environment and ecosystems**, which is reflected in the lack and provision of information for the assessment of ecosystem services. **Some sectoral strategies** (even newly adopted ones) **are in conflict with the principles promoted in the strategies for the protection of biodiversity** and with some international obligations of the Slovak Republic.¹¹¹³

8.3.2 Efficiency

Key evidence on the cost efficiency of the Biodiversity Strategy as a whole

The basic framework document until 2020 - The Prioritised Action Framework for financing Natura 2000 in the Slovak Republic for the EU programming period 2014 - 2020, determines the priorities (objectives, measures, activities) that will achieve this goal by 2020. According to that, 67 habitats of European importance from Annex I and 134 species of European importance from Annex II of the Habitats Directive have a natural occurrence in Slovakia. Within them, there are equally 23 priority habitats of European importance and 23 priority species. For 81 species of birds listed in Annex I of the Birds Directive, protected bird areas are defined.¹¹¹⁴

According to the Ministry of Environment¹¹¹⁵, there were various funding opportunities for biodiversity-related projects in the Slovak Republic during the assessed period:

- **Operational Programme Quality of Environment (2014 - 2020)**. The priority axes and investment priorities of the programme were:
 - Sustainable use of natural resources through the development of environmental infrastructure in the areas of Waste Management; Water Management; Biodiversity,

¹¹¹¹ Interview results

¹¹¹² Stakeholder survey results

¹¹¹³ Filčák, R., Považan, R., Adamec, M., Dokupilová, D., Chrenko, M., Izakovičová, Z., Kadlečík, J., Szemesová, J., Špulerová, J. and Šťastný, P., (2017). Environmental Development Scenarios 2020+. Sustainable growth in the context of biodiversity protection and climate change (short-term prospective study). Centre for Social and Psychological Sciences, Slovak Academy of Sciences, organizational unit Prognostic Institute of the Slovak Academy of Sciences. Available at: <https://www.enviroportal.sk/spravy/detail/9161>

¹¹¹⁴ Filčák, R., Považan, R., Adamec, M., Dokupilová, D., Chrenko, M., Izakovičová, Z., Kadlečík, J., Szemesová, J., Špulerová, J. and Šťastný, P., (2017). Environmental Development Scenarios 2020+. Sustainable growth in the context of biodiversity protection and climate change (short-term prospective study). Centre for Social and Psychological Sciences, Slovak Academy of Sciences, organizational unit Prognostic Institute of the Slovak Academy of Sciences. Available at: <https://www.enviroportal.sk/spravy/detail/9161>

¹¹¹⁵ <https://www.minzp.sk/ochrana-prirody/medzinarodne-dohovory/dohovor-biodiverzite/financovanie-biodiverzity-sr/>

- soil, ecosystem services and green infrastructure; Urban environment, Revitalization, Reduction of pollution and noise;
- Adaptation to the adverse effects of climate change with a focus on flood protection;
- Promoting risk management, emergency management and resilience to climate change emergencies;
- An energy-efficient, low-carbon economy in all sectors, including the promotion of renewables.
- **LIFE Programme (2014-2020).** LIFE supported projects under two themes - the environment and climate change.
- **Rural Development Programme (2014-2020).** The programme supported the development of peri-urban areas by focusing on the following priorities:
 - Agricultural competitiveness and sustainable forestry;
 - Food chain organization, animal welfare and risk management in agriculture;
 - Restoration, conservation and enhancement of ecosystems related to agriculture and forestry;
 - Resource efficiency and climate change;
 - Social inclusion and local development.
- **Interreg CENTRAL EUROPE Programme (2014-2020).** The programme supports international cooperation of partners from at least 3 Central European countries in areas of Innovation; Low carbon cities and regions; Natural and cultural resources, including the improvement of the urban environment; Transport and mobility.

Through nine national and regional programmes, Slovakia has been allocated EUR 15.32 billion from ESIF funds for 2014-2020. This means that with its national contribution of EUR 4.72 billion, Slovakia has a total budget of EUR 20 billion to invest in various areas, such as creating jobs and growth, supporting sustainable transport and protecting the environment, and investing in research and innovation. Public investments, including in the environment sector, depend heavily on EU funds. The country's main programme for implementing environmental policies is the Operational Programme Quality of Environment.¹¹¹⁶

In Slovakia, protected areas are mainly financed through the state budget and EU funds. Assessment of funding sources for nature conservation available to statutory agencies between 2010-2016 estimate that approximately half the funding sources come from state budget sources and the other half from EU structural funds. Slovakia makes use of European Development Funding (ERDF) in different ways for nature conservation and GI activities (codes 85, 86) such as through cross border cooperation (EUR 88.8 million), Interreg for GI development in cities (EUR 44.8 million), and projects implemented in regional cooperation under the Danube Strategy (EUR 2.02 million). Slovakia uses the EAFRD for which in 2014-2020 EUR 297.6 million is allocated for nature conservation. Slovakia also utilises Cohesion funding for nature for the preparation and implementation of management plans for Natura 2000 sites, preparation and implementation of action plans for priority species and habitats, enhancement of the monitoring and reporting, green infrastructure and control of invasive alien species (EUR 88.4 million 2014-2020), as well as LIFE funding (EUR 13.5 million thus far).¹¹¹⁷

¹¹¹⁶ European Commission, (2019). The EU Environmental Implementation Review 2019. Country report - Slovakia. Available at: https://ec.europa.eu/environment/eir/pdf/report_sk_en.pdf

¹¹¹⁷ EEA, (2020). Management effectiveness in the EU's Natura 2000 network of protected areas. European Environment Agency. Available at: <https://cmshare.eea.europa.eu/s/fPAH9bHrrkY6pc9>

The first report evaluating the fulfilment of the tasks of the Action Plan for the implementation of the Updated National Strategy for Biodiversity Protection until 2020 was prepared in 2016 and a subsequent partial report was submitted in 2018. The final report is expected in the first half of 2021 - it is currently in the approval stage¹¹¹⁸ - on December 23, 2020, the evaluation of the inter-ministerial comment procedure was completed.

In accordance with the objectives of the Concept of Nature and Landscape Protection until 2030, an analysis of existing financial mechanisms within the State Nature Conservancy of the Slovak Republic and elaboration of innovative financial mechanisms in connection with the creation of integrated management of protected areas and proposed innovative sources of financing State Nature Conservancy will be prepared by 2022.¹¹¹⁹

Key evidence of benefits

Evidence relating to Target 1 and 2

Slovakia made a significant step forward in relation to clarification of all financial resources, which are provided for national, EU and international biodiversity protection. A more systematic approach is being taken also in relation to ODA (use of the OECD methodology, preparation of the new strategic plan towards the ODA implementation, targeted ODA support, etc.). For the national and EU financial resources, the use and implementation of financial resources, as well as projects, is systematically monitored, assessed and evaluated. Also, the other steps on national level were done to improve the situation on resource mobilization.¹¹²⁰

Details on benefits and outcomes of the projects are listed in the Report on Evaluation of the fulfilment of the tasks of the Action plan for the implementation of measures resulting from the Updated National Strategy for the Protection of Biodiversity until 2020¹¹²¹.

Evidence relating to Target 1

In December 2020, the Ministry of the Environment of the Slovak Republic acquired the first long-term integrated LIFE project aimed at improving the state of the NATURA 2000 network in Slovakia. It is funded by the EU programme and will be implemented over the next 10 years. More than EUR 16.5 million will be spent on it, with almost EUR 10 million coming from EU resources. One of the main goals of this project is to complete and streamline care measures for individual areas of this system. The project is also intended to contribute to improving the interconnection of individual territories, strengthening staff capacity and raising environmental awareness. One of the outputs should be an analysis of the impacts on climate change on the NATURA 2000 system, which are our specially protected areas. The project will include the implementation of measures for the revitalization of rivers, protection of peatland habitats, restoration of grasslands and wetlands. The project brings cooperation of the ministries of the environment and agriculture, but also cooperation with non-state entities and non-profit organizations with nationwide activities. In addition to the Ministry of the Environment of the Slovak Republic, six other

¹¹¹⁸ <https://www.slov-lex.sk/legislativne-procesy/SK/LP/2020/540>

¹¹¹⁹ Ministry of Environment, (2019). Concept of nature and landscape protection until 2030 (draft). Bratislava. An unapproved version is available at: <https://www.slov-lex.sk/legislativne-procesy/-/SK/dokumenty/LP-2019-890>

¹¹²⁰ Ministry of Environment, (2019). The Sixth National Report on the implementation of the Convention on Biological Diversity in the Slovak Republic. Bratislava. Available at: <https://chm.cbd.int/database/record?documentID=246532>

¹¹²¹ <https://www.slov-lex.sk/legislativne-procesy/SK/LP/2020/540>

project partners are involved in the project: State Nature Conservancy of the Slovak Republic (ŠOP SR), World Wildlife Fund Slovakia (WWF SR), National Forestry Centre (NLC), Daphne - Institute of Applied Ecology, Slovak Water Management Company (SVP) and the Faculty of Science of Comenius University (PRIF UK). The cooperating institutions are the Ministry of Agriculture and Rural Development of the Slovak Republic (MPRV), the Slovak Environment Agency (SAŽP) and the Technical University in Zvolen (TUZVO).

Thus, in addition to improving the protection of the territory, the LIFE 2020 - 2030 project shall bring new models of cooperation that will contribute to the improvement of care for nature, as well as for the NATURA 2000 system in Slovakia.¹¹²²

Evidence relating to Target 2

A clear benefit funded from the Operational Programme Quality of Environment is represented by the monograph value of ecosystems and their services in Slovakia, published in 2020. The authors have prepared a detailed map of Slovakia's ecosystems, which contains 1,033,905 unique polygons, with an average size of 4.9 hectares. It identifies individual ecosystems and their spatial distribution, status, and selected properties. Results of this work can be used for ecosystem services assessment, spatial planning, nature protection analysis, and other related purposes. The spatial precision of the data is determined by that of the field data, which was mostly created at scales between 1:10000 and 1:5000. The data are stored in the form of a geodatabase containing more than 1,000,000 polygons.

According to the reviewer of the work (Doc. RNDr. Zita Izakovičová, PhD., Institute of Landscape Ecology SAS), "The publication can be considered as fulfilling the obligations of the Slovak Republic within the MAES process."¹¹²³

Key evidence of costs

Evidence relating to Target 1 and 2

Generally, substantial financial resources are allocated from a range of funds, but the allocations are rather scattered and not fully documented. Clear knowledge on types and amount of financial resources will be more transparent through the new Clearing House Mechanism, which is under development.¹¹²⁴

The Report on the state of the environment of the Slovak Republic in 2018 offers a good overview of the economics of environmental change, but this covers not only costs related to biodiversity, but also to other aspects of the environment (e.g., waste, water, air protection, etc.).¹¹²⁵

Details on costs of the projects are listed in the Report on Evaluation of the fulfilment of the tasks of the Action plan for the implementation of measures resulting from the Updated National Strategy for the Protection of Biodiversity until 2020¹¹²⁶.

¹¹²² Ministry of Environment, (2020). EU funds will also help protect Slovak nature. Article on website of the Ministry of Environment. Available at: <https://www.minzp.sk/spravy/ochrane-slovenskej-prirody-pomozu-aj-prostriedky-eu.html>

¹¹²³ Černecký J, Gajdoš P, Ďuricová V, Špulerová J, Černecká L, Švajda J, Andráš P, Ulrych L, Rybanič R, Považan R. 2020. Value of ecosystems and their services in Slovakia. Banská Bystrica: ŠOP SR, 166pp. ISBN978-80-8184-078-4. Available at: <http://www.sopsr.sk/files/hodnota-ekosys.pdf>

¹¹²⁴ Ministry of Environment, (2019). The Sixth National Report on the implementation of the Convention on Biological Diversity in the Slovak Republic. Bratislava. Available at: <https://chm.cbd.int/database/record?documentID=246532>

¹¹²⁵ Ministry of Environment, (2020). Report on The State of The Environment of The Slovak Republic in 2018 Extended assessment of quality and care (Biodiversity). Bratislava. Available at: <https://www.enviportal.sk/uploads/report/9361.pdf>

¹¹²⁶ <https://www.slov-lex.sk/legislativne-procesy/SK/LP/2020/540>

The Concept of Nature and Landscape Protection until 2030 also aims to eliminate the existing shortcomings in the control of the efficiency of the use of funds. Operational target 3.4 defines a measure to “Improve the efficiency of cross-compliance system in controls of payments from agricultural subsidies in protected areas and NATURA 2000 areas. The output by 2025 should be the introduction of a transparent and effective cross-compliance system involving nature and landscape protection authorities and organizations in the control of agricultural subsidy payments in protected areas and NATURA 2000 areas, including the establishment of a common information system for the control of agricultural subsidy payments.”¹¹²⁷

Evidence of socioeconomic impacts

Evidence relating to Target 1

According to the opinions of interviewees, only a limited number of jobs are created in relation to the implementation of EU biodiversity Strategy. However, if there was no implementation, the assumption is, that about 1000 - 5000 jobs would be lost. There was an evident support of employment in services and production activities in regions where information campaigns have been carried out to improve awareness in the field of Natura 2000. Regarding the negative impacts - it is obvious, that non-realising of green measures in agricultural land has bigger and bigger negative impacts on the erosion and surface runoff conditions. This leads to more frequent flood problems, rising of sediments in rivers and water reservoirs. In general, due to inactivity, climate change impacts in the country are growing.¹¹²⁸

Evidence relating to Target 2

Regional TSES documentation has a direct impact on the improvement and protection of the natural environment in all districts of the Slovak Republic and in localities with strong economic development by improving the socio-economic environment by supporting jobs, supporting regional and local economies, supporting small and medium local entrepreneurs and etc.¹¹²⁹

8.3.3 Coherence

Coherence with the EU 2020 Strategy

Commitment to the EU 2020 Strategy was included in Program Statement of the Government of the Slovak Republic of all Governments during the assessed period. This commitment was transferred also into the policies and strategy documents, including the Updated National Strategy for the Protection of Biodiversity to 2020.¹¹³⁰

Coherence with EU Sectoral Policies

The Updated National Strategy for the Protection of Biodiversity to 2020 reflects all concepts, strategies, plans and programmes approved and valid in the Slovak Republic, which have any relation to the protection and use of biodiversity, such as:¹¹³¹

¹¹²⁷ Ministry of Environment, (2019). Concept of nature and landscape protection until 2030 (draft). Bratislava. An unapproved version is available at: <https://www.slov-lex.sk/legislativne-procesy/-/SK/dokumenty/LP-2019-890>

¹¹²⁸ Stakeholder survey results

¹¹²⁹ Stakeholder survey results

¹¹³⁰ Ministry of Environment, (2014). Updated National Strategy for the Protection of Biodiversity until 2020. Bratislava. Available at: https://www.minzp.sk/files/sekcia-ochranyprirodyakrajiny/dohovory/biodiverzita/narodna_strateg_ochr_biodiverz_2020.pdf

¹¹³¹ Ministry of Environment, (2014). Updated National Strategy for the Protection of Biodiversity until 2020. Bratislava. Available at: https://www.minzp.sk/files/sekcia-ochranyprirodyakrajiny/dohovory/biodiverzita/narodna_strateg_ochr_biodiverz_2020.pdf

- Action plan for the implementation of measures resulting from the Updated National Strategy for the Protection of Biodiversity until 2020 (2014)
- Strategy for the Adaptation of the Slovak Republic to Climate Change - Update 2018
- Water Plan of Slovakia (2009-2015, update 2016-2021, draft 2022-2027)
- Concept of nature and landscape protection 2006-2015 (update until 2030 is still in preparation)
- Priority Action Framework for financing of Natura 2000 in Slovakia (2013, updated in 2015 and 2020)
- Greener Slovakia - Strategy of the Environmental Policy of the Slovak Republic until 2030 (Envirostrategy 2030)
- The Nature and Landscape Protection Policy 2006 - 2015 (2006). Revision and update of the Policy until 2030 is under development
- Updated Wetland Care Programme of Slovakia until 2024 (2019)
- Action plan for wetlands for the years 2019 - 2021 to the Updated Wetland Care Programme of Slovakia until 2024 (2019)
- National Forest Programme of the Slovak Republic (2007-2020, draft 2021-2030)
- Action Plan of the National Forest Programme for 2015-2020 (2015)
- Action Plan of the Slovak Republic 2014 - 2019 on enforcement of CITES and EU regulations on trade in wild fauna and flora (2013)
- List of indicators for status and protection of biodiversity in Slovakia (updated in 2016)
- The Sectoral Policy on Environmental Education and Awareness until 2025 (2015).

Coherence with international biodiversity commitments

The current position of the Slovak Republic and its commitments towards the environment and sustainable development have been shaped by its membership in the EU (since 2004), as well as the fact that Slovakia has signed and ratified or acceded to the majority of fundamental global and regional environmental conventions. These include the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES convention), the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), the Convention on Wetlands of International Importance (Ramsar Convention), the Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention), the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention), the Framework Convention on the Protection and Sustainable Development of the Carpathians (Carpathian Convention), the Convention on Co-operation for the Protection and Sustainable Use of the River Danube (Danube River Protection Convention) and others.¹¹³²

National Target A.1 is in coherence with EU target 1 and Aichi targets 11 and 12. National Target A.2 is in coherence with EU target 1 and Aichi target 1. National Target B.3 is in coherence with EU targets 2 and 3 and Aichi targets 5, 8, 10, 14, 15.¹¹³³

Requirements for coherence with international biodiversity commitments are also directly included in the concept of nature and landscape protection until 2030, as Operational Target 1.2. "Integrate international commitments and management needs in areas of international importance (with emphasis

¹¹³² Ministry of Environment, (2014). Updated National Strategy for the Protection of Biodiversity until 2020. Bratislava. Available at: https://www.minzp.sk/files/sekcia-ochranyprirrodyakrajiny/dohovory/biodiverzita/narodna_strateg_ochr_biodiverz_2020.pdf

¹¹³³ European Commission, (2019). The EU Environmental Implementation Review 2019. Country report - Slovakia. Available at: https://ec.europa.eu/environment/eir/pdf/report_sk_en.pdf

on biosphere reserves, UNESCO World Heritage Sites and Ramsar sites) and align them with Natura 2000 sites and national network protected areas." The aim is to harmonize in 2030 the needs and measures of mutually overlapping territories of the national network, territories of European importance and territories of international importance.¹¹³⁴

Coherence of EU Biodiversity Strategy

The outcomes of the surveys, as well as the interviews showed several examples of coherence issues between the implemented Biodiversity Strategy and other policies/strategies. These are mainly perceived as conflicts in the fields of agricultural policy, forestry policy, support of renewable energy, as well as infrastructure projects (e.g., highways). Without changing the policy at EU level in the mentioned fields towards biodiversity protection, there will be negative trend in the future.¹¹³⁵

The problem is also perceived in the process of adopting similar strategies. If the strategy, in this case the Biodiversity Strategy, is evaluated by one ministry (Ministry of the Environment), the other ministries do not seem to care, as if it were not their concern. In this case, it is very important to provide support from the Agro-department in charge of forests and agriculture. In order to ensure the protection of biodiversity also on forest and agricultural land, this is addressed in particular by tightening the regulations on nature protection, which affect in some way also e.g., into forestry. Then it happens that the laws contradict each other or that the law on nature protection shows something that the law on forests does not reflect. There is often a lack of some connection between the legislations of the two regulations in order to achieve their mutual synergy.¹¹³⁶

8.3.4 Relevance

Relevance of EU Biodiversity Strategy

Relevance of Target 1 and 2

The Ministry of the Environment argues that the Strategy is a very good tool, which covers the most important goals, activities and aspects of nature, biodiversity and landscape protection, translating the Aichi Biodiversity targets into a form which helps to address national priorities while contributing to EU and global targets. The Ministry argues that the Aichi Biodiversity Targets as well as the structure of the NBSAP should be retained, with few changes necessary.¹¹³⁷

In terms of objectives, the Strategy had very good and ambitious goals, but perhaps it was challenging for Slovakia, because the tools for implementation either did not exist or were difficult to implement. For example, the Operational Programme Quality of Environment was directly intended for the implementation of projects for the restoration of ecosystems, and the improvement of habitats and species of European importance. Unfortunately, the programme was set up in such a way that practical measures were almost impossible to implement. For example, some conditions for applicants were set so that even before the project was submitted, it was necessary to obtain the consents of all owners and

¹¹³⁴ Ministry of Environment, (2019). Concept of nature and landscape protection until 2030 (draft). Bratislava. An unapproved version is available at: <https://www.slov-lex.sk/legislativne-procesy/-/SK/dokumenty/LP-2019-890>

¹¹³⁵ Stakeholder survey results

¹¹³⁶ Stakeholder survey results

¹¹³⁷ Ministry of Environment, (2019). The Sixth National Report on the implementation of the Convention on Biological Diversity in the Slovak Republic. Bratislava. Available at: <https://chm.cbd.int/database/record?documentID=246532>

users of land on which the planned steps were to be carried out. In Slovakia, where there are often hundreds of landowners and a number of unknown landowners, measures could be implemented only in very small areas, where it was still very difficult to obtain the necessary approvals.¹¹³⁸

Relevance to stakeholder needs

In Slovakia, low environmental awareness in the field of ecosystem protection and ecosystem services still remains. There is insufficient education and training in this area. The promotion of the importance of ecosystems and their services for the protection of human health and life, including their property, is also relatively weak.¹¹³⁹

This could be changed in near future, as the importance of stakeholder involvement (listening) is also highlighted in the Concept of nature and landscape protection until 2030, under long-term goal 4: “To improve the effectiveness of nature and landscape protection by supporting research, education, awareness, communication and improving the acquisition and delivery system data in the field of nature, biodiversity and landscape protection and to ensure support for the active involvement of relevant groups in the protection and management of protected areas.” The framework also considers it important to involve land owners/users/administrators in educational and information activities and to support the activities of non-governmental organizations that are actively involved in nature protection. The public should be given the opportunity to engage in practical conservation activities. At the same time, it can also contribute to the collection of valuable data from the field (citizen science programs), or contribute to agreements on the care and management of specific areas in accordance with the objectives of nature, biodiversity and landscape protection. The creation of green jobs (work in the field of nature, biodiversity and landscape care) will be also supported by that.¹¹⁴⁰

According to the opinion of an interviewed professional from the State Nature Conservancy of the Slovak Republic, as practical projects were not implemented in the field very often (due to the reasons already mentioned), then not all relevant stakeholders were involved. This also applies to the fact that natural persons could not apply directly to projects from the Operational Programme Quality of Environment, so local people were also not involved. Another reason for the weaker involvement of stakeholders was that the State Nature Conservancy of the Slovak Republic does not have the personnel capacity to employ a separate site manager who would directly contact potential stakeholders. This should be different within the current large integrated LIFE project, where a person should always be nominated who will form a link between State Nature Conservancy and stakeholders.¹¹⁴¹

Relevance of EU Biodiversity Strategy to MS biodiversity needs

Based on the opinion of the participants of the survey, the Strategy and targets were set properly, however the realisation phase failed. This was mainly due to inappropriate agricultural policy at EU level which influenced all member states and due to low restrictions of economic use of forest areas in Natura

¹¹³⁸ Interview results

¹¹³⁹ Filčák, R., Považan, R., Adamec, M., Dokupilová, D., Chrenko, M., Izakovičová, Z., Kadlečík, J., Szemesová, J., Špulterová, J. and Šťastný, P., (2017). Environmental Development Scenarios 2020+. Sustainable growth in the context of biodiversity protection and climate change (short-term prospective study). Centre for Social and Psychological Sciences, Slovak Academy of Sciences, organizational unit Prognostic Institute of the Slovak Academy of Sciences. Available at: <https://www.enviroportal.sk/spravy/detail/9161>

¹¹⁴⁰ Ministry of Environment, (2019). Concept of nature and landscape protection until 2030 (draft). Bratislava. An unapproved version is available at: <https://www.slov-lex.sk/legislativne-procesy/-/SK/dokumenty/LP-2019-890>

¹¹⁴¹ Interview results

2000. These two main reasons are responsible for failure in reaching the targets. As there was no significant progress so far in relation to the targets, the needs related to biodiversity changed since 2011. There is a demand for more strict targets with even more activities needed for improvement and conservation of biodiversity. As time goes on, Slovakia is losing opportunities and it will be harder and harder to change the negative trends in the future.¹¹⁴²

8.3.5 EU added-value

Evidence of additional benefits compared to MS action

According to the opinion of the participants of the survey, the main benefit of the Biodiversity Strategy is in the creation of pressure to adhere to uniform rules across the EU. Without this kind of driver, local legislation would be insufficient to prevent nature degradation, there will be a loss of jobs related to biodiversity issues, as well as loss of financial mechanisms supporting biodiversity.¹¹⁴³

Evidence of change in MS ambition and/or commitments due to Biodiversity Strategy

The new Envirostrategy 2030 was prepared and approved to support implementation also of the Agenda 2030 and SDGs in Slovakia, including in the nature, biodiversity and landscape protection related goals. The Slovak Republic supports implementation of SDGs, it is coordinated by the vice-prime minister and the governmental office.¹¹⁴⁴

Some changes in commitment due to the Biodiversity Strategy were recorded in the survey. This is linked mainly to establishing the monitoring system for habitats and species, supporting the work for ecosystem services assessment and creation of new jobs related to biodiversity issues.¹¹⁴⁵

Evidence of change in sectoral ambition due to Biodiversity Strategy

The Biodiversity Strategy impacted the design and implementation of Slovak National Biodiversity Strategy and Action Plans, mainly in the agricultural and forestry sector. For the water sector, the WFD was stronger driver during the development of the relevant policy.¹¹⁴⁶

8.4 Conclusions

In 2018, the third reporting period for the EC on the state of habitats and species of European importance ended (for the years 2013 - 2018). Compared to the second reporting period (2007-2012), the condition of species and habitats has deteriorated in Slovakia, which is mainly due to improved implementation of knowledge about the monitoring system, improved expert estimates and identification of relevant data on species and habitats that were not previously known. The assessment of the situation is therefore closer to reality compared to previous reporting periods. In fact, it is not a deterioration compared to previous periods, but a better and more realistic assessment of the situation, which is more or less the same as in previous periods.¹¹⁴⁷

¹¹⁴² Stakeholder survey results

¹¹⁴³ Stakeholder survey results

¹¹⁴⁴ Ministry of Environment, (2019). The Sixth National Report on the implementation of the Convention on Biological Diversity in the Slovak Republic. Bratislava. Available at: <https://chm.cbd.int/database/record?documentID=246532>

¹¹⁴⁵ Stakeholder survey results

¹¹⁴⁶ Stakeholder survey results

¹¹⁴⁷ Ministry of Environment, (2020). Report on The State of The Environment of The Slovak Republic in 2018 Extended assessment of quality and care (Biodiversity). Bratislava. Available at: <https://www.enviroportal.sk/uploads/report/9361.pdf>

Inadequate setting of criteria for the use of funds from the Operational Programme Quality of Environment, as well as insufficient cross-sectoral communication in the preparation of strategic documents and plans for individual sectors, proved to be a critical point in the implementation of measures under the Strategy. All participants in the survey and interviews agreed that cooperation between sectors as nature protection, water management, fishery, agriculture, forestry or municipalities is crucial.¹¹⁴⁸

For the next period (the 2030 Strategy), it is essential that individual policies are coherent and that biodiversity is taken across the various sectors. The role of the European Commission will also be important - how the European Commission will insist on the conditions when assessing Member States' proposals when negotiating an ESIF. For example, for the use of resources in the framework of regional development for public spaces, one of the conditions should be the preparation of projects in line with the Climate Change Adaptation Strategy and the Biodiversity Strategy. This means adjusting the criteria of projects so, that they meet the criteria for adaptation or biodiversity. This will ultimately improve the overall urban environment, as well as the state of biodiversity.¹¹⁴⁹

According to the opinion of the interviewees, it would be very helpful if individuals could also be applicants for funding for ecosystem restoration, and that the consent of owners and users would no longer be required in the project preparation phase. At the same time, an effective connection to the Rural Development Programme and the Ministry of Agriculture and financing of direct payments would be necessary. Slovakia can move forward only to the extent that it succeeds, within the framework of agricultural policy, in setting up land management in accordance with the maintenance and improvement of habitats and species of European importance, as well as setting the conditions for financing in agricultural policy. This is because most of the money is located in this sector, as well as most of the users doing practical management and possibility to make a significant contribution. This is another key factor that is directly linked to the restoration of ecosystems and the maintenance of habitats.¹¹⁵⁰

¹¹⁴⁸ Stakeholder survey and Interview results

¹¹⁴⁹ Interview results

¹¹⁵⁰ Interview results

9 The Netherlands

9.1 Introduction

9.1.1 Overview of key biodiversity state, trends, pressures, and drivers

After more than 70 years of significant deterioration of biodiversity in The Netherlands, declining trends in overall biodiversity have been levelling off in recent years thanks to targeted efforts to restore habitat and reduced environmental pressures such as water pollution¹¹⁵¹. However, clear positive trends over the last 10 years are only observed in nature protected areas, while biodiversity in urban areas, marine areas and especially rural areas declined further¹¹⁵². The latest State of Nature reporting under the EU Nature Directives shows only modest improvements in conservation status assessments of EU-wide protected habitats and species, with 46 of habitat assessment (88%) and 55 of non-bird species assessments (69%) still reporting an unfavourable status¹¹⁵³. Of these assessments, 16 (35%) and 31 (56%) show a declining or unknown trend. Over 40% of bird species have decreasing or unknown short- and long-term trends¹¹⁵⁴.

The three most-reported pressures and threats on EU-protected habitats in the Netherlands are agriculture, human-induced changes to water regimes and natural processes (e.g., vegetation succession) all impacting over 50% of assessments¹¹⁵⁵. Other important threats impacting habitats are alien- and problematic species and mixed source pollution, especially airborne reactive nitrogen emissions from livestock farming and combustion (transport). Pressures and threats on species reported are similar, but with additional high impacts from built infrastructure development. Agricultural pressures to biodiversity remain the largest challenge on land, both through intensified land management (e.g., threatening internationally important meadow bird populations, landscape elements) as well as indirect impacts on protected areas and other sites rich in biodiversity especially through nutrient pollution and drainage¹¹⁵⁶.

¹¹⁵¹ Rijksoverheid (2021) Compendium voor de Leefomgeving, Indicatoren biodiversiteit. Available at: [https://www.clo.nl/search/topic?nid=20877&stopics\[\]=Biodiversiteit](https://www.clo.nl/search/topic?nid=20877&stopics[]=Biodiversiteit) [Accessed 05 March, 2021]

¹¹⁵² Government of the Netherlands (2021) Compendium voor de Leefomgeving, Samenvattend overzicht van beleidsrelevante natuurindicatoren voor provincies en Rijk. Available at: <https://www.clo.nl/indicatoren/nl1617-duiding-provinciale-indicatoren?ond=20877> [Accessed 05 March, 2021]

¹¹⁵³ EEA (2021) State of Nature in the EU, National summary dashboards, Habitats and species - Conservation status and trends of habitats and species. Available at: <https://www.eea.europa.eu/themes/biodiversity/state-of-nature-in-the-eu/article-17-national-summary-dashboards/conservation-status-and-trends> [Accessed 05 March, 2021]

¹¹⁵⁴ EEA (2021) State of Nature in the EU, National summary dashboards, Birds - Breeding population and distribution trends. Available at: <https://www.eea.europa.eu/themes/biodiversity/state-of-nature-in-the-eu/article-12-national-summary-dashboards/breeding-population-and-distribution-trends> [Accessed 05 March, 2021]

¹¹⁵⁵ EEA (2021) State of Nature in the EU, National summary dashboards, Habitats and species - Main pressures and threats. Available at: <https://www.eea.europa.eu/themes/biodiversity/state-of-nature-in-the-eu/article-17-national-summary-dashboards/main-pressures-and-threats> [Accessed 05 March, 2021]

¹¹⁵⁶ WWF Netherlands (2020) Living Planet Report Nederland, Natuur en landbouw verbonden. Available at: <https://www.wwf.nl/globalassets/pdf/lpr/wwf-living-planet-report-nederland-2020-natuur-en-landbouw-verbonden.pdf>

Dutch marine biodiversity experiences a wide range of pressures and threats of which bottom-disturbing fisheries remains one of the most significant¹¹⁵⁷. Other important high-impact pressures and threats reported to EU-protected coastal habitats and species are human-induced changes in water regimes (e.g., through flood defence), climate change, and alien species¹¹⁵⁸.

The last national assessment of ecosystem services found that although Dutch ecosystems make an important contribution to the need for a sustainable supply of goods and services, they do not meet the total demand¹¹⁵⁹. In addition, the assessment found that for most of the services demand is growing faster than supply since the 2000 baseline.

9.1.2 Overview of the national biodiversity policy framework, governance, and overall progress towards the EU and global 2020 biodiversity targets

Government responsibilities biodiversity policy

In the Netherlands, the Ministry of Agriculture, Nature and Food Quality (LNV) bears final responsibility for international biodiversity policy, including the country's contribution to the CBD Strategic Framework and EU Biodiversity Strategy. A significant decentralisation exercise between 2011 and 2013 shifted the main responsibility for the country's nature policy, and other relevant policies for biodiversity mainstreaming such as in agricultural nature management, to the country's twelve Provincial governments. This new arrangement was formalized in law through a new Nature Conservation Act, which entered into force on 01 January 2017¹¹⁶⁰. The national Ministry of Infrastructure and Water Management, and its executive agency for water management (RWS), remain responsible for nature policy in large water bodies, including marine sites.

National strategy and action plan(s) for biodiversity in The Netherlands

In its 6th National Report to the CBD (6NR), The Netherlands reported that it *'...has committed itself to nature objectives stated in the EU Biodiversity Strategy and thus indirectly to those in the Convention on Biological Diversity.'* and that *'The national targets are based on the European targets and related to the Aichi Biodiversity Targets.'* The 6NR also emphasized the importance of EU law, and its national implementation, in preventing biodiversity loss and encouraging ecological restoration in The Netherlands, in particular through the Nature- and Water Framework Directives. As National Biodiversity Strategy and Action Plan (NBSAP) the 6NR reported a series of policy documents. They are briefly described in the following paragraphs.

¹¹⁵⁷ WWF Netherlands (2017) Living Planet Report Nederland, Zoute en zilte natuur in Nederland. Available at: <https://www.wwf.nl/globalassets/pdf/lpr/lpr-nl-rapport-2017-zoute-en-zilte-natuur.pdf>

¹¹⁵⁸ EEA (2021) State of Nature in the EU, National summary dashboards - Habitats and species, Main pressures and threats. Available at: <https://www.eea.europa.eu/themes/biodiversity/state-of-nature-in-the-eu/article-17-national-summary-dashboards/conservation-status-and-trends> [Accessed 05 March, 2021]

¹¹⁵⁹ Government of the Netherlands (2021) Compendium voor de Leefomgeving, Ecosysteemdiensten in Nederland, 2020. Available at: <https://www.clo.nl/indicatoren/nl1572-goederen-en-diensten-van-ecosystemen-in-nederland-> [Accessed 05 March, 2021]

¹¹⁶⁰ Government of the Netherlands (2021) Legislation protecting nature in the Netherlands. Available at: <https://www.government.nl/topics/nature-and-biodiversity/legislation-protecting-nature-in-the-netherlands> [Accessed 05 March, 2021]

Whereas in 1990 and 2000 The Netherlands prepared explicit 10-year strategies for nature and biodiversity, no such strategy was adopted for 2010-2020¹¹⁶¹. After the Dutch parliament asked for a biodiversity implementation plan, the government in June 2013 adopted a **Natural Capital Agenda (NCA)**¹¹⁶² which took the CBD commitments and EU Biodiversity Strategy as a starting point. The NCA included 16 actions that covered most EU Biodiversity Strategy priorities, however not all and some only partly. As during this period, a separate implementation agreement on national nature policy was in preparation (see 'Nature Pact' below), the Implementation Agenda did not include provisions on this and focussed on the '*conservation and sustainable use in an international context*'. For the Netherlands' overseas territories, in 2014 a **Nature Policy Plan for the Caribbean Netherlands** was adopted for the period 2013-2017¹¹⁶³. A follow-up policy plan was only adopted in 2020¹¹⁶⁴.

In 2013 the national and provincial authorities agreed in the **Nature Pact (NP)** implementation agreement¹¹⁶⁵. The agreement, which took a timeline to 2027 aligning with the final deadline for achieving Good Status of all water bodies under the EU Water Framework Directive, did not specifically refer to CBD or EU Biodiversity Strategy targets. However, it explicitly aims at the achievement of several of them in particular through the implementation of the Netherlands' National Ecological Network (NNN), which includes Natura 2000 sites designated under the EU Nature Directives. It also included other relevant agreements on agricultural nature management, species protection within and outside the NNN, as well as ecological measures under the EU Water Framework Directive.

In 2014 the government adopted a **National Nature Vision**¹¹⁶⁶ (NNV) in its own words '*a strategic document with the main lines of government policy, as it will be shaped in consultation with provinces and municipalities*'. Unlike the Nature Pact it did not set a concrete deadline but prosed a similar timeframe of '*at least 20 years*'. The introduction of the document included references to the Aichi targets and EU Biodiversity Strategy, however it also explicitly stated that the National Vision should not be regarded as a static policy framework and would not have legal effect. The NNV advocated a shift in thinking about nature policy, from protecting nature *from* society towards strengthening nature *with* society. Biodiversity targets should be reached by using all opportunities for synergy between the value of nature and social and economic activities. Although the NNV was broader in scope than the Nature Pact, it focussed on the same focus areas of terrestrial nature conservation (EU BDS 2020 T1) and integration with water- and agricultural management (T3). In relation to T2, the Vision included strong language on the importance of valuation of nature and some initiatives in which restoration took place in combination with other societal objectives. Other EU Biodiversity Strategy target areas of integration with fisheries (T4) and invasive alien species (T5) were not addressed in the NNV.

¹¹⁶¹ Sanders, M.E., R.J.H.G. Henkens & D.M.E. Slijkerman (2019) Convention on Biological Diversity. Sixth national report of the Kingdom of the Netherlands. WOTtechnical Report 156. Wageningen: WUR. Available at: <https://www.wur.nl/nl/Publicatie-details.htm?publicationId=publication-way-353534313930>

¹¹⁶² Government of the Netherlands (2013) Uitvoeringsagenda Natuurlijk Kapitaal, <https://www.rijksoverheid.nl/documenten/kamerstukken/2013/06/22/kamerbrief-over-uitvoeringsagenda-natuurlijk-kapitaal>

¹¹⁶³ Ministry of Economic Affairs (2014) Nature Policy Plan The Caribbean Netherlands, Nature Policy for the Caribbean Netherlands 2013-2017. Available at: <https://www.government.nl/documents/publications/2014/02/03/nature-policy-plan-the-caribbean-netherlands>

¹¹⁶⁴ Ministry of Agriculture, Nature and Food (2020) Natuur- en milieubeleidsplan Caribisch Nederland 2020-2030, <https://www.rijksoverheid.nl/documenten/beleidsnotas/2020/04/24/natuur-en-milieubeleidsplan-caribisch-nederland-2020-2030>

¹¹⁶⁵ Ministerie van EZ & IPO (2013) Natuurpact ontwikkeling en beheer van natuur in Nederland, Den Haag. Available at: <https://www.rijksoverheid.nl/documenten/brieven/2013/09/18/natuurpact-ontwikkeling-en-beheer-van-natuur-in-nederland>

¹¹⁶⁶ Government of the Netherlands (2014) Rijksnatuurvisie 2014 'Natuurlijk verder'. Available at: <https://www.rijksoverheid.nl/documenten/rapporten/2014/04/01/rijksnatuurvisie-2014>

Progress towards the EU and global 2020 biodiversity targets

In the 6NR The Netherlands reported progress on the EU Strategy's six headline targets and for all six targets reported progress but at an insufficient rate¹¹⁶⁷. The Netherlands' Environment Assessment Agency (PBL) in 2020 published a progress assessment of Dutch nature- and biodiversity policy in an international context. It drew on a wide range of relevant recent resources, including the 6NR to the CBD, an in-depth evaluation report on the implementation of the Nature Pact, and most recent reporting under the Birds- and Habitats Directives. Its main conclusions for the period 2010-2020 are that:

- 1) Some ecosystems and species show recovery, but the overall state of biodiversity has not improved as intended;
- 2) Spatial cohesion of nature has improved, however improvement of environmental conditions for nature stagnated;
- 3) Awareness of the importance of nature grew among citizens and in the business sector, as well as the willingness and capacity to act accordingly, however policy- and economic incentives have been missing to help transform them into action;
- 4) Nature-based solutions to pressing societal challenges other than biodiversity conservation have been underused;
- 5) There has been a lack of bottom-up implementation, policy coherence between governance levels and use of more legally binding instruments.

Table 9-1 National targets, measures and their relevant NBSAPs in the Netherlands derived from the headline targets of the EU Biodiversity Strategy to 2020

EU Biodiversity Strategy 2020	NL National targets	Related strategies/action plans/measures ¹¹⁶⁸ (Key: NNV = 2014 National Nature Vision; NP = 2013 Nature Pact; NCA = 2013 Natural Capital Agenda; PNVs = Provincial Nature Visions)
Headline target: halt the loss of biodiversity and the degradation of ecosystem services	The Netherlands used the CBD Aichi- and EU Biodiversity Strategy Targets to guide its national strategy and actions, however they were not systematically broken down at country level. The 6NR listed 6 main 'national measures' taken to achieve them, which are listed in the cells below in this column.	The NNV referred to the international headline targets to halting biodiversity loss and ecosystem degradation.
Target 1: Fully implement the Birds and Habitats Directives	<p>Measure 1: Create new habitat within the national ecological network with the aim of establishing viable species populations;</p> <p>Measure 2: Implement the Nature Conservation Act</p>	<p>NBSAPs in the Netherlands derived the following objectives from the first headline target of the EU Biodiversity Strategy to 2020:</p> <ul style="list-style-type: none"> • Protect and improve the conservation status of species (NNV, NP, PNVs); • Improve environmental conditions in pursuit of the goals set by the Birds and Habitats Directives (NNV, NP, PNVs); • Improve spatial conditions by creating a robust national ecological network (NNV, NP, PNVs);

¹¹⁶⁷ Kingdom of the Netherlands (2019) Sixth National Report of the Netherlands to the UN Convention on Biological Diversity. Available at: <https://chm.cbd.int/database/record?documentID=246989>

¹¹⁶⁸ Taken from Sanders et al, 2019 (see ref 1161)

	<p>Measure 3: Subsidies for conservation management measures important for biodiversity</p> <p>Measure 4: The Programmatic Approach to Nitrogen</p>	<ul style="list-style-type: none"> • Effective regulation to protect nature and reduce burden on business and the public (NNV, PNVs); • Build an open, learning knowledge network: know more together; knowledge sharing to increase awareness, public support, and participation (NNV, NCA, PNVs). <p>The most important NBSAP for this target has been the 2013 Nature Pact in which the ambitions for the restoration and management of nature in the Netherlands were agreed upon between the Dutch national government and the provinces for the period 2011 up to and including 2027.</p>
<p>Target 2: Maintain and restore ecosystems and their services</p>	<p>Measure 1: Create new habitat within the national ecological network with the aim of establishing viable species populations;</p> <p>Measure 2: Implement the Nature Conservation Act</p> <p>Measure 6: Utilising the self-organising capacities of society by stimulating, facilitating and financially support green initiatives.</p>	<p>NBSAPs in the Netherlands derived the following objectives from the first headline target of the EU Biodiversity Strategy to 2020:</p> <ul style="list-style-type: none"> • regional development with nature combinations (recreation, drinking water, energy): green living and working; develop and build with nature (NNV, PNVs); • future-proof nature: more room for natural processes (NNV, PNVs); • improve spatial conditions by creating a robust national ecological network (NP); • by 2020, all ecosystem services in the Netherlands will have been identified, along with recognition of their contribution to the economy, and this will be incorporated into the decision-making process of government and the private sector (NCA). <p>The most important NBSAP for this target has been the 2014 National Nature Vision ‘The Natural Way Forward’ which focuses on the protection and sustainable use of biodiversity in collaboration with citizens, businesses, and civil society organisations.</p>
<p>Target 3: Increase the contribution of agriculture and forestry to biodiversity.</p>	<p>Measure 3: Subsidies for conservation management measures important for biodiversity</p> <p>Measure 5: Stimulating sustainable use of natural capital and mainstreaming nature for the benefit of society and the economy;</p>	<p>NBSAPs in the Netherlands derived the following objectives from the first headline target of the EU Biodiversity Strategy to 2020:</p> <ul style="list-style-type: none"> • a more effective and regional approach to agri-environmental management (NP); • nature-inclusive agriculture; nature and agriculture as natural partners (NNV); • by 2020, sustainable agricultural management will be in place to ensure the conservation of biodiversity and natural capital (NCA). <p>In 2018 The Netherlands adopted an Agricultural Vision under which one of the objectives is related to the third main target of the European biodiversity strategy. It serves as a benchmark for assessing national policy plans; and one of the criteria is that they should benefit ecosystems (water, soil, air), biodiversity and the natural</p>

		<p>values of farm landscapes¹¹⁶⁹. However, this has had little impact on developments between 2010 and 2020 in focus of this evaluation.</p> <p>Unlike in many other countries, in the Netherlands forestry has a conservation objective and is not part of the agricultural domain. Forestry is generally sustainable. Most of the forested area of the Netherlands is included in the NNN and is eligible for subsidies for forest management. Almost 90% of timber used in the Netherlands is imported. Dutch policy therefore focuses on certified international timber chains to support sustainable forest management in other countries.</p>
<p>Target 4: Ensure the sustainable use of fisheries resources</p>	<p>Measure 5: Stimulating sustainable use of natural capital and mainstreaming nature for the benefit of society and the economy;</p>	<p>Only the NCA derived the following objective from the fourth main target of the European biodiversity strategy:</p> <ul style="list-style-type: none"> By 2020, both the aquaculture chain and the wild caught fish chain will meet international sustainability criteria for stock management and biodiversity (NCA). <p>The EU's Common Fisheries Policy (CFP), the Nature Directives (NDs) and the Marine Strategy Framework Directive (MSFD) are the most important policies on sustainable fisheries and the marine environment in The Netherlands. The latest national target stipulated that between 2015 and 2020 catch limits should be set that are sustainable and maintain fish stocks over the long term.</p> <p>The government's white paper '<i>Nature Ambition for the Large Water Bodies: 2050 and beyond</i>' published in 2014 sketches a vision of resilient, robust, and climate-proof open water ecosystems with opportunities for sustainable use of nature combinations such as fishing and recreation. The 'Programmatic Approach to the Ecology of Large Water Bodies' (Programmatisch Aanpak Ecologie Grote Wateren) and EU LIFE IP Delta nature 2016-2022 set out to implement that vision for nature conservation and water quality while ensuring safety and providing for sustainable use.</p>
<p>Target 5: Combat Invasive</p>	<p>(No specific main measure was prioritized for IAS; measures were taken however).</p>	<p>None of the reported NBSAPs included targeted action on IAS. The Netherlands mainly implements the EU Invasive Alien Species regulation and since 2010 is a party to the International Convention for the Control and Management</p>

¹¹⁶⁹ LNV (2018) Landbouw, natuur en voedsel: waardevol en verbonden. Available at: <https://www.rijksoverheid.nl/ministeries/ministerie-van-landbouw-natuur-en-voedselkwaliteit/documenten/beleidsnota-s/2018/09/08/visie-landbouw-natuur-en-voedsel-waardevol-en-verbonden>

Alien Species.		of Ships' Ballast Water and Sediments (BWM) under the auspices of the International Maritime Organization (IMO).
Target 6: Step-up action to tackle the global biodiversity crisis	(No specific main measure was prioritized to tackle the global biodiversity crisis; measures were taken however).	<p>These NBSAPs derive the following objectives from the sixth main target of the EU Biodiversity Strategy:</p> <ul style="list-style-type: none"> • by 2020, the most important agricultural raw material chains will meet sustainability criteria for biodiversity (NCA); • fair agreement on the use of plant genetic resources (NCA); • green enterprise: driver of the economy (NV). <p>The most important NBSAP for this target is the Natural Capital Agenda. This policy plan focuses on the conservation and sustainable use of biodiversity, both nationally and internationally.</p>

9.2 Choice of targets to focus the national case studies, and justification.

The significant remaining challenge in the Netherlands in 2010 to implement nature protection (Target 1) and -restoration (Target 2) objectives both in the terrestrial and marine environment, and in the latter especially in relation to fisheries (Target 4) resulted in the choice for these three headline targets for a more in-depth focus in this national case study. The challenge related to agriculture (Target 3a) was and is arguably still the most significant, however The Netherlands' approach to agriculture and biodiversity has been described in detail already in other recent studies¹¹⁷⁰, and was therefore withheld for this one.

In 2010, the poor state of biodiversity was already well-understood: The National Environmental Data Compendium in that year reported that of each species groups present in The Netherlands, at least a third was Red listed¹¹⁷¹. Based on the then latest available EU State of Nature Reporting, the Netherlands was 7th last in terms of favourable conservation status of species, and 4th last in terms of habitats. That same year, the incoming Rutte I government proposed to decentralize nature policy to the Provinces in combination with a €600 million budget cut. This while the acquisition of new nature areas to be included in the NNN¹¹⁷² was only at 60% of agreed targets set in 2000 and the restoration of already acquired areas only halfway. In addition, only 40% of terrestrial nature was found to be of fair to good quality based on the presence of target species¹¹⁷³.

The Netherlands Environmental Assessment Agency estimated the nature quality in the marine environment in the period 2000-2007 to be only half of what it would be in a natural state, with particularly low representative quality for marine mammals, higher plants and fish species and declining

¹¹⁷⁰ E.g., the in-depth country case study for The Netherlands under a recent formal European Commission evaluation of the biodiversity impacts of CAP implementation (unpublished) to inform: Alliance Environnement (2019) Evaluation of the impact of the CAP on habitats, landscapes, biodiversity. Available at: https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/cmef/sustainability/impact-cap-habitats-landscapes-biodiversity_en

¹¹⁷¹ Wageningen University (2010) Nature Today article of 31 October 2010: 'The Netherlands are the European laggard in protecting biodiversity'. Available at: <https://www.naturetoday.com/intl/nl/nature-reports/message/?msg=17106>

¹¹⁷² At that time, the NNN was still called Ecological Main Structure (EHS), Europe's first planned spatial-ecological network, first proposed in 1990 and formally adopted in 2000.

¹¹⁷³ LNV (2011) Groot project Ecologische Hoofdstructuur Vierde voortgangsrapportage Rapportagejaar 2010. Available at: <https://zoek.officielebekendmakingen.nl/blg-134183.pdf>

trends for pelagic fish-, benthic-and bird species¹¹⁷⁴. The intensity of bottom-trawl fishing was identified of being of particular importance of benthic habitats and species with knock-on effects on the wider marine ecosystems. Only 20% of the Netherlands' marine Natura 2000 areas was found to be fished in ecologically sustainable ways.

Despite these large challenges identified in 2010, and the modest overall improvements in biodiversity as described in section 1.2, various innovative and sometimes ambitious measures were taken in The Netherlands to protect and restore biodiversity under these three target areas, resulting in local successes. The potential of scaling up these measures in 2020-2030 and possibly inspire similar initiatives in other EU Member States and third countries, has been a second key selection criteria to prioritise these three targets and in particular Target 2.

9.3 Country-specific biodiversity target focus

9.3.1 Effectiveness

Overall progress towards the EU Biodiversity Strategy

As outlined in section 1.1, based on available biodiversity indicators, the Netherlands between 2010- and 2020 taken as a whole only made moderate national progress towards contributing to the EU Strategy's headline target to '*halt the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restore them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss.*'. The average condition and trends of biodiversity in the Netherlands are stable, and for some endangered species trends are improving, while for others they are still in decline. Overall, the country still experiences a homogenisation of biodiversity. The Netherlands has therefore not succeeded in halting the loss of biodiversity. While biodiversity in terrestrial protected areas in The Netherlands benefitted of targeted measures and is showing overall modest recovery since 2010, biodiversity in other parts of the country declined further. Environmental baseline conditions e.g., in relation to land use intensity, nitrogen deposition and hydrological regimes prevent effective protection and undermine restoration benefits. Despite significant ecosystem restoration efforts, growing ecosystem service demand has outstripped services provided.

Key success/failure stories on the implementation of the EU Biodiversity Strategy in MS

The most important limitation to this evaluation of implementation the EU Biodiversity Strategy to 2020 in the Netherlands is that, as outlined in section 1.2, it was never systematically translated into national strategies and action plans. PBL concluded that while the goals and broad action areas of the UN CBD's Strategic Framework, the EU Biodiversity Strategy and those of The Netherlands were generally coherent, how the various national and sub-national level strategies and action plans would achieve this coherence and the common effort required by different parties to meet these targets in practice by 2020 was never made explicit¹¹⁷⁵. In the Netherlands' 6th National Report to the CBD, six main measures are described taken to achieve the EU Strategy's headline targets in The Netherlands, however they were not defined as such in 2011¹¹⁷⁶ and do not cover all the six EU target areas. This lack of clarity and transparency makes it difficult to analyse the causal link between the EU Strategy and implementation action in The Netherlands and therefore evaluate them. Despite this limitation, many relevant implementation actions

¹¹⁷⁴ Government of the Netherlands (2010) Environmental data compendium indicator page 'Natuurkwaliteit Noordzee, Waddenzee en Delta-wateren, 2000 - 2007'. Available at: <https://www.clo.nl/indicatoren/nl145402-natuurkwaliteit-zoute-wateren>

¹¹⁷⁵ PBL (2020) Nederlands natuurbeleid in internationale context. Voortgang realisatie natuur- en biodiversiteitsbeleid. Available at: <https://www.pbl.nl/publicaties/nederlands-natuurbeleid-in-internationale-context>

¹¹⁷⁶ For example, the 5th national report of 2014 provides a different, broader, range of measures based on the 2013 Implementation Agenda Natural Capital, 2013 Nature Pact and the at that time near-completed 2014 Nature Vision.

were taken between 2010 and 2020 towards the EU Strategy's objectives. Evidence on the most important ones, and key lessons learnt from them, are summarized in the following sections.

Evidence of successful implementation of focus targets

Target 1: Fully implement the Birds and Habitats Directives

The period 2010-2020 saw important progress in implementing the EU Nature Directives in The Netherlands, while not always by agreed deadlines. While the Netherlands by 2010 had formally notified all its Sites of Community Importance to the Commission (representing 15% of the country's terrestrial surface¹¹⁷⁷), by the end of the six-year transposition deadline that same year only 56 of the 162 sites had been formally designated as Special Area of Conservation (SAC) under national law¹¹⁷⁸. An EU pilot opened in 2013 accelerated progress, and the Netherlands reported in 2018 that all SCIs had been designated as SAC¹¹⁷⁹.

In terms of management planning, the 2010 budget cuts in combination with the decentralisation process created significant uncertainty and discussion on new responsibilities and resources to implement them. In this same period, the national government was also developing a Programmatic Approach to Nitrogen (PAN) to dealing with excess nitrogen deposition in Natura 2000 sites¹¹⁸⁰ which was only concluded in 2015. As the Netherlands wanted to include measures defined under the PAN in the management plans of the Natura 2000 sites it targeted, a significant alignment challenge was added to the management planning process. Despite these two delaying factors, today management plans are in place for all sites except the 4 marine sites in the Exclusive Economic Zone (EEZ)¹¹⁸¹. Progress was aided by a legal deadline in the Dutch Nature Conservation Act sets to have management plans in place within three years of designation.

While the budget cuts in 2010 triggered a downward setting of investment and objectives in implementing the NNN which includes Natura 2000, since then a series of decisions partly restored ambition to that between 1990-2010 (however not fully, see evidence of unsuccessful implementation below). The Netherlands also made use of integrated EU-funding to implement the EU Nature Directives, through rural development (EAFRD) and to a lesser extent regional development (ERDF, Interreg) and LIFE. The LIFE 'Delta nature' Integrated Project (€17 million, 2016-2022) supported significant steps forward in the implementation of Natura 2000 objectives in large water bodies.

Target 2: Maintain and restore ecosystems and their services

After the European Commission published its Green Infrastructure Strategy in 2013, and in 2014 provided guidance to Member States on how to develop Restoration Prioritisation Frameworks (RPFs), the Netherlands in 2014 commissioned a quick scan for national restoration opportunities¹¹⁸². However, in the end no RPF was published and there is currently no nationally coordinated approach to ecosystem restoration in The Netherlands. Nonetheless, between 2010 and 2020 considerable restoration actions

¹¹⁷⁷ EEA (2020) Natura 2000 Barometer. Available at: <https://www.eea.europa.eu/data-and-maps/dashboards/natura-2000-barometer>

¹¹⁷⁸ Commissie van deskundigen natuurwetgeving (2011) Implementatie van Natura 2000 in Nederland. Available at: <https://zoek.officielebekendmakingen.nl/blg-129388.pdf>

¹¹⁷⁹ IEEP (2018) Country profile for The Netherlands in support of the organisation of bilateral 'nature dialogues', in the context of Action 5 of the EU Action Plan for Nature, People and the Economy. [Not published]

¹¹⁸⁰ Bij12 (2017) Webpage 'Over het voormalige PAS'. Available at: <https://www.bij12.nl/onderwerpen/stikstof-en-natura2000/over-het-pas/> [Accessed 05 March 2021]

¹¹⁸¹ Bij12 (2021) Webpage 'Natura 2000 beheerplannen'. Available at: <https://www.bij12.nl/onderwerpen/natuur-en-landschap/natura-2000-beheerplannen/> [Accessed 05 March 2021]

¹¹⁸² WUR (2015) Ecosysteemherstel in Nederland: een quick-scan naar kansen. Available at: <https://library.wur.nl/WebQuery/wurpubs/485811>

were undertaken in The Netherlands which contributed to the implementation of Target 2 of the EU Strategy.

Finalisation and restoration of the National Nature Network: Despite the budget cuts at the start of the 2010-2020 cycle, further progress was made in the acquisition and restoration of areas to complete the NNN which grew in 2010-2018 from 900 to over 1100 km² (+17%). The NNN now measures 26% of the land and inland water area. The area in the NNN in which restoration measures were taken increased from 513 to over 900 km² (+43%) in this same period. An important driver of restoration measures was the Programmatic Approach to Nitrogen, under which between 2015-2021, 1847 restoration measures were agreed in 118 nitrogen-sensitive Natura 2000 sites. Measures are mostly the removal of historically built-up nitrogen through vegetation and soil removal, and hydrological measures to increase the resilience of remaining habitats and mitigate the negative effects of remaining reactive nitrogen. By March 2019, 516 measures had been completed and 1,255 measures are currently still in progress¹¹⁸³.

Multi-annual Programme Defragmentation (2004-2021): The Multiannual Programme Defragmentation (Meerjarenprogramma Ontsnippering, MJPO) is a national programme in which the national government, ProRail (responsible for the railway system) and provinces worked together to resolve ecological bottlenecks, often in dialogue with municipalities, regional water authorities and nature conservation organisations. In total more than 500 measures were taken in 176 sites to reconnect natural areas in The Netherlands, e.g., by creating wildlife passages or tunnels based on a thorough analysis of bottlenecks for ecological coherence¹¹⁸⁴.

Flood risk management through floodplain restoration: Following high water events in 1993 and 1995, the Netherlands adopted in 2000 a new approach to flood risk management called ‘room for the river’ which focussed on creating more space for flooding rather than further raising dikes where possible. While different approaches of providing this space were taken, at the core was acquisition of floodplains for extraction of sand and gravel, followed by nature restoration and change of function of areas to nature and recreation functions. The two largest multi-annual programmes ‘Ruimte voor de Rivier’ (2006-2019, €2,3 billion) and ‘Maaswerken’ (1997-2018, €1,5 billion) implemented large-scale projects in nearly 100 locations on the Rhine- and Meuse river systems, recreating thousands of hectares of riverine nature areas resulting in significant biodiversity improvements¹¹⁸⁵.

Restoring longitudinal river continuity: Besides floodplain restoration, some important steps forward to restore ecological connectivity within the Dutch river system were made between 2010-2020¹¹⁸⁶. While measures had been taken since the 1990’s and the main channels of the Rhine and Meuse were declared fully accessible for migratory fish by 2007, with the implementation of River Basin Management Plans under the EU Water Framework Directive (in NL around 2008) and an agreement between Belgium, The Netherlands and Luxembourg to overcome all barriers in all river basins by 2027 action scaled up

¹¹⁸³ Bij12 (2021) Webpage ‘Herstelmaatregelen in beeld’. Available at: <https://www.bij12.nl/onderwerpen/stikstof-en-natura2000/herstelmaatregelen-in-beeld/> [accessed 05 March 2021]

¹¹⁸⁴ MJPO (2020) Eindboek Meerjarenprogramma Ontsnippering Natuur verbonden, meer leefruimte voor dieren in Nederland. Available at: <https://www.mjpo.nl/eindboek/>

¹¹⁸⁵ See for example Straatsma M. et al (2017) Biodiversity recovery following delta-wide measures for flood risk reduction. Science Advances 08 Nov 2017: Vol. 3, no. 11, e1602762

DOI: 10.1126/sciadv.1602762. Available at: <https://advances.sciencemag.org/content/3/11/e1602762>

¹¹⁸⁶ RWS (2020) Webpage ‘Make way for fish’. Available at: <https://www.rijkswaterstaat.nl/water/waterbeheer/waterkwaliteit/maatregelen-waterkwaliteit/ruim-baan-voor-vis/index.aspx> [accessed 05 March 2021]

significantly. This included green light on some far-reaching measures such as the partial re-opening of the Haringvliet¹¹⁸⁷ and the elusive 3 km long ‘Fish Migration River’ through the Afsluitdijk dam.

Building with nature: Besides those related to riverine flood risk management, several other large and innovative ecosystem recreation projects were implemented in which biodiversity was only a secondary objective. Two projects stand out: The ‘*Sand Motor*’¹¹⁸⁸ finalized in 2011 which recreated with help of naturally occurring marine currents a large sandbank to aid coastal protection, and the ‘*Marker Wadden*’¹¹⁸⁹ in which islands, Marshes and mudflats are created in one of the country’s largest freshwater lakes with and against historically accumulated silt that prevented the achievement of EU Water Framework Directive objectives.

Knowledge development and -exchange: The Netherlands made significant progress in the development of national natural capital accounts¹¹⁹⁰ and a publicly accessible Atlas Natural Capital which was launched in 2015¹¹⁹¹. In 2015 a TEEB¹¹⁹² city tool was launched for municipalities¹¹⁹³. The Netherlands also has an interesting Knowledge Network Development and Management Nature Quality (OBN) in which researchers, conservation site managers, universities, consultancies, NGO’s, and governmental bodies, such as provinces and water boards, closely cooperate to restore ecosystems and nature reserves. In this network, knowledge and practice intermingle, and science and nature management jointly look for the most effective approaches to enhance sustainable conservation of important ecosystems in the Dutch landscapes¹¹⁹⁴.

Target 4: Ensure the sustainable use of fisheries resources

In 2010 The Netherlands transposed the EU Marine Strategy Framework Directive through a formal implementing decision under the Dutch Water Act¹¹⁹⁵. In 2012 The Netherlands adopted a marine strategy for the Dutch part of the North Sea which was updated in 2018¹¹⁹⁶. In relation to fisheries, the plan recognized that despite improvements in fish stocks due to fisheries measures, several species still were below ecologically safe levels. The strategy mainly identified bottom-disturbing impact of fisheries, bycatch and continued over-fishing of international fish stocks as key remaining challenges. It also

¹¹⁸⁷ State Forest Service and partners (2018) Website *Haringvliet.nu*. English summary of project available at: <https://www.haringvliet.nu/english-summary> [accessed 05 March 2021]

¹¹⁸⁸ RWS & Provincie Zuid-Holland (2021) Website the Sand Engine. Available at: <https://dezandmotor.nl/en/> [accessed 05 March 2021]

¹¹⁸⁹ Natuurmonumenten (2021) Webpage on the Marker Wadden (in English). Available at: <https://www.natuurmonumenten.nl/projecten/marker-wadden/english-version> [accessed 05 March 2021]

¹¹⁹⁰ Netherlands Statistics (CBS) web portal on Natural Capital. Available at: <https://www.cbs.nl/nl-nl/maatschappij/natuur-en-milieu/natuurlijk-kapitaal> [accessed 05 March 2021]

¹¹⁹¹ Web portal ‘Atlas Natuurlijk Kapitaal’. Available at: <https://www.atlasnatuurlijkkapitaal.nl/> [accessed 05 March 2021]

¹¹⁹² TEEB = The Economics of Ecosystems and Biodiversity

¹¹⁹³ Website TEEB city The Netherlands. Available at: <https://www.teebstad.nl/> [accessed 05 March 2021]

¹¹⁹⁴ OBN (2021) OBN Knowledge Network introduction [in English]. Available at: <https://www.natuurkennis.nl/english/obn-knowledge-network/knowledge-network/knowledge-network-for-restoration-and-management-of-nature-in-the-netherlands/> [accessed 05 March 2021]

¹¹⁹⁵ Wet van 29 januari 2009, houdende regels met betrekking tot het beheer en gebruik van watersystemen (Waterwet). English translation available at: <https://www.helpdeskwater.nl/secundaire-navigatie/english/@176675/dutch-water-act/>

¹¹⁹⁶ Government of the Netherlands web portal on the EU Marine Strategy Framework Directive. Available at: <https://www.noordzeeloket.nl/beleid/europese/> [accessed 05 March 2021]

identified many knowledge gaps preventing effective fisheries management. The strategy announced the introduction of fisheries-restricting measures in marine Natura 2000 site management plans. The Netherlands' MSFD Programme of Measures includes 5 fisheries measures: 1) Fiscal incentives for environmentally sustainable technologies, 2) commercial fisheries catch management, 3) minimising and phasing out of discards, 4) encouraging alternative fishing gear and 5) sustainable fisheries implementation.

The Dutch government has stimulated technical and other innovations for sustainable fisheries with fewer discards and the development of management plans for marine Natura 2000 sites. Examples of research and innovation are the transition from mussel seed fishing to mussel seed capture installations and the transition from traditional beam trawl fishing to electric pulse fishing (although the latter was banned by the European Parliament). Under the Fisheries in Protected Areas ('VIBEG') agreements struck between the government fisheries sector and nature NGOs in 2011 and 2017, parts of the Natura 2000 areas were closed for forms of fishing that have an impact on bottom life or which can disturb marine mammals and birds. Other agreed measures were made on the use of less damaging fishing gear, nets with a larger mesh size and a reduction in the number of days at sea in MPAs. Today three of the four most important commercial fish stocks in the North Sea for The Netherlands (herring, sole and plaice) are above safe biological limits and above sustainable levels¹¹⁹⁷. Especially sole and plaice have seen significant improvements since 2010.

Evidence of unsuccessful implementation of focus targets

Target 1: Fully implement the Birds and Habitats Directives

Despite important steps forward in implementation described in the previous section, the EU Strategy ambition level to achieve 100% more habitat assessment and 50% of species' assessments showing improved status was far from met in The Netherlands as mentioned in section 1.1. The most critical barriers to progress are low ecological coherence of the Natura 2000 network and too low environmental quality for recovery in particular because of nitrogen depositions from air and desiccation from drainage. In both cases, agriculture is the principal driver.

Nitrogen pollution in Natura 2000 resulted in a major national political crisis, when after a long legal battle on the legitimacy of Programmatic Approach to Nitrogen, the Administrative Law Department of the Council of State issued two rulings in May 2019¹¹⁹⁸. According to the Council, the PAS could not be used to grant permits that caused additional precipitation of nitrogen compounds in the Natura 2000 areas. The Council also ruled that the permit procedure lacked an appropriate ecological assessment, necessary to confirm the effect of the promised measures to offset nitrogen emissions. A direct consequence of these rulings was that building permits could no longer be granted based on PAS. This triggered a tense political stand-off between the building, agri-food and transport sectors, national and provincial authorities, and a new national approach currently in final stages of adoption¹¹⁹⁹.

¹¹⁹⁷ Government of the Netherlands (2019) Environmental data compendium indicator page 'Fish stocks in the North Sea 1947-2019. Available at: <https://www.clo.nl/indicatoren/nl0073-visbestanden-in-de-noordzee> [accessed 05 March 2021]

¹¹⁹⁸ Council of State (2019) Press release: PAS mag niet als toestemmingsbasis voor activiteiten worden gebruikt. Available at: <https://www.raadvanstate.nl/@115651/pas-mag/> [accessed 05 March 2021]

¹¹⁹⁹ Government of the Netherlands (2021) web portal on the Approach to Nitrogen. Available at: <https://www.aanpakstikstof.nl/> [accessed 05 March 2021]

An important challenge in Nature Directives implementation in The Netherlands has been that despite important progress on the NNN, the pace of expansion slowed down in recent years. As a result, completing the NNN by 2027 as agreed in the Nature Pact seems increasingly challenging. Acquisition of remaining land, or agreeing on nature management agreements, is slow as mostly agricultural landowners consider compensation levels to be insufficient to sell or adapt their business-model¹²⁰⁰. Another reason is that the new division of responsibilities between national and provincial governments in finalization of the NNN was still not sufficiently clear several years after adoption of the Nature Pact. Similar coordination issues on responsibilities were found between the national ministries of LNV (responsible for international nature policy) and the ministry of I&W (responsible for nature policy in large water bodies including in the marine environment)¹²⁰¹.

With stretched budgets, especially in the first half of 2010-2020, the strong focus on implementing legal commitments from BHDs and Nature Conservation Act (e.g., in setting objectives and establishing management plans) the PAS and the finalization of the NNN, relatively little attention was given yet to management effectiveness of existing sites. While a recent analysis demonstrated best practice in The Netherlands as regards to management monitoring and integrated management effectiveness evaluation into its nature management subsidy, evidence also points to significant remaining capacity issues in inspection and enforcement in the field, for example in regulating tourism and recreation¹²⁰². Moreover, a recent report commissioned by nature NGOs pointed to different levels of ambition in the implementation and enforcement of nature policy between Provinces¹²⁰³.

Another remaining challenge in relation to full implementation of the Birds- and Habitats Directives is species protection outside of Natura 2000 sites. Internationally critical farmland bird breeding populations keep showing dramatic downward trends and local extinctions especially due to intensification of grassland management and the loss of landscape elements¹²⁰⁴. While a new system of agricultural nature management entered force in 2016 much more strongly focussed on the achievement of EU nature conservation objectives, it is implemented on less than 5% of the Dutch agricultural area. As farming practices further intensified in most of the remaining 95% of 'conventional' agricultural land, and other measures on conventional farmland e.g., under CAP greening did not deliver for biodiversity, farmland bird populations declined further¹²⁰⁵.

Low public awareness of EU Nature Directives and Birds- and Habitats Directives: In a 2018 EU-wide survey¹²⁰⁶, only 28% of respondents from the Netherlands indicated they had heard of Natura 2000 but only 14% were aware of what it was. 72% of respondents had never heard of Natura 2000, slightly above

¹²⁰⁰ PBL (2017) Lerende evaluatie van het Natuurpact: naar nieuwe verbindingen tussen natuur, beleid en samenleving. Available at: <https://research.wur.nl/en/publications/lerende-evaluatie-van-het-natuurpact-naar-nieuwe-verbindingen-tus>

¹²⁰¹ Input to survey for this study

¹²⁰² EEA (2020) Management effectiveness in the EU's Natura 2000 network of protected areas. Available at:

¹²⁰³ Bastmeijer, K. & Van Kreveld, A. (2019) Decentraal natuurbeleid onder de Wet Natuurbescherming. Available at: <https://www.vogelbescherming.nl/docs/bae5214e-5de3-408f-924e-8f33eb036bb2.pdf>

¹²⁰⁴ Government of the Netherlands (2020) Environmental Data Compendium indicator page Farmland Birds, 1915-2018. Available at: <https://www.clo.nl/en/indicators/en1479-farmland-birds> [accessed 05 March 2021]

¹²⁰⁵ Alliance Environnement (2019) Evaluation of the impact of the CAP on habitats, landscapes, biodiversity - Country report for The Netherlands [unpublished]. Full study available at: https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/cmef/sustainability/impact-cap-habitats-landscapes-biodiversity_en

¹²⁰⁶ European Commission (2019) Special Eurobarometer 481 - Attitudes of Europeans towards Biodiversity. Available at: <https://ec.europa.eu/commfrontoffice/publicopinion/index.cfm/ResultDoc/download/DocumentKy/86290>

the EU average of 70%. In comparison, in Bulgaria and Finland more than three-quarters of respondents had heard of Natura 2000 and 40% knew what it was.

Target 2: Maintain and restore ecosystems and their services.

Despite the significant acceleration of restoration measures, especially in Natura 2000 sites, a recent evaluation found the results of these were only seen in wetland ecosystems, which were strongly prioritized especially through hydrological measures in nitrogen-sensitive Natura 2000 sites. Also, the significant investments in riverine- and estuary ecosystems mostly benefitted wetlands. Other ecosystems e.g., drier terrestrial and marine ones, especially those outside of protected areas received significantly fewer restoration attention which in terrestrial ecosystems also shows in biodiversity trends¹²⁰⁷. The same evaluation found that restoration measures, especially outside of wetlands, had often been too small and/or isolated to have measurable impacts at ecosystem-scale.

Target 4: Ensure the sustainable use of fisheries resources.

The study supporting the Netherlands' 6th National Report to the CBD indicates that fishing is not yet fully sustainable. According to the updated Dutch Marine Strategy only 26% of commercial fish, crustacean and shellfish stocks are in a good environmental status (based on the criteria 'Fishing mortality' and 'spawning stock biomass'). This includes one of the four most important commercial fish species for The Netherlands (Cod).

While Netherlands has adopted a shark and ray recovery action plan 2015-2021 under the Marine Strategy Framework Directive (MSFD), vulnerable long-lived shark and ray species are still critically endangered or threatened and many populations of benthos species - animals living near, on or in the seabed - have decreased since 1990 and no signs of recovery have yet been recorded. In demersal trawl fisheries (for seabed species) rays and sharks are still caught as a by-catch.

The European Commission assessment on Dutch reporting on implementation of the MSFD highlighted that measures taken to achieve Good Ecological Status (GES) are appropriate, although uncertainties remain on monitoring of effectiveness and results will be dependent. This concerned the achievements in reducing eutrophication under the WFD, CFP and relevant fisheries agreements such as VIDEG2 as outlined above¹²⁰⁸.

GES for biodiversity, commercial fish, and shellfish, was not met by the 2020 deadline due to eutrophication and contaminants. For eutrophication and contaminants exceptions are applied. The European Commission concluded that the Netherlands provide insufficient justification for the reasons why GES will not be achieved by 2020 for commercial fish and shellfish and biodiversity¹²⁰⁹. In addition, it asked the Netherlands to better address certain pressures and activities, specify timelines, improve monitoring and measurability, and specify spatial MPA protection measures by habitats and species.

In relation to species, the Commission pointed out that the programme does not explain how it will address 1) the effects of non-indigenous species and marine litter on seabirds and 2) contaminants and

¹²⁰⁷ PBL (2020) Bijdrage van herstelmaatregelen aan verbeteren biodiversiteit in het Natuurnetwerk. : Achtergrondrapport lerende evaluatie van het Natuurpact. Available at: <https://www.wur.nl/nl/Publicatie-details.htm?publicationId=publication-way-353733393536>

¹²⁰⁸ Milieu Ltd et al (2018) Article 16 Technical Assessment of the MSFD 2015 reporting on Programme of Measures Netherlands Report Version 4 - February 2018. Available at: https://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/implementation/reports_en.htm

¹²⁰⁹ Milieu Ltd et al, 2018

marine litter on mammals. On habitats, the programme lacks specific measures on water column habitats. On seabed habitats, the programme mainly includes fisheries restrictions within spatial protection measures, which are often lacking in detail on their area coverage, temporal ranges of restrictions and minimal consideration is given to the broader issues of trawling outside of these spatially protected areas. Most measures relate to physical loss and damage to seabed habitat, with minimal consideration of other pressures such as non-indigenous species, eutrophication, and marine litter¹²¹⁰.

Unexpected or unintended consequences of implementing focus targets.

Target 1: Fully implement the Birds and Habitats Directives

No significant unexpected or unintended consequences were identified.

Target 2: Maintain and restore ecosystems and their services

The restoration of some ecosystems to more natural states, for example to achieve Good Ecological Status in rivers, lakes, and estuaries under the Water Framework Directive, has resulted in conflicting objectives with nature policy. These mostly related to the conservation of certain protected habitats and species being incompatible with an increase of more dynamic environmental conditions for example more frequent flooding or shifts from fresh- to more saltwater conditions.

Target 4: Ensure the sustainable use of fisheries resources

No significant unexpected or unintended consequences were identified.

Key factors which have contributed to achieving objectives

Target 1: Fully implement the Birds and Habitats Directives

Legal basis and -enforcement: In 2010 the Netherlands government was positioned antagonistically towards EU nature conservation law. In July 2009, outgoing prime minister Balkenende wrote a letter to Commission president Barroso asking for a revision of the EU Nature Directives as they were considered too strict and therefore too restrictive to the business community in particular farmers. In October 2010 Barroso answered and declined a revision. That same month, the first Rutte government (2010-2012) was sworn in which, as explained in section 1.3, discontinued various long-standing agreements on in nature policy, introduced cuts to nature conservation of more than half the overall portfolio and installed a State Secretary openly hostile to nature policy. The second Rutte government (2012-2017) annulled several of these decisions and adopted the three NBSAPs outlined section 1.2.2 as well as the new Nature Conservation Act in which protection standards for EU protected habitats and species were upheld, while some national ones e.g., in the NNN and national nature monuments were lowered. While the Juncker Commission introduced the Fitness Check of the Nature Directives, which created uncertainties on a future framework, and took little enforcement action on EU nature policy until, EU nature law did play an important role in maintaining implementation standards in The Netherlands for example in relation to SAC designation and objective setting and the PAS.

NNN implementation: The significant progress made by many stakeholders in jointly progressing implementation of the NNN both in size through acquisition and in quality through recreation measures has greatly improved ecological conditions in and around Natura 2000 sites and habitats and -species within them.

¹²¹⁰ Milieu Ltd et al, 2018

Restoration measures under the PAS: Investments in restoration measures under the PAS have had a measurable impact on nitrogen-sensitive wetlands. An important enabling factor to these measures has been the size of investment mobilized which made action at scale possible.

Conservation outcomes in neighbouring countries: The period 2010-2020 saw the re-colonization in The Netherlands of various iconic species protected under EU law such as the Wolf (*Canis lupus*); Common crane (*Grus grus*); White-tailed eagle (*Haliaeetus albicilla*) and Osprey (*Pandion haliaetus*). These were largely the result of successful protection in neighbouring countries in particular Germany.

Target 2: Maintain and restore ecosystems and their services

Since ecosystem restoration in The Netherlands in 2010-2020 strongly focussed on protected areas and especially Natura 2000 sites, the success factors have been similar as the ones in the previous section.

Target 4: Ensure the sustainable use of fisheries resources

EU law: The reformed CFP for 2014-2020 and Marine Strategy Framework Directive improved the broad legal and implementation framework necessary to ensure sustainable fisheries in the North Sea.

Focussed agreements on fishing and biodiversity: The VIBEG agreements, although initially not well-supported by the sector, provided an important platform to discuss and agree on concrete measures to ensure more sustainable fishing in the Dutch part of the North Sea (or at least in the Natura 2000 sites).

Key factors which have hindered the achievement of objectives

Target 1: Fully implement the Birds and Habitats Directives

Budget cuts: The budget cuts by the Rutte I government led to an important downward setting of objectives and delay in achievement of nature policy objectives

Legal- and governance uncertainties: Both the decentralisation of nature policy, the Fitness Check of the EU Nature Directives, the new Nature Conservation Act, and legal and political challenges to the Dutch approach to nitrogen all created important legal uncertainties, questions on distribution of responsibilities between competent authorities and delays.

Failure to deal with agricultural pressures at scale: Especially nitrogen and desiccation pressures of farming adjacent to Natura 2000 sites is often still too high to meet conservation objectives. In the wider landscape the weak CAP greening and small-scale AECMs are largely insufficient to counteract large losses of farmland biodiversity, including meadow bird populations of international significance.

Target 2: Maintain and restore ecosystems and their services

(Same as under Target 1)

Target 4: Ensure the sustainable use of fisheries resources

Knowledge gaps: Relatively poor understanding of and data on the marine environment, including the effect of fisheries (restricting) measures, hampers informed discussions between stakeholders and decision making grounded in evidence. This created conflicts between signatories of the first VIBEG agreement and made the process vulnerable to political opportunism e.g., by members of the Dutch parliament which undermined the dialogue between stakeholders more than once.

EU politics: Fisheries in the North Sea is subject to tense international conflicts and despite better provisions on dealing with conflicts in the reformed CFP e.g., over conservation measures (Art 11) the reality is different. An example is that when Dutch vessels introduced pulse fishing to reduce negative pressures on benthos, the technique was banned in the European Parliament through an initiative led by France on questionable grounds. Brexit added another layer of complexity.

9.3.2 Efficiency

Key evidence on the cost efficiency of the Biodiversity Strategy as a whole

As mentioned in section 1.2, The Netherlands only supported the EU Strategy's headline targets but did not systematically integrate its action in NBSAPs even though there are significant overlaps. There has also been no specific evaluation of implementing the EU Strategy, and the more generic PBL evaluation of Dutch progress on international biodiversity objectives does not specifically address efficiency. Therefore, the evidence below rather highlights some of the key characteristics of efficiency of major actions undertaken in The Netherlands towards the three broad target areas in focus as described in the previous two sections.

Key evidence of benefits

The Netherlands since 2010 have increased their understanding of ecosystem services, which show that natural areas provide both the largest diversity of services as well as the largest net value in demanded services while representing a smaller area of the country than agricultural areas and cities¹²¹¹. No clear trend information since 2010 is publicly available, but trends since 2000 show both improvements (especially in services related to natural areas) and further declines (in services related to agricultural areas).

As part of development of the Netherlands' national natural capital account since 2016, Statistics Netherlands and Wageningen University for LNV for the first time attempted to calculate the monetary value of 10 terrestrial ecosystem services in The Netherlands following international statistical guidelines of the System of Environmental-Economic Accounting: Experimental Ecosystem Accounting (SEEA EEA)¹²¹². Table 2 shows these (experimental) values for terrestrial ecosystems.

In a separate project to support the development of a national natural capital account, a physical SEEA EEA account for the North Sea was developed which included marine fishing¹²¹³.

¹²¹¹ Government of The Netherlands (2021) Environmental data compendium indicator page 'Ecosystem services in the Netherlands, 2020'. Available at: <https://www.clo.nl/indicatoren/nl1572-goederen-en-diensten-van-ecosystemen-in-nederland?ond=20879> [accessed 05 March 2021]

¹²¹² Statistics Netherlands (2021) Ecosystem services. Available at: <https://www.cbs.nl/nl-nl/maatschappij/natuur-en-milieu/natuurlijk-kapitaal/themas/ecosysteemdiensten> [accessed 05 March 2021]

¹²¹³ Statistics Netherlands (2019) Natural capital accounts for the North Sea: The physical SEEA EEA accounts. Available at: <https://www.cbs.nl/nl-nl/achtergrond/2019/51/natuurlijk-kapitaalrekeningen-nederlandse-noordzee-2019>

Table 9-2: Value of ecosystem service flows and associated asset values in 2015 (millions of euros)¹²¹⁴

Class	Ecosystem service	<i>Broad scope estimates of tourism and recreation</i>		<i>Medium scope estimates of tourism and recreation</i>		<i>Limited scope estimates of tourism and recreation</i>	
		flow	asset	flow	asset	flow	asset
Provisioning	Crop production	415	13,125	415	13,125	415	13,125
	Fodder/grass production	872	27,569	872	27,569	872	27,569
	Timber production	44	1,381	44	1,381	44	1,381
Regulating	Water filtration	177	7,620	177	7,620	177	7,620
	Carbon sequestration	171	7,391	171	7,391	171	7,391
	Pollination	359	15,470	359	15,470	359	15,470
	Air filtration	86	3,700	86	3,700	86	3,700
Cultural	Nature recreation	3,873	122,394	2,992	94,552	2,012	63,586
	Nature tourism	5,946	187,880	3,392	107,198	1,146	36,218
	Amenity services	1,037	32,402	1,037	32,402	1,037	32,402
TOTAL		12,981	418,931	9,546	310,407	6,320	208,461

Key evidence of costs

No cost estimates were made of implementing the EU Biodiversity Strategy in The Netherlands. The Prioritized Action Framework for the Netherlands (PAF) provides an overview of investments allocated in 2014-2020 to the implementation of Natura 2000, protection of species of EU interest and on Green Infrastructure according to the EU definition. While only covering part of the implementation cycle of the EU Strategy, it does provide an insight in the magnitude of costs and how they have been met. It should be noted that costs estimates for the 2021-2027 PAF cost are significantly higher than those for 2014-2020. This is because the development of management plans revealed significant additional costs previously overlooked. The investments below, even if extrapolated to the period 2010-2020 are clearly an underestimation of the real costs of implementing biodiversity policy.

Table 9-3: Overview of investment in Natura 2000, species protection outside of Natura 2000 and Green Infrastructure in The Netherlands between 2014-2020 (as reported in the PAF 2021-2027)

EU-funding	EAFRD	€403.882.581
	ERDF & CF	€25.491.011
	LIFE	€39.700.000
National funding	Recurring nature management (includes PAS)	€2.455.000.000
	Development NNN	€1.400.000.000
Other funding	National Postal Code Lottery	€322.000.000
TOTAL		€ 4.646.073.592
TOTAL/year		€ 663.724.799
Estimated needs/year 2021-2027		€ 903.110.000 (+36%)

9.3.3 Coherence

¹²¹⁴ From: Statistics Netherlands & WUR (2020) Experimental monetary valuation of ecosystem services and assets in the Netherlands. Available at: <https://www.cbs.nl/nl-nl/achtergrond/2020/04/monetair-waarderen-van-ecosysteemdiensten-voor-nederland>

Coherence with the EU 2020 Strategy

The EU 2020 Strategy was not coherent with the EU Biodiversity Strategy to 2020 at EU level in the first place, and biodiversity was never included in the framework of the European Semester and country-specific recommendations. The EU 2020 Strategy's headline targets were also not so relevant to the achievement of the EU Biodiversity Strategy's objectives, at least not in The Netherlands itself as the GHG targets were not high enough to impact LULUCF yet and there was no pressure on forest ecosystems for renewables. The renewable target did increase the Netherlands' biodiversity footprint in third countries through increased biomass demand including the US, Canada, and the Baltic States.

Coherence with EU Sectoral Policies

[Key] The EU Biodiversity Strategy to 2020 was relatively weak in terms of ensuring coherence with EU sectoral policies especially the critical natural resource use policies such as on farming, forestry and fishing (Targets 3 and 4). This had important knock-on effects in the likelihood of meeting Targets 1 and 2. This has also been the reality in The Netherlands, where the pace of change towards Targets 3 and 4 was far lower than what would have been required to stay on track of the strategy's overall objectives. For example, CAP greening in the Netherlands was implemented through measures which hardly benefitted biodiversity, such as catch crops¹²¹⁵.

As mentioned in section 2.1.1, there was great coherence between the implementation of the EU Water Framework Directive and EU Floods Directive in the implementation of Target 1 and especially 2 of the EU Biodiversity Strategy to 2020 in The Netherlands. Also, there was significant coherence in the implementation of the Marine Strategy Framework Directive and Target 1 of the EU Biodiversity Strategy to 2020, although it was rather the EU Nature Directives themselves.

Coherence with international biodiversity commitments

No evidence was found in the Netherlands that suggested coherence issues between international biodiversity commitments and the EU Strategy, even though the latter took a much narrower scope. As the Netherlands was in any case party to the CBD, it acted and reported on the global targets in any case and the EU priorities reinforced commitment to priorities that were (and are) very relevant in The Netherlands (see chapter below).

Coherence of EU Biodiversity Strategy

No evidence was found in the Netherlands that suggested coherence issues between targets and actions in the EU Biodiversity Strategy.

¹²¹⁵ See for example Van Doorn, A. (2017) Het Europese landbouwbeleid en biodiversiteit. Available at: <https://research.wur.nl/en/publications/het-europese-landbouwbeleid-en-biodiversiteit>

9.3.4 Relevance

Relevance of EU Biodiversity Strategy

While evidence and awareness of biodiversity loss in and by The Netherlands in 2010 was certainly not as high as today, it was already very present. As explained in earlier chapters, following the European debt crisis biodiversity was a low priority in national politics, however even the most biodiversity-unfriendly coalition agreement of the first Rutte government recognized that *‘Good nature management and maintaining biodiversity are important, also for recreational use.’*

In addition, as biodiversity was already a shared competence in the EU, and key parts of nature policy and critical sectoral policies such on agriculture and fisheries had been under EU law for decades and the EU had already adopted an EU Biodiversity Action Plan in 2016, the relevance of having an explicit strategic EU policy document setting out core common priorities, objectives and measures for the EU therefore seems not to have raised eyebrows in The Netherlands.

As mentioned in section 1.3, the Netherlands was far from reaching its EU nature law commitments and was already experiencing significant remaining biodiversity challenges with farming and fisheries. It was also arguably the first EU Member State with a national Green Infrastructure (1990), but one with large unmet restoration needs. Despite significant steps forward as described in the previous chapters, an important share of these same challenges remains today. Thematically, therefore, the focus areas of the Strategy were highly relevant in the Dutch context.

A targeted search for public reactions to the new strategy by stakeholders at the time did not yield a single result, and this low level of interest could well be explained by little consultation the European Commission had with Member States and stakeholders on the strategy, and its limited political impact in terms of new legal commitments beyond the announcement of the IAS regulation.

9.3.5 EU added value

As mentioned in section 1.2, while the Natural Capital Agenda and National Nature Vision referred to the EU Biodiversity Strategy, and The Netherlands reported progress to the CBD along the EU Strategy’s six headline targets, no evidence was found which suggests that the EU Strategy as such triggered any significant change in biodiversity ambition and/or commitments in The Netherlands.

Target 1 of the Strategy does not seem to have changed the implementation of the EU Nature Directives in The Netherlands that was already on-going, and while the headline target for FCS in combination with a 2020 deadline provided important added value to the lack of deadlines in the EU Nature Directives, because of its voluntary nature it did not trigger increased implementation ambition or pace in The Netherlands and could not be enforced.

In relation to Target 2, the EU-wide capacity building on MAES implementing the strategy (Action 5) seems to have inspired or at least informed national progress in The Netherlands. However, in setting priorities to restore and promote the use of green infrastructure (Action 6) the Strategy and its follow-up action through the EU Green Infrastructure Strategy did not make a difference to the status quo.

In relation to Target 4, similar as to Target 1, the Strategy did not go beyond what was already integrated in the reformed EU's Common Fisheries Policy adopted a few months after the EU Strategy.

9.4 Conclusions

The overall conclusion from this case study on the implementation of the EU Biodiversity Strategy to 2020 in The Netherlands is that while its targets and actions were generally of high relevance to the national challenges, the Strategy was referred to in different NBSAPs and was used as a framework to report national progress towards UN CBD commitments against, in the end it appears to have little to no impact on the implementation towards these commitments. The main reason for this is that the Strategy only made few proposals beyond business as usual, and where it did proposals were on a voluntary basis. The Netherlands never made a systematic breakdown of actions in the EU Strategy in a national plan, and while most actions feature in some plans, transparency and accountability is challenging.

As the Netherlands had significant outstanding implementation gaps under the legally binding EU Nature Directives, implementation efforts focussed on Target 1 of the Strategy. These efforts were delayed however by various developments casting uncertainties and delays. These included budget cuts under the Rutte I government, a major decentralisation of responsibility for nature policy to the country's twelve Provinces, a new national Nature Conservation Act, a new and heavily scrutinized Programmatic Approach to Nitrogen, a large overhaul to the national approach to agricultural nature management and an EU Fitness Check of the EU Nature Directives. Despite this volatile context, The Netherlands made important steps forward since 2010 especially in implementing Natura 2000 and its management planning.

Progress in nature policy slightly improving trends for biodiversity in terrestrial protected areas in recent years, however the latest State of Nature reporting only showed minor improvements in the conservation status of EU-protected habitats and species. Important remaining challenges include increasing the ecological coherence between protected areas and further improving environmental baseline conditions by reducing pressures from reactive nitrogen, desiccation, and pesticides. For the latter, agriculture plays a major role, as well as in the protection of threatened farmland bird populations. Although early evaluations of the country's new approach to agricultural nature management show some positive local successes, measures so far were not taken at a scale and pace sufficient to turn around the decline in farmland biodiversity.

In relation to Target 2, the Netherlands made important steps forward in the Mapping and Assessment of Ecosystems and their Services (MAES), and while there were intentions to develop a Restoration Prioritisation Framework (RPF) in line with the 2013 EU Green Infrastructure Strategy, it was never published. There was also no systematic tracking of national progress towards the 15% headline restoration target, which was not binding and therefore other more urgent priorities prevailed. Despite the absence of these tools, the Netherlands undertook various large-scale restoration actions especially through the implementation of the National Nature Network, the restoration of nitrogen-sensitive habitats under the Programmatic Approach to Nitrogen and floodplain restoration in combination with flood risk management. These measures are expected to lead to further improvements in biodiversity trends in the coming years.

In relation to Target 4, the Netherlands undertook a range of actions in the international and national context to ensure the sustainable use of fishing resources. However, these have only led to mixed results

for commercial species, and slowly maturing non-commercial species such as rays and sharks are not showing improvements yet. Best-practice was the development of dedicated agreements between authorities, fishermen and nature NGO's on how to limit the negative impacts in marine Natura 2000 sites. This included partial bans and using alternative fishing gear and methods. Besides international conflicts related to broader fisheries management in the North Sea, data limitations have hampered informed and effective dialogue between stakeholders and consequent definition of management measures.

Appendix D - Consultation Report

1 Introduction

This report provides an overview of the consultation methods, responses and results derived from the tools established under the consultation strategy. This includes, the Open Public Consultation, EU-level interviews, MS-level interviews, and the MS-level survey.

The key objectives of the consultation process were (i) to confirm the scope of this evaluation, (ii) to collect factual information on the implementation of the EU Biodiversity Strategy to 2020 from associated stakeholders in order to complement the desk-based research conducted as part of the supporting study and (iii) to ask stakeholders to express their views about the effectiveness, efficiency, coherence, relevance and EU-added value of the EU Biodiversity Strategy to 2020.

In the context of the evaluation, a broad scope for the stakeholder consultation was necessary to ensure that all relevant and interested stakeholders were given an opportunity to express their opinions and to contribute to the study.

2 Methods of stakeholder engagement

The main consultation activities were the following:

- Open public consultation (OPC), launched in January 2021 until April 2021;
- Targeted EU-level stakeholder engagement through interviews, conducted between October 2020 and March 2021;
- Targeted MS- level stakeholder engagement through interviews and surveys, conducted between November 2020 and March 2021.

Each of these are discussed in turn below.

2.1 Open Public Consultation

2.1.1 Approach

Questionnaire

The questionnaire was split into four separate sections: the initial section containing questions to characterise the respondent in several stakeholder groups; Part 1 on the Evaluation of the EU Biodiversity Strategy to 2020; Part 2 on the Review of the application of the EU Regulation on Invasive Alien Species; and, Part 3 on the Development of legally binding EU nature restoration targets. This analysis focuses on Part 1, in addition to providing an overview of the corresponding information in the initial section of the OPC. Furthermore, due to the relevance of Part 2 of the consultation, a brief analysis of this section is also presented. A more detailed analysis of Part 2 (including an analysis of open text responses) will be provided under the ongoing implementation review of the Invasive Alien Species Regulation by the Commission.

Part 1 of the survey contained 15 questions (including the opportunity to provide other comments), of which 12 were multiple choice. A number of the multiple-choice questions also included an open text response box, to allow the respondent to expand upon their answer. Part 2 of the survey contained 9 questions, of which 7 were multiple choice (1 of these offered the opportunity for respondents to elaborate through open text) and 2 were open-ended questions.

The scales for most questions included one or more 'opt-out' responses, such as 'Do not know' to avoid forcing respondents into giving an opinion they did not feel qualified giving.

An open question was asked near the end of the questionnaire, to allow respondents to provide any further relevant feedback, information, or opinions. In addition, respondents were asked to provide any relevant links or files which could be considered in relation to the evaluation.

Publication privacy settings

In the survey questionnaire, respondents were allowed to choose whether they would like their details to be made public or to remain anonymous, as described:

- “Anonymous. The type of respondent that you responded to this consultation as, your country of origin and your contribution will be published as received. Your name will not be published. Please do not include any personal data in the contribution itself.”
- “Public. Your name, the type of respondent that you responded to this consultation as, your country of origin and your contribution will be published.”

As such, in this report personal details have only been given where the “public” privacy setting was chosen by the respondent. The only information included in this report is the organisation name provided by the respondent.

Analysis steps

The analysis steps were:

1. Questionnaire data obtained from EC Survey system. Data was inspected and the format adjusted as needed. For the OPC, no significant update of formatting/data structure was required.
2. Questionnaire raw data was imported and cleaned to ensure consistency and repeatability. Questions with multiple concepts for the responder to give an opinion about are split into separate charts to enable analysis per sub-question.
3. Graphics were created using in built excel software, in order for the reader to easily digest the data presented.
4. Respondents had the option of elaborating on their answers in open text fields or responding to stand-alone open-ended questions. Responses in all languages were analysed after having been translated to English using machine translation. Due to the scale of qualitative information received from the open text responses, a list of unique responses (using the Excel function UNIQUE) in order to exclude campaigns was generated. This list was then screened using an additional formula to extract responses that were above a specific length in order to: 1) avoid the selection of short/one-word responses, and 2) select only responses which provide substantive text (i.e. over a specific character threshold). Following this initial filter, the formula then randomly selected a set of 50 responses per evaluation question. These responses were systematically checked for overlapping responses, to indicate possible coordinated replies by groups of respondents. Survey data was then analysed and coded. The aim of the coding exercise was to identify the keywords and themes mentioned by respondents, and then attribute

these as established “codes” for which a consensus can be built and counted. For instance, if one respondent mentions a need for more capacity building, “more capacity building” can be coded and then used to count further responses that communicated the same need for more capacity building.

5. Finally, any attachments, links or other materials submitted by stakeholders were analysed and incorporated throughout this report.

2.1.2 Overview of responses

Overview of distribution of responses

A total of 111,842 respondents filled in the questionnaire (across all 4 sections of the OPC), among which a large number answered as part of campaigns. After isolating these campaigns (more information on these is presented at the end of the ‘overview of results’ chapter of this report), 7,510 responses remained. These filtered responses were then analysed in this report. Although there was a total of 7,510 individual responses, the number of responses to each specific question has varied throughout the survey. Due to the non-mandatory nature of most questions, it is typical that fewer than 7,510 responses have been provided to certain questions.

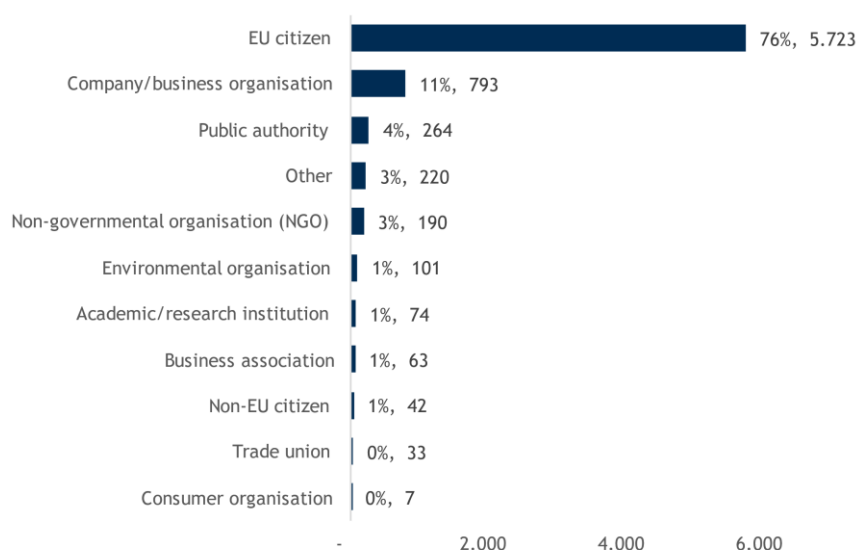
Overview of geographical spread of responses

Out of all respondents, 99.6% (7,479 respondents) were from EU countries. The majority of respondents originated from Poland (6,710; 89%), followed by Germany (251; 3%), Belgium (82; 1%) and France (70; 1%). In total, respondents listed 43 different countries of origin, with 16 non-EU countries represented in addition to all EU MS. However, a quarter of these countries were represented by only 1 respondent.

Overview of identity of respondents

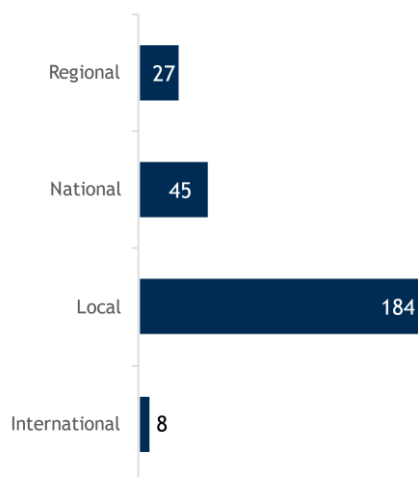
Of the 7,510 respondents, the most common stakeholder category was EU citizen, making up just over three quarter of the respondents (5,723; 76%), followed by companies/organisations (793; 11%) and public authorities (264; 4%). The remaining stakeholders came from NGOs (190; 3%), environmental organisations (101; 1%), academic/research institutions (74; 1%), business associations (63; 1%), trade unions (33; <1%), and consumer organisations (7; <1%). In addition, 42 respondents identified as non-EU citizens (42; 1%), and 220 selected the ‘other’ option (3%). The full breakdown of respondent types is shown in Figure 2-1.

Figure 2-1 Stakeholder types of the respondents



Public authorities were given the opportunity to specify their scope. The majority of them were local public organisations (184; 70%), of which 94% (173) were authorities and 6% (11) were agencies. National public organisations were also somewhat well represented (45; 17%), and these mostly included authorities (80%; 36), followed by agencies (8; 18%) and including 1 parliament (2%). 27 public authorities operated at a regional level (10%) - including 24 (89%) authorities and 3 (11%) agencies - and 8 operated at an international level (3%). The scope of the respondents identifying as public authorities is shown in Figure 2-2.

Figure 2-2 Scope of public authorities

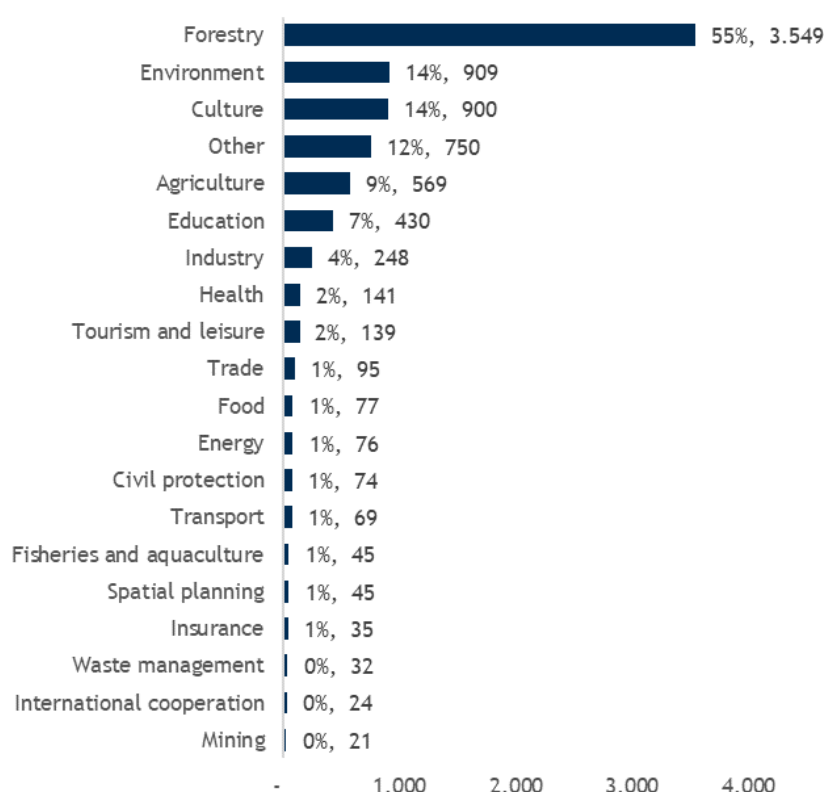


6,490 respondents answered to the question asking them to specify their area of activity, and could select multiple options. In total, 8,228 responses were received. Over half of the respondents were active in the field of forestry (3,549; 55%). The fact that a high share of respondents originated from Poland and are active in the field of forestry is important to take into account while analysing the results of this OPC. The areas of environment (909; 14%) and culture (900; 14%) - which feature in second and third position - were almost equally represented. These were followed by agriculture (569; 9%), education (430; 7%), industry (248; 4%), health (141; 2%) and tourism and leisure (139; 2%). The

remaining areas of activity were selected by less than 1% of respondents, with the full breakdown of answers visible in Figure 2-3. In addition, 750 respondents (12%) selected the option 'other'.

1,745 organisations (i.e. non-citizen respondents) also specified their size. The most-represented organisation size was medium organisations (50 to 249 employees) (762; 44%), followed by small organisations (10 to 49 employees) (435; 25%), large organisations (>250 employees) (288; 17%), and finally micro-organisations (1 to 9 employees) (260; 15%).

Figure 2-3 Area of activity of respondents



Due to the high number of respondents selecting forestry as an area of activity, this area was the most represented area for most stakeholder types. Notably, 83% of trade unions (24) and 82% of companies/businesses (616) selected forestry. This area was not the most chosen activity for business associations, for which culture was the most selected area of activity (18; 30%); for environmental organisations, with environment being the most chosen answer (45; 49%); and for NGOs, which also selected environment the most (91; 52%). In addition, academic/research institutions equally represented forestry and environment (25; 36% each).

2.1.3 Overview of results

Part I: Evaluation of the EU Biodiversity Strategy to 2020

The percentage of responses to each question is based upon the number of responses to the specific question, rather than on the total number of respondents that participated in the survey. This also includes instances where a respondent has stated 'I do not know'. This approach is repeated for open

text responses, where the number of respondents (and %) is given in relation to the number of responses given to a particular question. The sections below present for each question:

- 1) An overview of all quantitative responses;
- 2) An overview of quantitative responses in applicable questions (through the aforementioned randomised selection of 50 responses), excluding campaign responses;
- 3) A breakdown of key diverging responses given (in questions where applicable), per sectoral stakeholder type. This has only been developed for Part 1 of the OPC.
- 4) Campaign responses are separately analysed at the end of this chapter of the report.

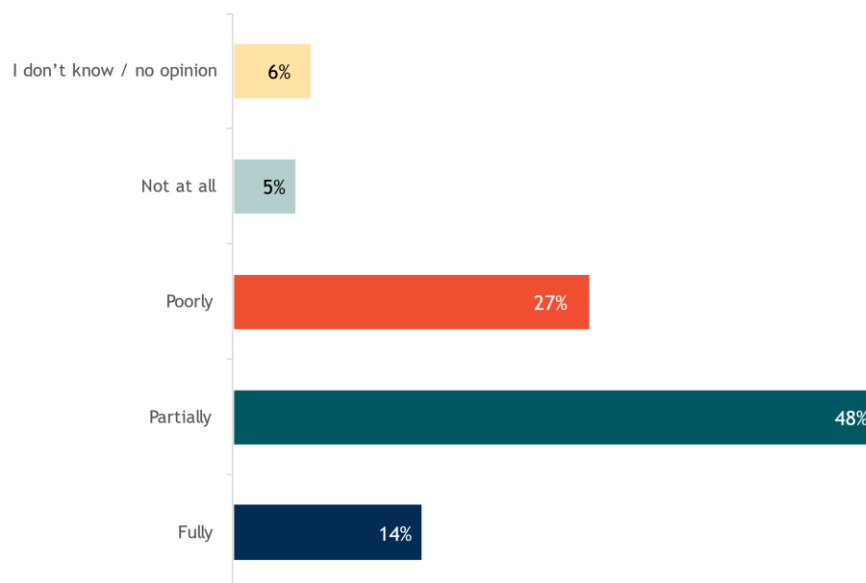
Question 1. The 2020 Biodiversity Strategy set six targets, which together should have enabled the EU to halt and reverse the loss of biodiversity and ecosystem services. How familiar are you with these targets?

	Very familiar	Moderately familiar	Slightly familiar	Not at all familiar
Target 1. Fully implement the EU Birds and Habitats Directives (n=4373)	42%	39%	14%	5%
Target 2. Maintain and restore ecosystems and their services (n=4332)	39%	41%	16%	4%
Target 3. Increase the contribution of agriculture and forestry to maintaining and enhancing biodiversity (n=4327)	48%	34%	13%	4%
Target 4. Ensure the sustainable use of fisheries resources and marine ecosystems (n=4123)	25%	22%	36%	17%
Target 5. Combat invasive alien species (n=4312)	37%	39%	18%	6%
Target 6. Help avert global biodiversity loss (n=4146)	32%	42%	21%	5%

Note: the darker shade of green indicates a higher percentage of responses.

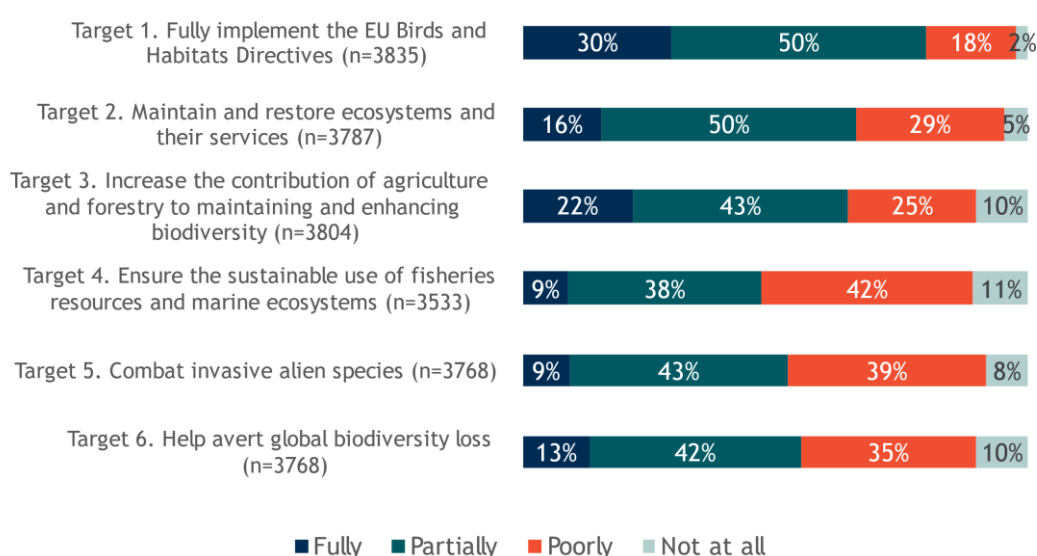
Overall, participants tended to believe that they are fairly familiar with the six targets of the 2020 Biodiversity Strategy, with the proportion of respondents answering either “moderately familiar” or “very familiar” hovering between a minimum of 47% for Target 4 to a maximum of 82% for Targets 1 and 3. Results nonetheless suggest that respondents are slightly more familiar with Target 3, as it received the highest proportion of “very familiar” answers (2,086; 48%). Target 4 was markedly the least known of the six, being the only Target for which the most chosen answer is “slightly familiar” (1,484; 36%) as well as the Target with the highest share of respondents being not familiar at all with it (718; 17%).

Question 2. To what extent has the EU met the objective of halting biodiversity loss and the degradation of ecosystem services in the EU by 2020, and restoring them as far as feasible?



Almost half of the respondents to this question assessed the EU as having partially met the objective of halting biodiversity loss and the degradation of ecosystem services in the EU by 2020, and restoring them as far as feasible (1,995; 48%). Combining results for “partially” and “fully”, a larger proportion of respondents had a least a somewhat positive response to this question (2,583; 62%) compared to those who answered either “poorly” or “not at all” (1,305; 32%). Stakeholders who answered ‘fully’ largely belonged to forestry (310; 53) sectoral groups, whereas opposing views (i.e. responded ‘poorly’) belonged to environment (252; 23%), forestry (224; 20%) and culture (208; 19%)- thus highlighting the significantly contrasting views amongst the forestry sector (including the Polish forestry responses, who responded 309; 53% to ‘fully’ and 198; 34% to ‘poorly’).

Question 3. To what extent has the EU achieved the following targets?



Note: The total number of responses received to each of the sub-question is stated under each of them, but the number of respondents whom answered “I do not know/no opinion” is not included in the percentages.

Targets 1 and 3 were the best rated in terms of achievements, as visible in the share of respondents who believed that they were fully achieved (1,033; 30% for Target 1 / 764; 22% for Target 3), while targets 1 and 2 scored best in terms of the combined share of “fully” and “partially” responses (2,785; 80% for Target 1 / 2,314; 66%). Target 3 also had a significant share of “fully” and “partially” responses (2,264; 65%), yet it must be acknowledge here that the majority of respondents who gave ‘fully’ as an answer were from the forestry sector (443, 58%). In addition, while Targets 5 and 6 were rated as poorly or not at all achieved by higher shares of respondents (1,572; 48% for Target 5 / 1,512; 45% for Target 6), slightly more respondents viewed these targets as at least partially addressed (1,727; 52% for Target 5 / 1,846; 55% for Target 6). Target 4 was the only one for which more respondents answered “poorly” or “not at all” than “partially” or “fully” (1,217; 53%). Target 4 was also the one with the most respondents whom answered “I do not know/no answer” (1,234).

In relation to the specific responses of stakeholder groups, a brief breakdown of the predominant responses within each group are presented here, namely for forestry, environment, culture, education, agriculture and industry. The table highlights the answers which received the greatest responses per stakeholder group, including the percentage of responses.

Stakeholder	Target 1	Target 2	Target 3	Target 4	Target 5	Target 6
Agriculture	Partially (48%)	Partially (46%)	Partially (40%)	Poorly (41%)	Partially (41%)	Partially (36%)
Culture	Partially (47%)	Partially (44%)	Partially (36%)	Poorly (41%)	Partially (43%)	Poorly (38%)
Education	Partially (43%)	Poorly (43%)	Poorly (38%)	Poorly (45%)	Partially (46%)	Poorly (43%)
Environment	Partially (52%)	Poorly (42%)	Poorly (35%)	Poorly (48%)	Poorly (44%)	Poorly (44%)
Forestry	Partially (53%)	Partially (63%)	Partially (56%)	Partially (44%)	Partially (48%)	Partially (49%)
Industry	Partially (50%)	Partially (48%)	Partially (43%)	Poorly (44%)	Poorly (43%)	Partially (42%)

Question 3a. Please highlight significant achievements and/or success factors

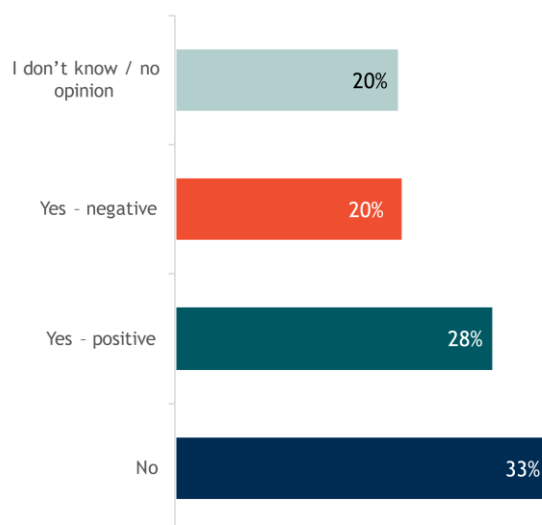
In regard to the identification of significant achievements, open text responses highlighted the benefits stemming from the implementation of the Birds and Habitats Directive and other forms of nature protection were noted as being important to protecting habitats and species (11, 22%- 9 EU citizens, 2 NGOs). In addition, a number of stakeholders noted that the EU Biodiversity Strategy to 2020 has led to increased awareness (6, 12%- 5 EU citizens, 1 business association). Such raised awareness relates to, the importance of habitats and their functions, and the interactions between climate and biodiversity. A number of responses (acknowledging that the majority were received from stakeholders related to Polish forestry- of n=8 responses (4 EU citizens, 2 company/business organization, 1 NGO, 1 public authority), n=6 from Poland forestry) noted that bottom-up approaches to nature conservation have been a success, including the designation of Natura 2000 sites as a sovereign decision, and more general, regional biodiversity measures enacted by regional/local governments rather than at EU-level. Other significant achievements noted included: increased funding for environmental protection (3, 2 EU citizens, 1 NGO); improved agri-environment payments (2, EU citizen and company/business organization); and the Regulation on Invasive Alien Species (2, EU citizen and non-EU citizen).

Question 3b. Please highlight significant gaps and/or reasons for failure

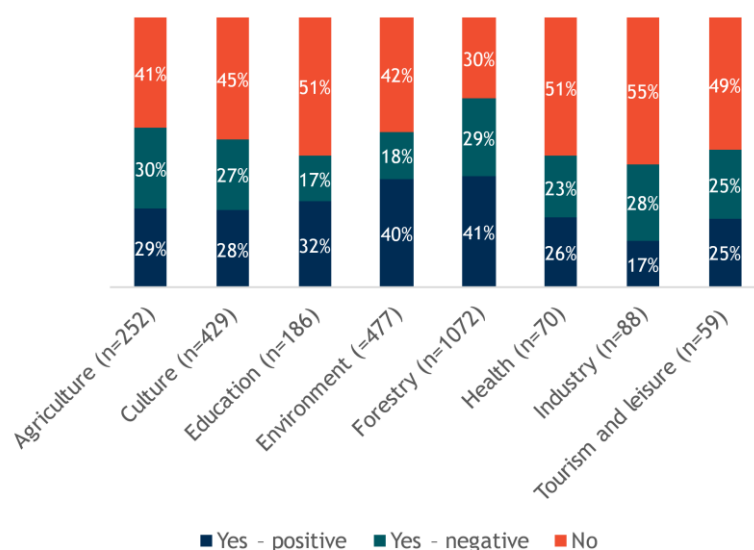
A key reason for failure noted by stakeholders in open text responses related to the lack of integrated, holistic approaches to halting biodiversity loss. 12 respondents (24%- 10 EU citizens, 2 academic/

research institution) noted that conflicts can arise in the management of biodiversity predominantly due to contrasting approaches between MS and EU/international decision making (4, 3 EU citizens, 1 academic/ research institution) and diverging economic interests amongst actors in implementing biodiversity-related measures (5, 4 EU citizens, 1 academic/ research institutions). Furthermore, the formulation of the Strategy itself was regarded as a reason for failure by 7 stakeholders, particularly regarding the ‘lack of enforceability’ due to the legal nature of targets/actions (5, 4 EU citizens, 1 academic/research institution), poor definition of the targets (2 EU citizen). Finally, the lack of enforcement to ensure biodiversity measures were implemented was noted by 3 stakeholders (1 EU citizen, 1 NGO, 1 company/business organisation).

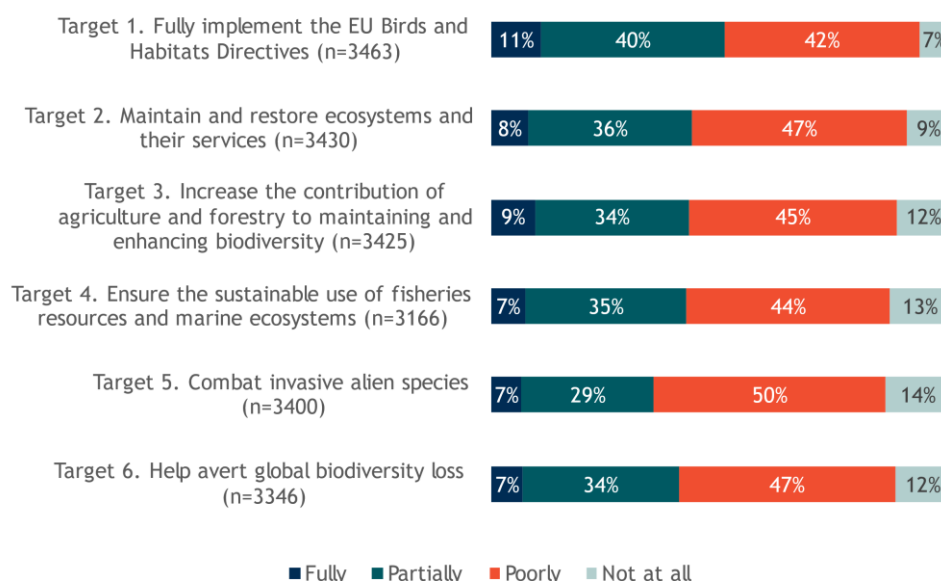
Question 4. Have you identified, since 2011, significant impacts on your sector, field of activity or living area that have resulted from the implementation of the EU Biodiversity Strategy to 2020?



More respondents identified significant impacts since 2011 (1,558; 48%) compared to those who did not identify impacts (1,071; 33%). Although more respondents who identified significant impacts identified positive ones (908; 58%), a significant share also identified negative impacts (650; 42%). A sizeable share of the respondents to the question did not know or had no opinion (638; 19%). In regard to stakeholder preferences, the major groups (i.e. those who provided >50 responses) highlights that environment and forestry stakeholders provided the largest proportion of responses to ‘yes-positive’ within their groups, whereas the majority of industry stakeholders responded ‘no’ (48; 55%).



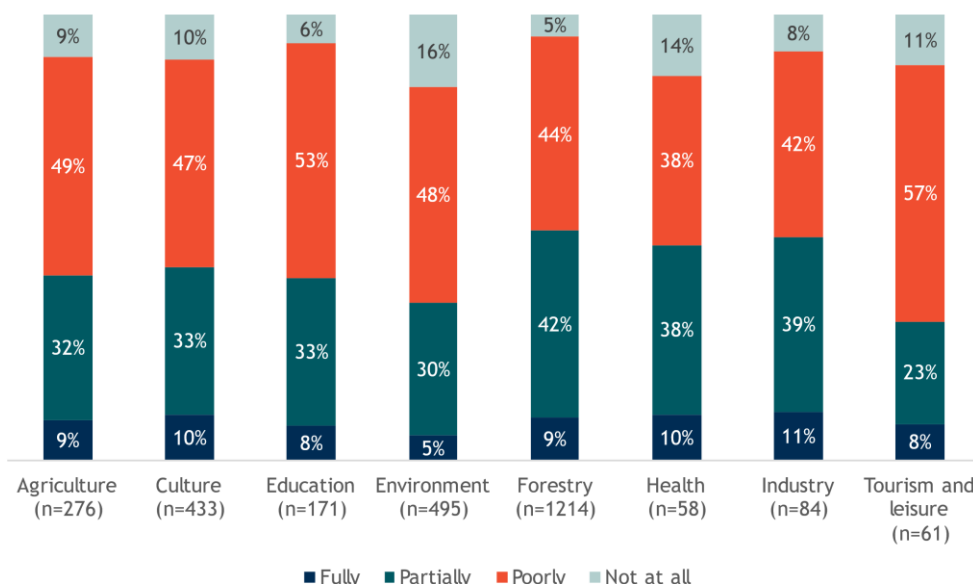
Question 5. Has funding for biodiversity been sufficient to support the implementation of the EU 2020 biodiversity targets?



Note: The total number of responses received to each of the sub-question is stated under each of them, but the number of respondents whom answered "I do not know/no opinion" is not included in the percentages.

The funding allocated to support the implementation of the EU 2020 biodiversity targets was only deemed fully or partially sufficient by more than half of the respondents (excluding the I do not know and no opinion answers) in the case of Target 1 (1,395; 51%). Funding was deemed to be the least sufficient for Target 5, with this target obtaining the most "not at all" responses (366; 14%) as well as the most "poorly" responses (1,303; 50%). Again, the most "I do not know/no opinion" responses were received under Target 4 (1,466; 46% of respondents to this sub-question), while this share hovered between 19 and 27% for other sub-questions.

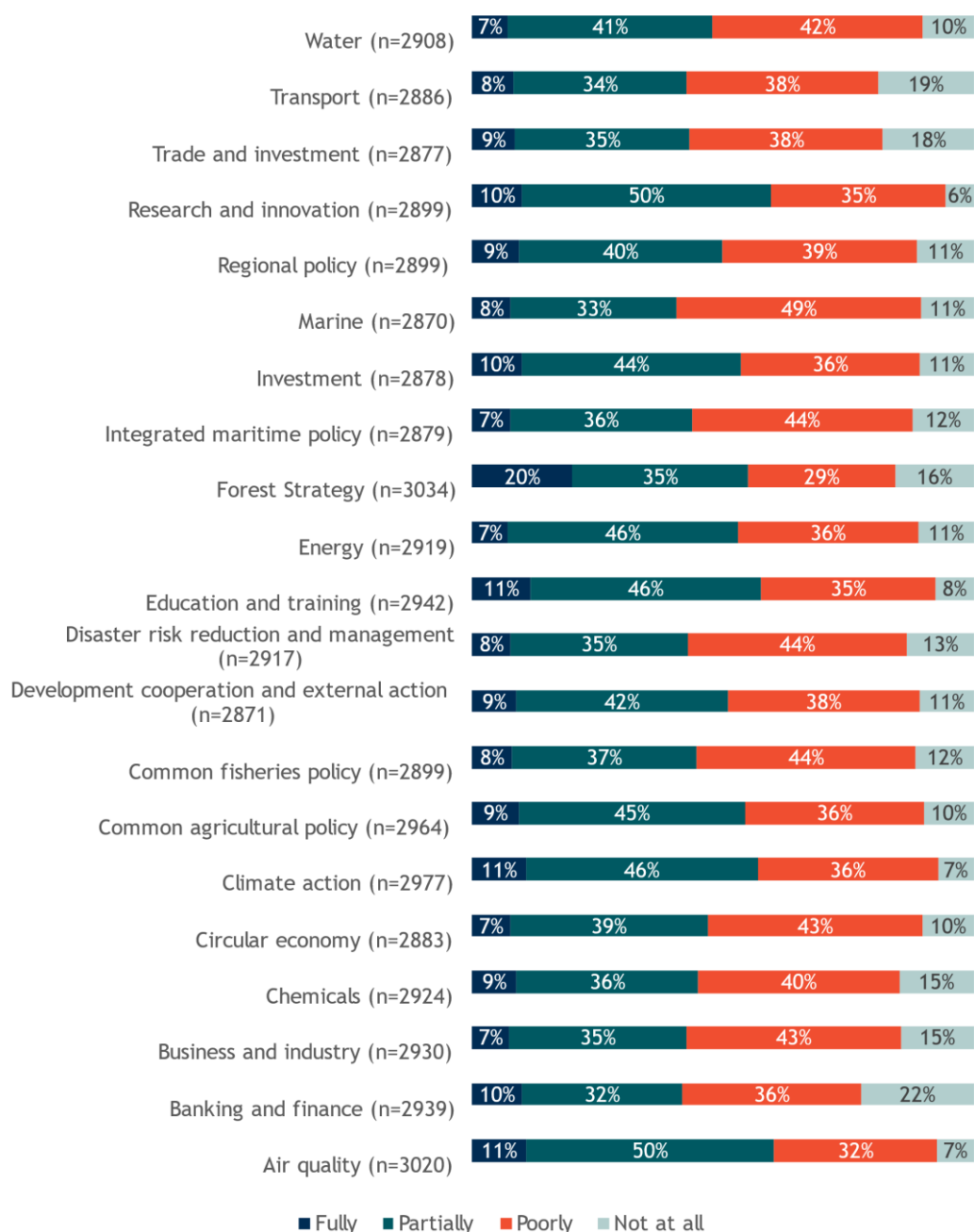
When focussing on stakeholder responses (only those where more than 50 responses were recorded) particularly on Target 2 (due to its importance for the EU Biodiversity Strategy to 2030), the industry, health and culture sectors provided the greatest proportion of responses identifying funding as ‘fully’ being sufficient to support the implementation of Target 2. On the other hand, the tourism and leisure and education sections provided the greatest proportion of ‘poorly’ responses.



Question 6. To what extent have the EU biodiversity targets to 2020 been integrated in the design and implementation of the following EU policies?

The Forest Strategy was the EU policy area for which the highest share of respondents believed that the EU biodiversity targets to 2020 had been fully integrated in its design and implementation (531; 20%). This result should however be carefully interpreted considering the disproportionate number of respondents to the questionnaire belonging to the forestry sector (37% of respondents from forestry sector, of which 25% stated ‘fully’, 42% ‘partially’, 18% ‘poorly’, 7% ‘not at all’ and the remaining answered ‘I don’t know/no opinion’). Looking at the combined responses for “fully” and “partially”, Air quality was the best rated EU policy in terms of its integration of the EU biodiversity targets to 2020 (1,520; 60%), followed by Research and Innovation (1,265; 60%), Education and training (1,324; 58%) and Climate action (1,450; 57%).

The EU policy area with the highest share of respondents believing that it has not aligned itself at all with the EU biodiversity targets to 2020 was banking and finance (360; 22%). The stakeholder group which identified banking and finance as misaligned were (as a proportion of all responses) the environment (99; 28%), forestry (83; 23%) and culture (70; 19%) sectors. The area with the highest combined share of “not at all” and “poorly” responses was marine policy (884; 59%), largely from responses from the forestry (256; 35%), environment (146; 20%) and culture (105; 14%). Marine policy was also the area where most respondents did not know or had no opinion on the question (1,378; 48% of the total number of respondents to this sub-question).

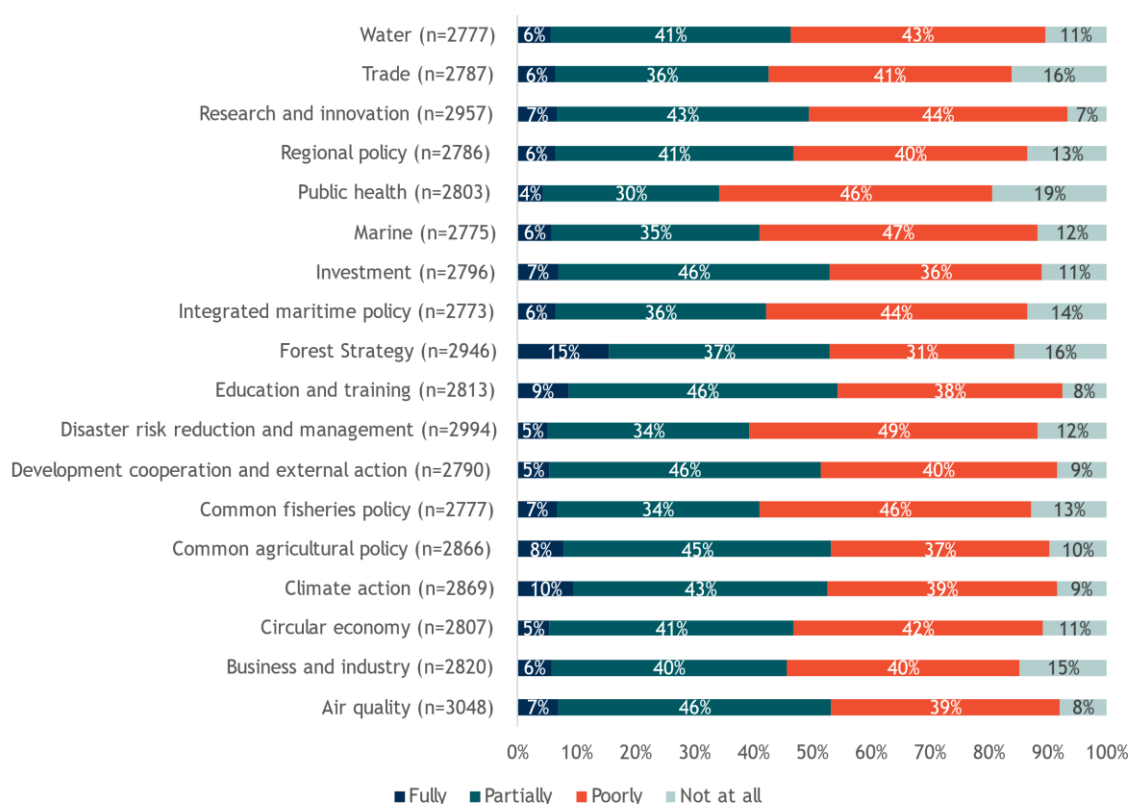


Note: The total number of responses received to each of the sub-question is stated under each of them, but the number of respondents whom answered "I do not know/no opinion" is not included in the percentages.

Question 7. To what extent has the EU Biodiversity Strategy to 2020 contributed to the objectives of the following EU policies?

The Forest Strategy was the EU policy with the highest share of respondents believing that the EU Biodiversity Strategy to 2020 had fully contributed to its objectives (393; 15%), but for the reason already mentioned in results to question 6, these reasons should be cautiously interpreted. Education and training was the policy with the highest share of respondents whom believed that the EU Biodiversity Strategy to 2020 had fully or partially contributed to its objectives (1,194; 54%), and was closely followed by several policies for which this share reached 53% (namely Air quality, Climate action, the Common Agricultural Policy, the Forest Strategy, and Investment).

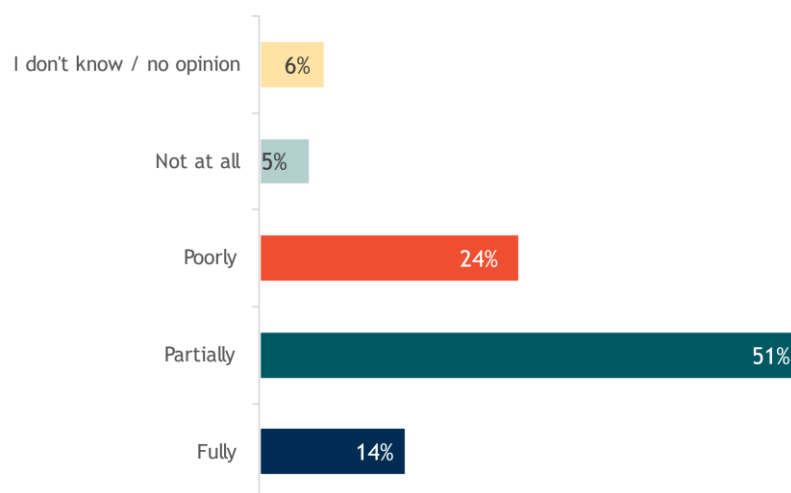
The EU policy area with the highest share of respondents believing that the EU Biodiversity Strategy to 2020 had not contributed at all to its objectives was public health (391; 19%), with forest (145; 37%), culture (75; 19%) and environment (68; 17%) sector stakeholders providing the greatest number of responses to this.



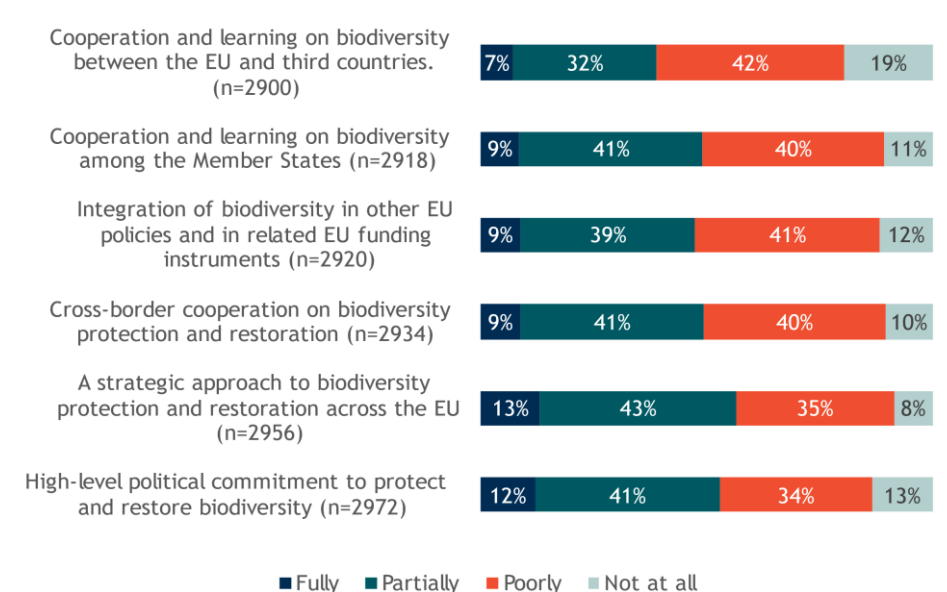
Note: The total number of responses received to each of the sub-question is stated under each of them, but the number of respondents whom answered "I do not know/no opinion" is not included in the percentages.

Question 8. To what extent has the EU Biodiversity Strategy to 2020 responded to the main biodiversity needs and issues in the EU?

Just over half of the respondents to this question assessed the EU Biodiversity Strategy to 2020 as having partially responded to the main biodiversity needs and issues in the EU (1,832; 51%). Combining results for "partially" and "fully", a larger proportion of respondents had a least a somewhat positive response to this question (2,329; 65%) compared to those who answered either "poorly" or "not at all" (1,053; 29%). A number of stakeholders added in open text stated that further integration and coordination with other policy domains is required (14; 28%), particularly in regard to agriculture (42%), land use (21%) and energy (21%) policies. Furthermore, stakeholders (8;16%) noted that more ambition is required to achieve biodiversity objectives at MS, EU and international level.



Question 9. To what extent has the EU Biodiversity Strategy to 2020 helped to ensure

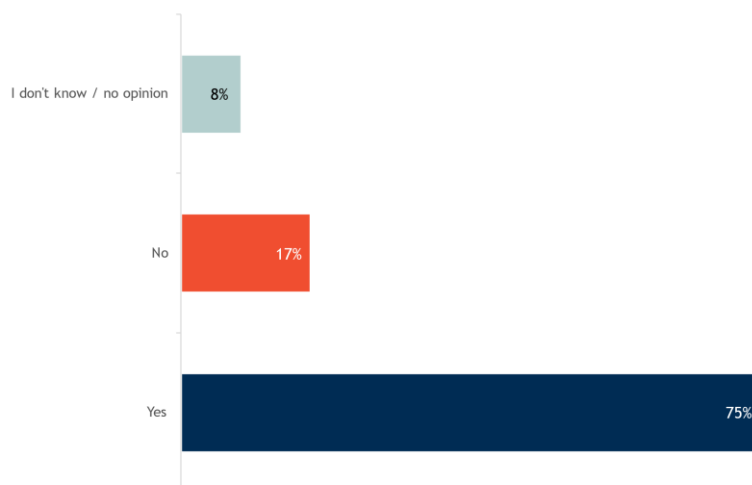


Note: The total number of responses received to each of the sub-question is stated under each of them, but the number of respondents whom answered "I do not know/no opinion" is not included in the percentages.

The best rated contribution of the EU Biodiversity Strategy to 2020 was its contribution to a strategic approach to biodiversity protection and restoration across the EU, with 13% of respondents (357) assessing that it had fully contributed to this aspect, and a combined share of 57% of respondents (1,525) believing it had fully or partially contributed. The EU Biodiversity Strategy to 2020's contribution to ensuring a high-level political commitment to protect and restore biodiversity was also well-rated, with 53% of respondents (1,454) believing that it had at least partially contributed.

Cooperation and learning on biodiversity between the EU and third countries was the least well rated sub-question, with 19% of respondents (694) judging that the EU Biodiversity Strategy to 2020 had not helped at all to ensure this aspect, and a combined share of 61% of respondents (1,348) arguing it had poorly contributed or not contributed at all. This aspect also obtained the highest share of "I do not know/no opinion" replies (695; 24% of the total number of respondents to this sub-question).

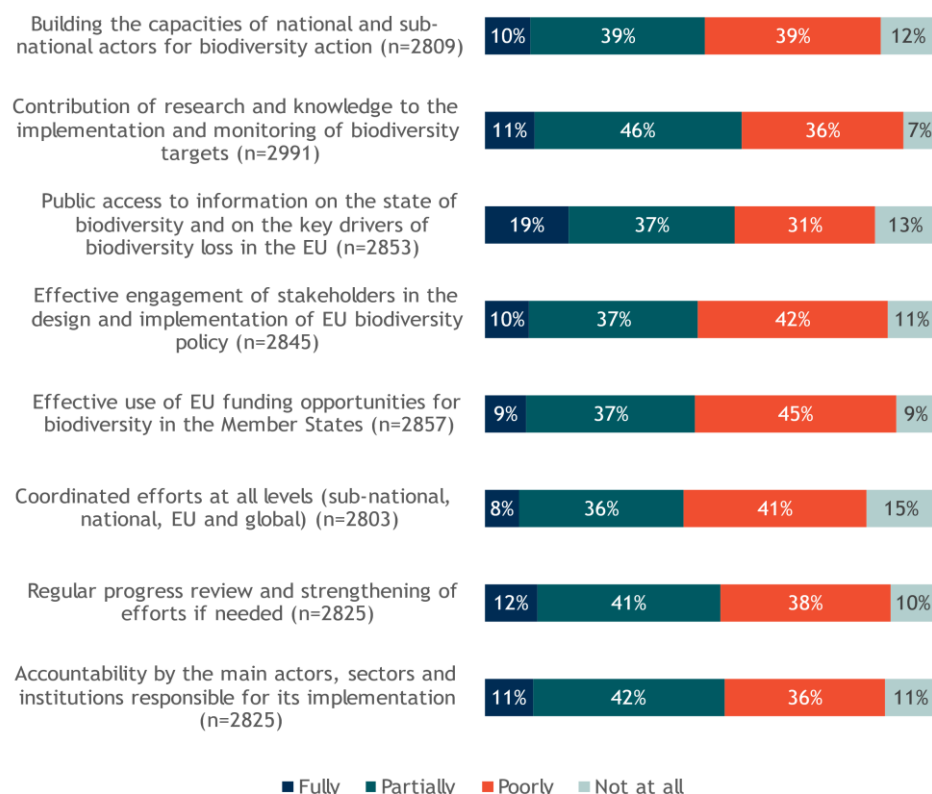
Question 10. Should any aspects of the EU Biodiversity Strategy to 2020 have been dealt with at national or local level, rather than at the EU level?



Three quarters of the respondents to this question (3,493; 75%) agreed that some of the aspects of the EU Biodiversity Strategy to 2020 should have been dealt with at national or local level, rather than at the EU level. Conversely, 17% of respondents (782) disagreed with this statement, and 8% (366) did not know or did not have an opinion. Regarding national/local preference, stakeholders noted in open text responses that national/local -level biodiversity characteristics are key to establishing robust policies, and strategies should be established with local knowledge/ local communities (20; 47% - 18 EU citizen, 2 company/business organisations). When observing stakeholder group responses individually, sectors which favour 'yes' by more than 75% within their group included agriculture (273; 85%), civil protection (32; 78%), culture (400; 76%), fisheries and aquaculture (23; 82%), food (29; 76%) forestry (2006; 96%), industry (92; 76%), mining (11; 85%), tourism and leisure (60; 75%) and waste management (15; 79%).

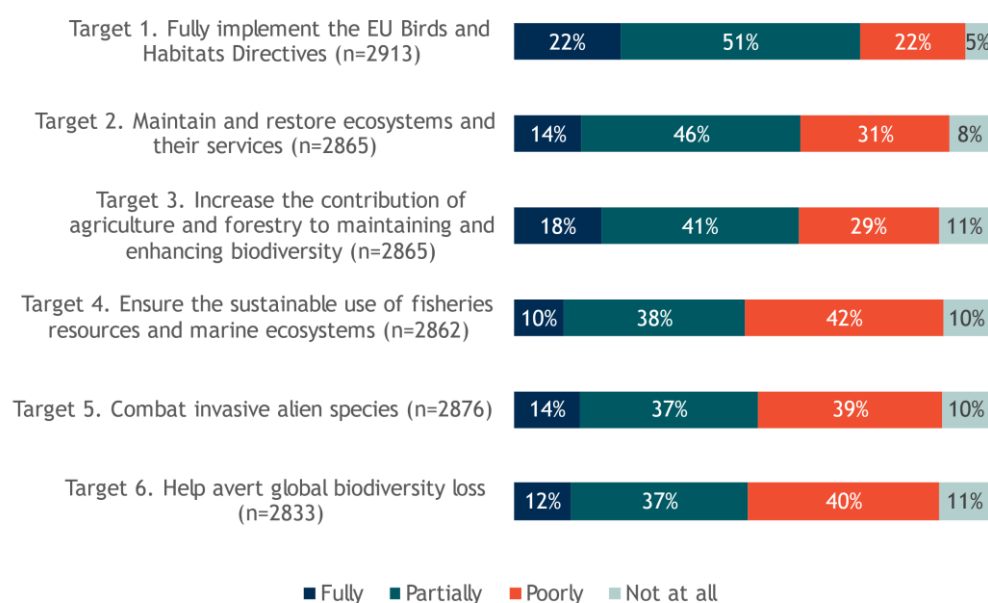
Question 11. The EU Biodiversity Strategy to 2020 established a common implementation framework to track progress in reaching the targets and ensure coordinated implementation at all levels. To which extent has this framework ensured:

A total of 453 respondents (19%) stated that the EU Biodiversity Strategy to 2020's common implementation framework fully ensured that public access to information on the state of biodiversity and on the key drivers of biodiversity loss in the EU. The best rated answer when combining the responses "fully" and "partially" was the contribution of research and knowledge to the implementation and monitoring of biodiversity targets, with 57% of respondents (1,400) choosing one of the two responses. Public access to information on the state of biodiversity and on the key drivers of biodiversity loss in the EU, regular progress review and strengthening of efforts if needed and accountability by the main actors, sectors and institutions responsible for its implementation all ranked above 50% in this respect as well (1,347; 55% / 1,193; 52% / 1,227; 52% respectively). The framework was deemed to have worked the least well in coordinating efforts at all levels (sub-national, national, EU and global), with 15% of respondents (509) believing it had not ensured such coordination at all, and 41% of respondents (903) stating that it has done so poorly. The percentage of "I do not know/no opinion" replies varied between 15% (425) for public access to information on the state of biodiversity and on the key drivers of biodiversity loss in the EU to 20% (570) for building the capacities of national and sub-national actors for biodiversity action.



Note: The total number of responses received to each of the sub-question is stated under each of them, but the number of respondents whom answered "I do not know/no opinion" is not included in the percentages.

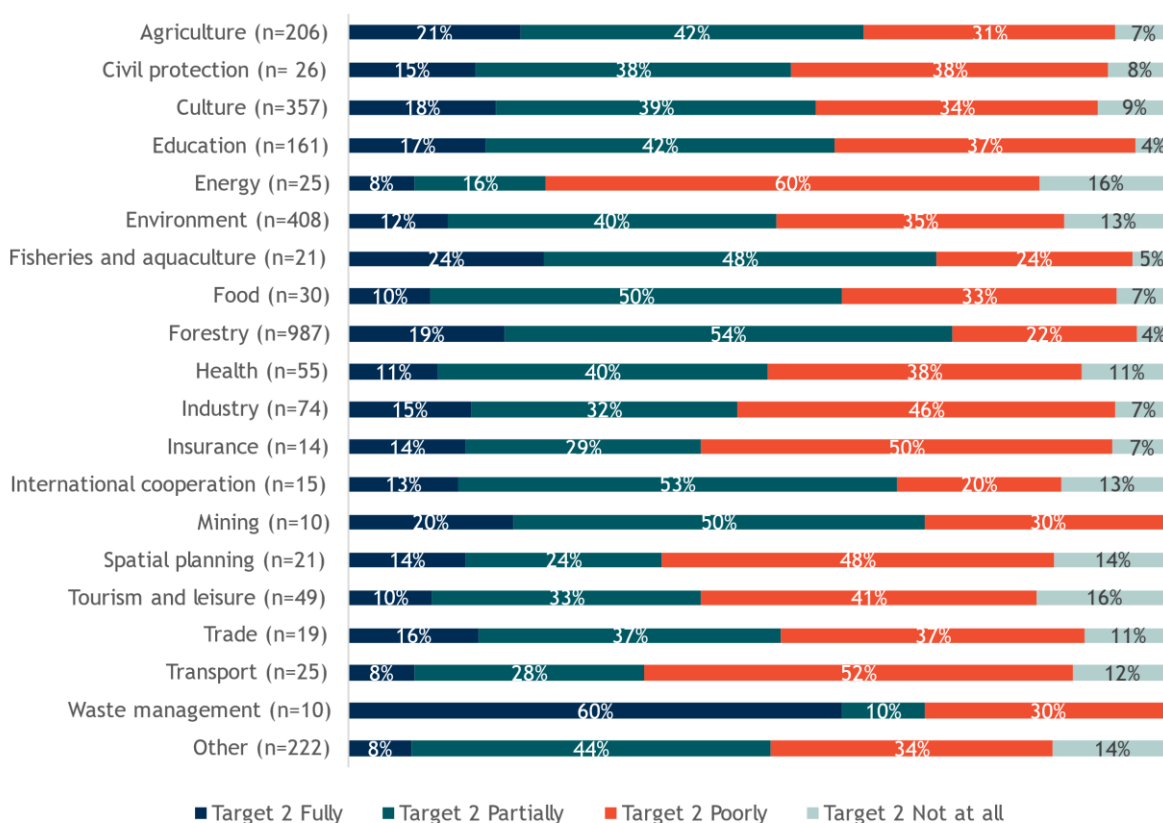
Question 12. To which extent has the monitoring framework for the EU Biodiversity Strategy to 2020 enabled the tracking of progress in reaching the targets?



Note: The total number of responses received to each of the sub-question is stated under each of them, but the number of respondents whom answered "I do not know/no opinion" is not included in the percentages.

The target believed to have benefited the most from the monitoring framework for the EU Biodiversity Strategy to 2020 in terms of tracking of progress towards its achievement was Target 1, with 525 (22%) of respondents saying the framework has fully enabled the tracking of progress, and a combined 1,716 respondents (73%) saying it has at least partially been the case. Conversely, the two targets with the highest proportion of respondents believing the monitoring framework has not enabled the tracking of progress at all were Target 3 (519; 11%) and Target 6 (673; 11%). Combining the answers “poorly” and “not at all”, both Target 4 and Target 6 scored 11% (with a total number of 836 and 1,096, respectively). Again, Target 4 received the highest share of “I do not know/no opinion” replies (1,234; 43% of the total replies to this sub-question). Key hindrances to monitoring noted by stakeholders in open text included the lack of systematic, comprehensive monitoring frameworks (12; 24%- 7 EU citizens, 3 NGOs, 1 company/business organisation, 1 other), the lack of standardized monitoring approaches (6; 12%- 3 EU citizens, 2 company/business organisation, 1 NGO) and general lack of coordination/ information disseminated between relevant actors (5; 10%- 4 EU citizens, 1 other).

When focusing on Target 2 (due to its importance for the Biodiversity Strategy to 2030), the sector groups which most responded that the monitoring framework for Target 2 fully enabled tracking of progress included fisheries and aquaculture (5; 24%), agriculture (43; 21%) and mining (2; 10%), whereas those who responded ‘not at all’ in higher proportions within their groups included tourism and leisure (8; 16%) and energy (4; 16%).



Question 13. Other comments

From the randomised selection of responses to this question, a number of key themes emerged. The perceived lack of ambition of the Strategy and/or lack of legally binding nature was mentioned as a key

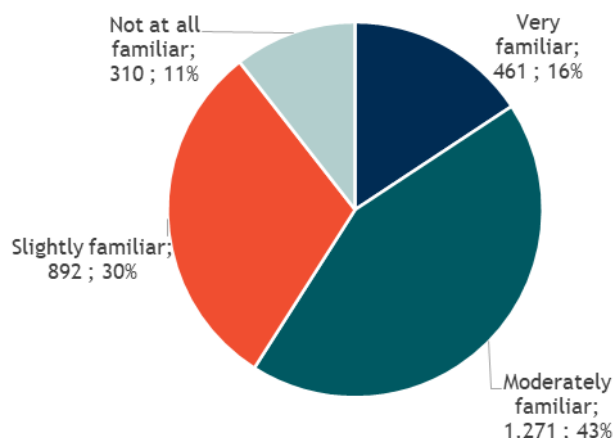
barrier in 12 of the responses (24%- 6 EU citizens, 4 company//business organisations, 2 NGOs). Furthermore, stakeholders (8;16%- 2 EU citizens, 2 academic/research institute, 2 NGOs, 2 other) noted that greater enforcement of legislation is required, in addition to greater knowledge sharing practices (6;12%- all EU citizens). In addition, 2 papers were uploaded to the survey which aligned to Section I of the OPC. A summary of their content is outlined in the table below.

Table 2-1 Additional documents submitted by OPC participants relevant for Section I

Organisation / respondent	Feedback summary
Wildlife conservation society (WCS)	<p>WCS outlined key aspects to take into consideration in the evaluation, relating to Target 6 in particular. This included:</p> <ul style="list-style-type: none"> - Acknowledgment of efforts to better prioritise financial investments through development aid programmes to benefit biodiversity. - Lack of actions completed to reduce the impacts of EU consumption on biodiversity outside of the EU. - Lack of action to failed to address the impact of the high levels of unsustainable consumption on biodiversity by the EU and forests in partner countries between 2010 and 2019. - A major weakness remains in Free Trade Agreements (FTA) regarding the lack of compliance measures for Trade and Sustainable Development chapters in contrast to the other FTA chapters. - Strong initiative shown by DG INTPA in supporting initiatives for biodiversity conservation. - Greater engagement and support of Indigenous Peoples and local communities is required. - Greater investment in the Neighbourhood, Development and International Cooperation Instrument is required. <p>Finally, the paper analysed some key gaps in the Strategy- including:</p> <ul style="list-style-type: none"> - Linking the Strategy to health policy. - Lack of inclusion of illegal and unsustainable wildlife trade in the Strategy. - Greater attention needed towards global marine ecosystems and oceans- particularly fisheries issues.
Stockholm University Baltic Sea Centre	<p>The paper presents some critiques of the Strategy, namely the failure to protect species and habitats, particularly in marine ecosystems. Key issues which have prohibited achieving Targets 1 and 4 in Natura 2000 areas are linked to commercial fishing, dredging construction, shipping and boat traffic. The paper key issues which should be taken into consideration when implementing Marine Protected Areas (MPAs). Finally, the paper highlights the challenges posed in regard to environmental considerations included in the Common Fisheries Policy (CFP). This includes the perceived lack of coordination between the CFP and Marine Strategy Framework Directive and the Water Framework Directive.</p>

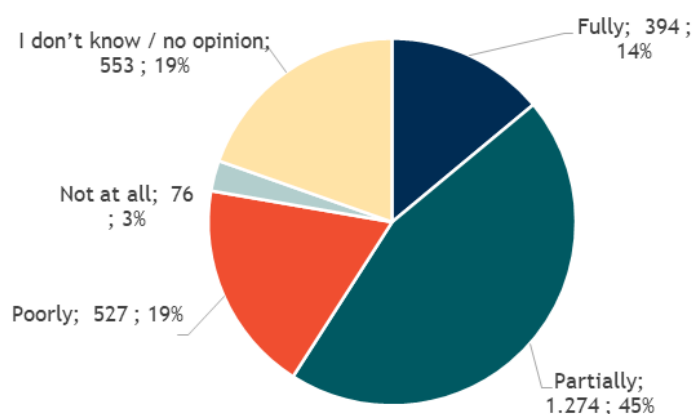
Part II: Review of the application of the EU Regulation on Invasive Alien Species

Question 1- How familiar are you with the EU Regulation on Invasive Alien Species?



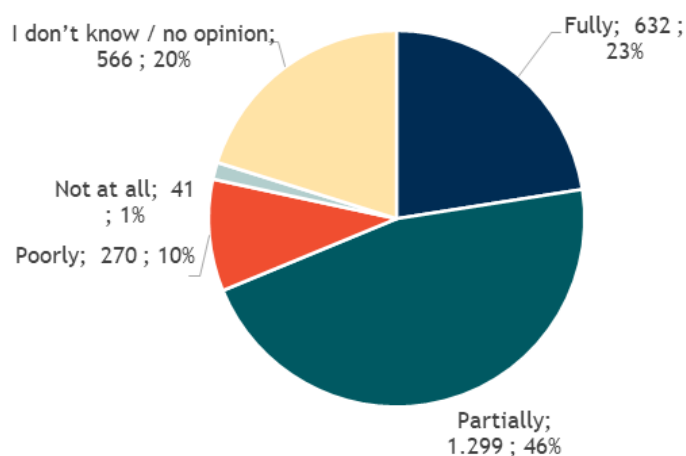
A greater proportion of respondents noted they had some familiarity with the IAS Regulation, with a little over half stating they were either ‘very familiar’ or ‘moderately familiar’. A significant proportion (310; 11%) of respondents noted they were ‘not at all familiar’ with the IAS Regulation, which should be considered when interpreting the results shown in this section of the report.

Question 2- To what extent is the design of the Regulation adequate to address the threat posed by invasive alien species to biodiversity in the EU?



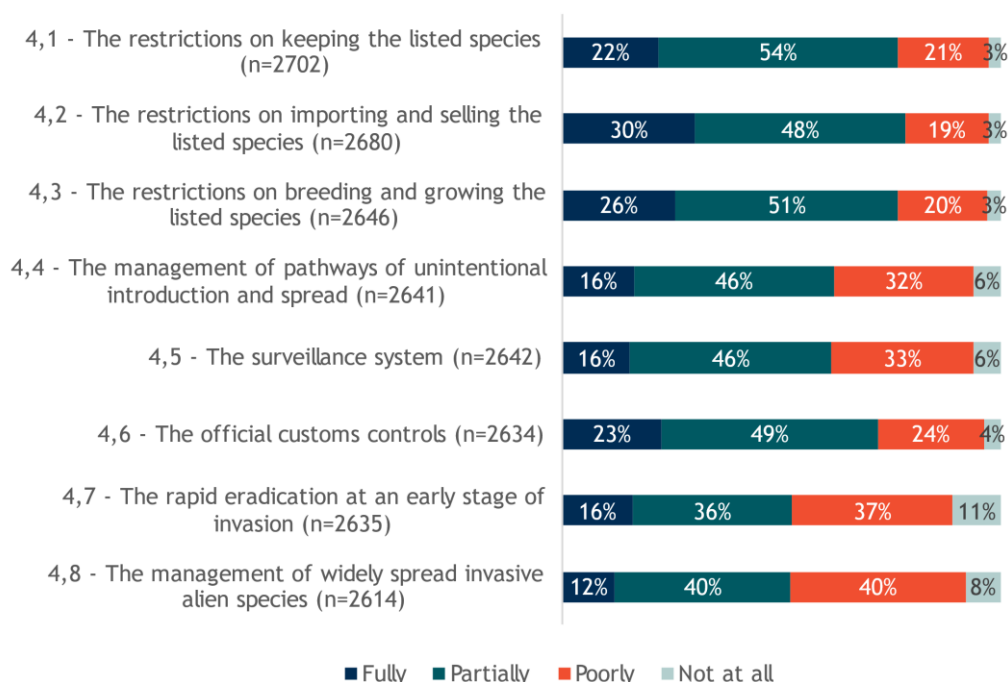
The largest proportion of respondents stated that they at thought the Regulation was ‘partially’ adequate to tackle invasive alien species threats to biodiversity (1,274; 45%), with a further 14% (394) indicating that the Regulation was ‘fully’ adequate. In regard to negative responses, 22% of respondents indicated that the Regulation did not (response ‘not at all’) or ‘poorly’ tackled the threat posed by invasive alien species to biodiversity.

Question 3- Does the current list of invasive alien species of Union concern cover the most relevant species to be controlled in the EU?



Respondents provided a majority of positive responses (761; 69%) to this question, outlining that the Regulation 'partially' or 'fully' covered the most relevant invasive species of Union concern. Only a small proportion indicated that the list did not adequately cover the most relevant species (311; 11%), whilst numerous respondents had no opinion on the coverage (566; 20%).

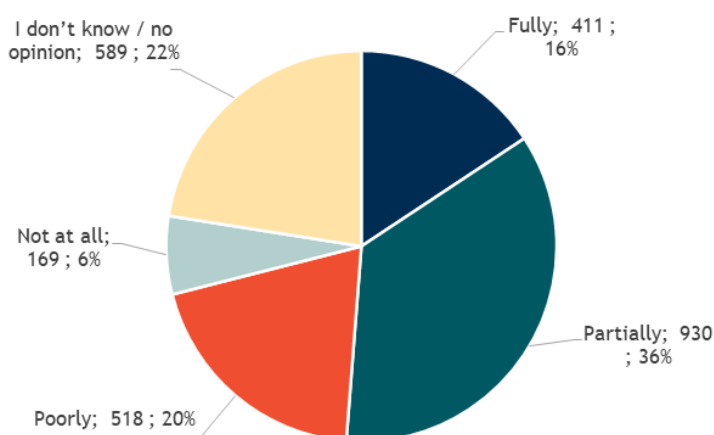
Question 4- To what extent have the following provisions on invasive alien species of Union concern been implemented?



Respondents identified that the restrictions on importing and selling listed species (4.2) have been implemented to the greatest extent (632; 30%), closely followed by the restrictions on breeding and growing the listed species (532; 26%). The provision with the greatest overall of responses that were positive (i.e. either 'fully' or 'partially') was the also provision 4.2, with 78% of total responses indicating progress on implementation. On the contrary, respondents identified the rapid eradication at an early stage of invasion (4.7) and the management of widely spread invasive species(4.8) as the

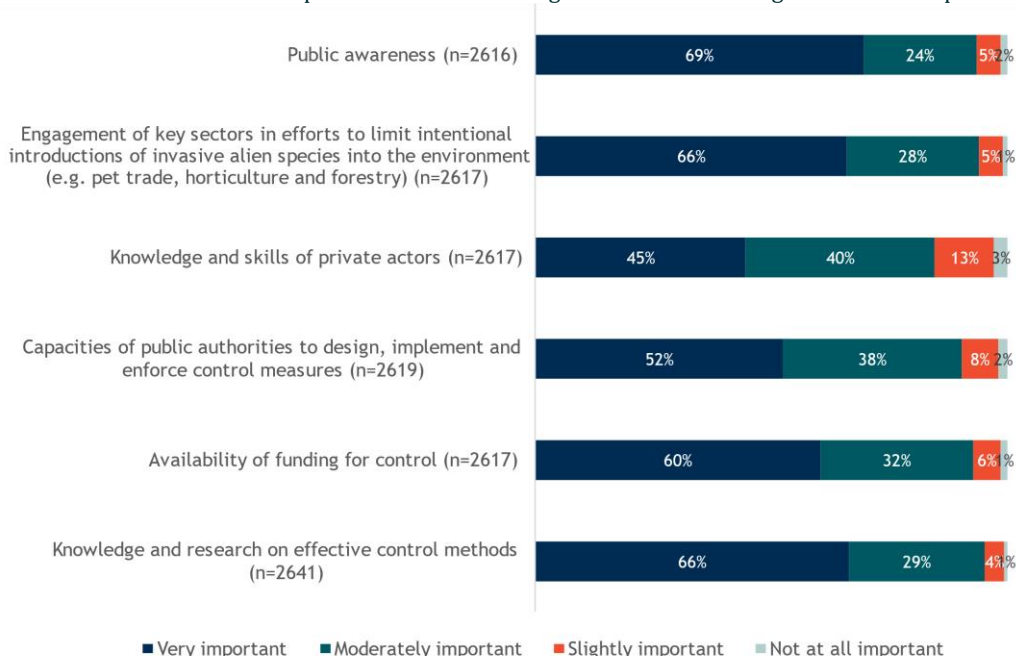
provisions which have been implemented least, with a total of 48% of replies indicating both of these have been implemented 'poorly' or 'not at all'.

Question 5- In your experience, are the costs of controlling invasive alien species of Union concern (i.e. restrictions, surveillance, eradication and management) proportionate to the benefits for biodiversity, human health and the economy?



The majority (1,341; 52%) of respondents stated that the costs of controlling invasive alien species of Union concern are proportionate to the benefits, yet a significant proportion of respondents indicated opposite views (i.e. 'poorly' or 'not at all').

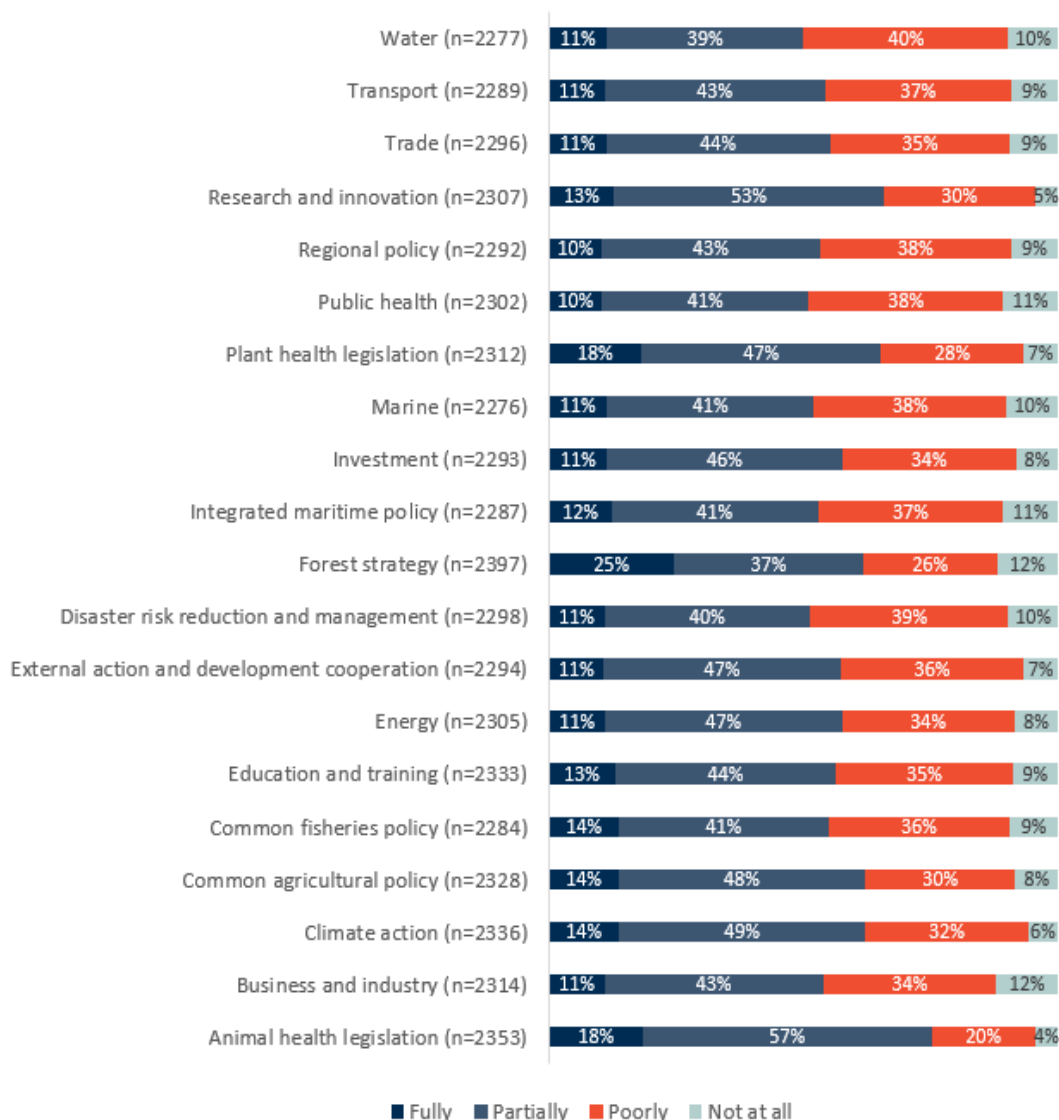
Question 6- Please assess the importance of the following factors in combatting invasive alien species:



The majority of respondents indicated that all of the listed factors were at least 'moderately' important. The most important factor ('very important') identified by respondents was related to public awareness (1,694; 69%) followed by knowledge/research on effective control measures, and engagement of key sectors (1,626; 66% and 1,601; 66% respectively). Knowledge and skills of private actors received the greatest proportion of responses which indicated such a factor was 'not at all

important' (68; 3%), whilst also receiving the largest number of responses indicating that this factor is only 'slightly important' (303; 13%).

Question 7- To what extent have the objectives of the Regulation been integrated in the design and implementation of the following EU policies:



Respondents identified that the Regulation has been integrated into the Forest Strategy to the greatest extent (464; 25%), which is likely due to the high number of forestry-sector related stakeholders who responded 'fully' to the survey (58% of respondents were forestry-related). Plant health and animal health legislation also received a high proportion of 'fully' or 'partially' responses, whilst water policy was regarded as the policy where objectives of the Regulation have been integrated 'poorly'. The Forest Strategy was also indicated as the policy field which has not been integrated with the Regulation to any extent ('not at all', 226; 12%), whilst business and industry received similar responses (171, 12%).

Analysis of campaigns

During the analysis of the OPC responses, one major campaign was identified. It consisted of 104,333 identical responses in Section III of the survey, and was jointly organised by BirdLife, EEB, and WWF

EPO. The pre-filled responses were available on the <http://www.restorenature.eu/> website in six languages (English, French, Spanish, German, Italian, and Dutch). All of these responses were not included in the analysis of this report, particularly as these responses were aimed at Section III of the survey, rather than sections I and II which are the focus of this report. An additional 38 campaign responses were located in Section I of the survey, largely derived from EU citizens (63%), ‘other’ stakeholders (10%), company/business organisations (8%) and NGOs (8%). The responses provided were identical only in the open text responses, and are highlighted in the table below.

Table 2-2 Campaign responses identified

OPC Question	Response
3A	The successes in protecting biodiversity in the area are not due to the EU biodiversity strategy, but to initiatives of the regions and member states that formulate corresponding goals with a bottom-up approach.
3B	The static approach of the biodiversity strategy contradicts the dynamic development of biodiversity at the local / regional level; Climate change not taken into account; there is no partnership approach with owners / managers.
4	The EU biodiversity strategy follows a top-down approach, which neither appreciates the experiences and the achievements of forest and land owners nor supports them in a sustainable way.
8	The strategy is unsuitable for responding to the challenges of biodiversity. The top-down approach is counterproductive, it does not take regional specificities into account.
11	In practice, public access to information is interpreted in a very one-sided way Forest owners are not seen as partners in protecting biodiversity. Activities to protect biodiversity are not implemented as strictly in all sectors as in the forest.
12	Target 1, 2, 3 and 5: All of these targets are documented through legislation (Natura 2000, WFD, IAS Regulation, EUTR) and through regular monitoring and reporting. Target 6: The EU has no competences to regulate third countries to protect biodiversity .
13	The successful protection of biodiversity can only take place at the local and regional level. Bottom-up and voluntary approaches in partnership with forest owners are more successful and sustainable. The EU's approach leads to a loss of acceptance among forest owners. Sustainably and multifunctionally managed forests must no longer be misused as “green washers” for other sectors.

2.2 Targeted EU-Level Consultations

2.2.1 Approach

24 targeted interviews were conducted with EU-level umbrella organisations. The interview protocol was designed and executed after a rigorous literature review. These interviews followed the evaluation questions, with additional specific questions tailored to each sector drawing from specific issues evidenced in the literature. Draft interview questions were shared with DG ENV prior to interviewing. The following approach was undertaken:

Step 1: Questionnaire development

An effective questionnaire, which enables access to quality, data focused input, is a fundamental tool when conducting targeted consultations. The Better Regulation Toolbox #54 notes that closed questions are key for quantitative information, whereas open questions are better for qualitative information. Only open questions were used in the interview questionnaires, with some supporting questions to focus

on key issues and data gaps. The interview questionnaires were tailored to the specialisms and background of each stakeholder/stakeholder group. The questionnaires were also written in a way to enable written responses.

Each interview included a simple introduction, allowing the project team to provide an overview of the objectives and scope of the project, while also offering the stakeholder a chance to provide an introduction on their organisation and position. For written respondents a few short questions were provided to ensure an understanding of the stakeholder type is recorded, including:

- An overview of introductory questions required for the targeted stakeholder consultation questionnaire;
- Stakeholder name, organisation, and contact details;
- Stakeholder categorisation based on a preselected list;
- Statement of anonymity (whether the stakeholder approves the contents for use/quoting).

Step 2: Stakeholder selection

A preliminary list of stakeholders was identified for the targeted consultation through a process of stakeholder mapping and using the project team's established network among relevant stakeholders, namely EU and international institutions, Member States' representatives, industry and environmental NGOs and academic institutions. The list of stakeholders was subsequently finalised in consultation with DG Environment.

Once the final list was agreed, the project team identified the appropriate contact points in the selected organisations to introduce the relevant assessment and the expected topics to be covered in the possible interview. This was also done to enable stakeholders to inform their networks in a timely fashion in case additional information was required in support of the interview and to allow the project team to identify unforeseen topics that should be covered and/or treated with sensitivity. Following this first informal exchange, a formal invitation was sent to the organisation by email. Lastly, once organisations accepted and a date was set, an interview questionnaire, including information on the project background and contact details of the interviewer were shared.

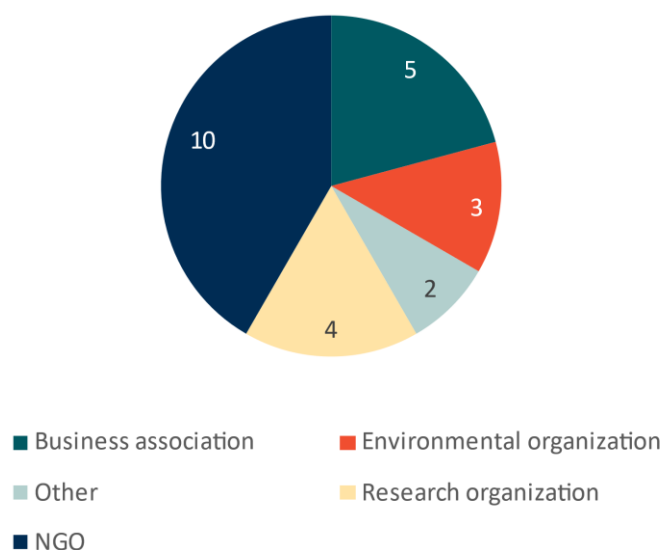
Step 3: Organization and facilitation of interviews

Due to the restrictions introduced in the EU in response to the Covid-19 pandemic, all interviews took place remotely, using online teleconferencing software. In addition, and to ensure a high response rate and valuable input from key stakeholders, written responses to the questionnaire were accommodated. Stakeholders were provided an opportunity to state whether or not they would like their organisation's name listed in the final reporting and were given the opportunity to review the inputs they provided to the consultation process.

2.2.2 Analysis

The interviews have provided variety of interview minutes, written feedback, and additional attachments and studies. All of this information will be synthesised and analysed to contribute to the draft final and final fitness check reports. Below summarises the stakeholder types which were interviewed.

Figure 2-4 Stakeholder's interviewed



2.3 Targeted MS Consultations

2.3.1 Member State Interviews

65 targeted interviews were conducted with MS stakeholders. MS experts within the study team derived the interview pro forma following a rigorous literature review of national literature and data, which formed the basis of the 10 MS case studies developed as part of this study. The case studies focused on a selection of EU Biodiversity Strategy to 2020 Targets, based on the national context. The focus targets of each MS are shown below.

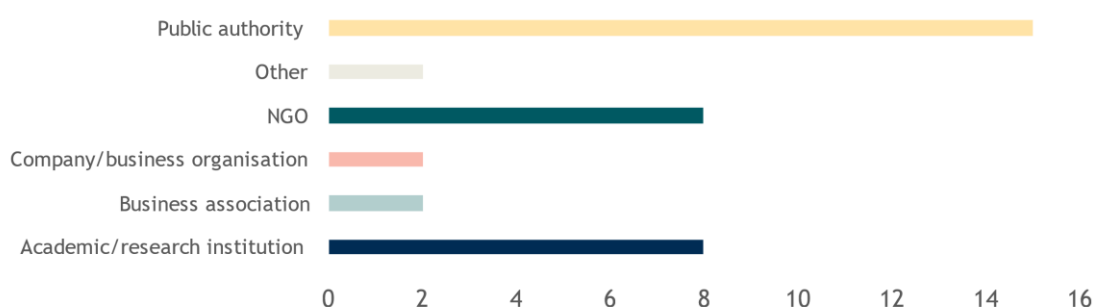
Table 2-4 Focus Targets for MS Case Studies

Member state	Target focus	Rationale
NL	1 2 4	High population density presents challenges in implementing Nature Directives; Marine management issues in North Sea; Major progress in mapping and assessment of ecosystems and their services and NCA; approaches to NBS ("room for the river") etc.
BG	1 3A 5	Large Natura 2000 network but also many implementation and enforcement challenges; one of the newest Member States where other policies impacts could be detected within the timeframe of the Strategy; efforts being made to map and address IAS
DE	2 3A 5	Restoration Prioritisation Framework developed, initiatives to promote green infrastructure and no net loss; extensive data and action for IAS
LT	3B 4	Importance of forestry management issues as well as management of Baltic Sea
ES	1 4	Large Natura 2000 network; extensive marine area covering both Mediterranean and Atlantic coasts
FI	2 3B 4 5	Restoration Prioritisation Framework developed; Importance of forestry; action being taken for IAS

Member state	Target focus	Rationale
GR	3A 3B 2	Importance of agriculture for biodiversity; significant impacts and action for IAS
SK	1 2	Large Natura 2000 network and well-developed data; action taking place for ecosystem restoration and green infrastructure
IT	2 4	Action for ecosystem restoration and green infrastructure; Marine management issues
RO	1 3A 3B	Efforts to promote green infrastructure and ecosystem restoration; rural development and agriculture issues

For interviews, a similar approach to the EU-level interviews was taken, yet the interview content was adapted and refined to align with the national context where applicable. Figure 2-5 below highlights the stakeholder types interviewed.

Figure 2-5 Stakeholders Interviewed- MS Case Studies



As shown in Figure 2-5, public authorities were the most widely consulted stakeholders, followed by academic/research institutions and NGOs.

2.3.2 Member State Surveys

To complement the MS interviews, a survey was developed to garner further stakeholder inputs. The questionnaire was developed to align with the evaluation questions of the study, ultimately consisting of 57 questions.

Approach

The approach to the survey development was similar to that outlined in the above sections, using the MS-specific literature review and the study team's expert knowledge to develop the survey questionnaire. The survey aimed to identify examples of what worked particularly well and where major problems occurred, the underlying factors from the viewpoint of different stakeholders (of both success and failure), what could have been done better; as well as the impacts that implementation (or non-implementation) of the biodiversity actions has had on different stakeholders.

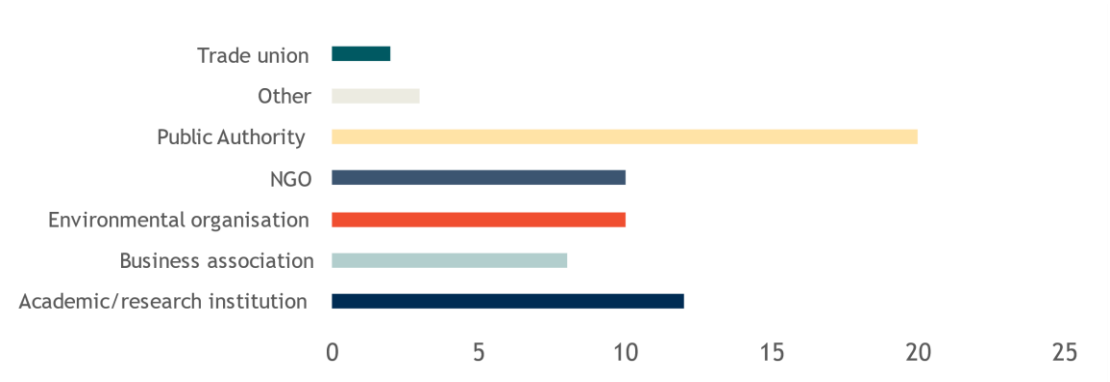
Stakeholders were identified by MS experts, and were invited with a letter of support from the European Commission. To further increase the participation rate, the survey was translated into the national language of the MS, whilst the survey was made user-friendly by allowing participants to filter

the questions based on their expertise. The survey was hosted on an online platform for 6 weeks, between November and December 2020.

Analysis

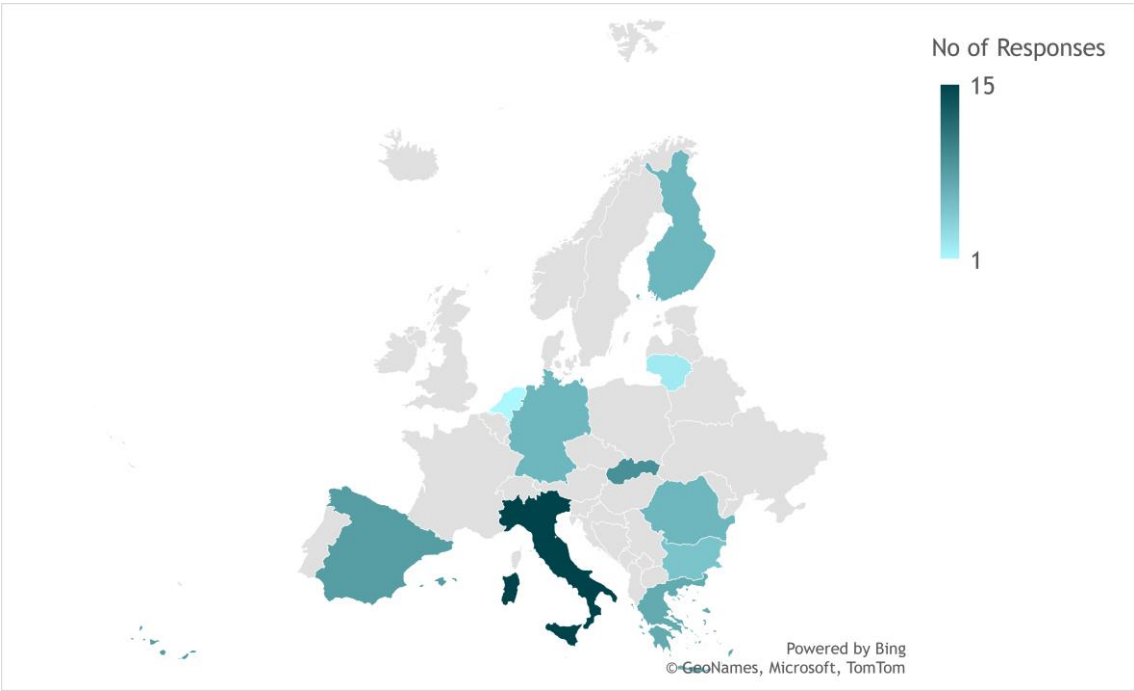
A total of 64 responses were received from the survey across the 10 MS, with the majority of responses coming from public authorities and academic/research institutions.

Figure 2-6 Stakeholder responses- MS Survey



The responses were spread across the 10 MS case studies, with the majority (15) of responses received from Italian stakeholders.

Figure 2-7 Stakeholder survey responses per MS



Appendix E - Coherence supplementary evidence

EQ 11.2 To what extent does the Strategy support other EU environmental policy objectives, for example, in relation to clean air and water, the marine environment, the transition to a circular economy, sustainable production and consumption, soil protection, sustainable land use and management, waste management, and the sustainable use of resources? What are the synergies or overlaps?

There is a minimal evidence gap regarding the achievement of the EU environmental objectives, as these are reported in a series of EU reports from the European Commission and the EEA, plus consultancy reports carried out for the EU, accompanied by IPBES international assessments, and independent (NGO and other) reports on state of progress (see Table F-1).

Overall, some progress has been made in reaching the EU's environmental policy objectives to 2020, for clean air, climate, freshwater, marine environment, and fish stocks, reducing land take, and recycling of waste, but not enough to reach targets to halt biodiversity loss. The climate change mitigation target has been met but was not sufficiently ambitious to have a large impact and has now been superseded by more stringent targets. Waste generation and animal product consumption continue to increase.

Table F-1 Assessed EU environmental policy objectives

Environmental good	Objectives set in EU environmental and sectoral policies	Relevant policies
Clean air	<p>Attain emission ceilings and reduction commitments for the main air pollutants SO_x , NO_x , NMVOCs, NH₃ and primary PM_{2.5} (for the latter, reduction commitments only) by 2020 and 2030</p> <p>Cut the health impacts of air pollution (in terms of premature mortality due to PM and O₃) by 52 % compared with 2005 by 2030</p> <p>Attain limit values for SO₂, NO₂, C₆H₆, CO, Pb, PM₁₀ and PM_{2.5}; achieve target values for PM_{2.5}, O₃, As, Cd, Ni and BaP; by 2013, 2015, 2020</p> <p>reduce the ecosystem area exceeding eutrophication limits to 35 % by 2030</p>	<p>Clean air package to 2020: National Emission Ceilings Directive</p> <p>Communication on clean air programme for Europe</p> <p>Ambient Air Quality Directives (EU, 2004, 2008)</p>
Climate	<p>20 % cut in GHG emissions (from 1990 levels) 20 % of EU energy from renewable sources 20 % improvement in energy efficiency by 2020</p> <p>Decisive progress in adapting to the impact of climate change by 2020</p>	<p>EU 2020 Climate and Energy Package</p> <p>EU long-term greenhouse gas emission reduction Strategy</p> <p>7th EAP</p>
Water	<p>Achieve Good Status for all water bodies by 2015 (Good Potential for heavily modified bodies)</p> <p>Assess and manage flood risks, aiming to reduce the adverse consequences for human health, environment, and cultural heritage by 2015</p> <p>Water abstraction should stay below 20 % of available renewable water resources by 2020</p>	<p>Water Framework Directive</p> <p>Floods Directive</p> <p>Roadmap to a resource efficient Europe (EC, 2011)</p>

Environmental good	Objectives set in EU environmental and sectoral policies	Relevant policies
Marine environment and fish stocks	Achieve Good Environmental Status of marine areas by 2020 Achieve maximum sustainable yields for European commercially exploited fish and shellfish stocks by 2015-2020 Populations of all commercially exploited fish and shellfish are within safe biological limits by 2020	Marine Strategy Framework Directive and Maritime Spatial Planning Directive Common Fisheries Policy 2014 and implementation (e.g. multiannual plans and EMFF); 7 th EAP
Waste management	Reduce landfill of biodegradable municipal waste to 75 %/50 %/35 % of the same waste generated in 1995 by 2006/2009/2013 50 %/55 %/60 %/65 % of municipal waste is prepared for reuse or recycled (differing calculation method for the 50 % target) by 2020/2025/2030/2035	Landfill Directive Waste Framework Directive EU Action Plan for Circular Economy (COM/2015/0614 final) & revised legislative framework on waste ¹²¹⁶
Circular economy and sustainable use of resources	Strive towards an absolute decoupling of economic growth and environmental degradation by 2020 Overall environmental impact of all major sectors of the Union economy is significantly reduced, resource efficiency has increased by 2020	7 th EAP Circular Economy Action Plan (2015)
Sustainable production and consumption	Achieve the sustainable management and efficient use of natural resources by 2030 Waste generation to decline absolutely and per capita by 2020 Structural changes in production, technology and innovation, as well as consumption patterns and lifestyles have reduced the overall environmental impact of production and consumption by 2020	7 th EAP
Soil protection	Prevent further degradation of soil, preserve its functions and restore degraded soil Reduce soil erosion, increase soil organic matter, and promote remedial work on contaminated sites	Soil Thematic Strategy Roadmap to a resource efficient Europe
Sustainable land use and management	Achieve no net land take by 2050 (corresponding to global target of 'land degradation neutral world' by 2050) Reduce the EU's ecological footprint Ensure that emissions do not exceed removals in the LULUCF sector (no-debit rule) by 2025/2030	7 th EAP LULUCF Regulation ¹²¹⁷

The progress -or lack of progress- on the EU environmental objectives is described in Box F-1. It is important to note that progress does not necessarily prove that the EU legislation was the principal driver of the result.

Box F-1 Summary of the state of achievement of the EU environmental policy objectives in 2020.

State of achievement of the EU environmental policy objectives in 2020. Sources: SOER 2020 (EEA, 2019), Environmental Indicators 2018 (EEA, 2018) and EU 6th report to the CBD (EU, 2019)

¹²¹⁶ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L:2018:150:TOC>

¹²¹⁷ https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2018.156.01.0001.01.ENG

Clean air - Exposure of ecosystems to eutrophication is declining but not on track¹²¹⁸. Sulphur oxides from energy production and distribution decreased by 77 % (2000-2017), while ammonia emissions from agriculture decreased much less significantly and have even increased by about 3 % from 2013 to 2017. Reductions were comparably less for fine particulate matter, the pollutant that poses the greatest threat to human health.

Climate - Total greenhouse gas (GHG) emissions excluding land use, land use change and forestry (LULUCF) and including international aviation declined by 22 % from 1990 to 2017. There has been an increase in the number of countries that have adopted a national adaptation Strategy and/or plan. However, information on the 'decisive progress' of these policies towards reducing vulnerability and enhancing resilience to climate change is limited.

Water - Only 40 % of Europe's surface water bodies achieve good ecological status and wetlands are widely degraded, as are 80-90 % of floodplains. While the area in the EU that was affected by water stress decreased, hotspots for water stress conditions are likely to remain given continued pressures such as climate change, increasing population, urbanization and agriculture. Nitrogen losses to the environment have not declined since 2010 and are still at an unacceptably high level¹²¹⁹.

Marine environment - Good Environmental Status of European marine waters by 2020 is not being achieved in relation to key pressures such as contaminants, eutrophication, invasive alien species and marine litter. More than 40% of coastal waters are still affected by diffuse water pollution from agriculture. 65% of Habitats Directive Annex I seabed habitats are in unfavourable conservation status.

Fish stocks - in the ICES area (the North-East Atlantic Ocean and the Baltic Sea), the proportion of overexploited stocks in 2016 has decreased to close to 40% of the 65 to 71 stocks that are fully assessed. But in the Mediterranean and Black Sea, 78% of assessed stocks are still fished at biologically unsustainable levels. A third of stocks still have no assessment of maximum sustainable yield. It is unlikely that the objective of healthy commercial fish and shellfish populations will be met in Europe's seas by 2020.

Waste management - The EU28 reduced the proportion of waste going to landfill to 39% in 2016¹²²⁰, which is still above the target set for 2013. 6 Member States have met the landfill target for 2030, whilst half still have landfill rates over 50 per cent (Lee *et al.*, 2017). The amount of municipal waste being recycled has been steadily increasing. The outlook for all Member States meeting the 2020 target is mixed. Waste generation increased over the 2010-2016 period, in particular since 2014, and the risk that the 2020 target will be missed has increased, but the progress to 2020 is uncertain due to lack of data.

Circular economy and sustainable use of resources - Some decoupling has been achieved through reduction of the environmental resource use per euro of output between 2000 and 2017. The rate

of increase of resource productivity has slowed down since 2013 and is expected to have increased only at around 1% per year to 2020. Material extraction is dominated by agriculture and forestry (25%) and mining industries (75%).

Sustainable production and consumption - Per capita animal based product consumption is expected to have increased over the 2014-2020 period for most animal product categories and sub-categories. 57% of material input to consumed products currently goes into construction works, food products, other products of agriculture, forestry and fisheries, and electricity, gas and water services.

Soil protection - Not on track to targets - significant soil erosion continues. Progress in the remediation of polluted soils is slow. Soil loss because of sedimentation through erosion is still significant. The effects of soil compaction and historical and current losses of soil organic carbon are becoming increasingly visible under climate change.

¹²¹⁸ EEA indicator: CSI 005/AIR004 'Exposure of terrestrial ecosystems to eutrophication due to air pollution 2000-2020'

¹²¹⁹ Eurostat data set: aei_pr_gnb 'Gross nutrient balance in agricultural land: nitrogen 2000-2015'

¹²²⁰ Eurostat data set [env_wastrt]: total waste treated by EU28 in 2016 = 2,311,650,000 tonnes; waste landfilled by EU28 in 2016 = 896,810,000 tonnes

Sustainable land use and management - Land take and soil sealing continue (although rate of land take has decreased from 922 km²/year in the period 2000-2006 to 440 km²/year in the period 2012-2018). Fertile soils continue to be lost by continued land take.

EQ 11.3 To what extent are the biodiversity targets coherent with and mainstreamed into other EU policies, in particular on agriculture, forestry, fisheries, regional and urban development, infrastructure (in particular transport, energy and environmental infrastructure, ports, and mining), tourism, climate mitigation and adaptation, research and innovation as well as trade and development cooperation?

This question asks whether each of the six targets of the EU Biodiversity Strategy are coherent with and mainstreamed into other EU policies. It requires an examination of:

The objectives and implementation of the key EU policies in relation to their corresponding EU Biodiversity Strategy to 2020 targets and actions, including the respective time periods of the policies;

The extent to which the biodiversity targets were mainstreamed into the implementation of the EU policies at EU and national levels (focusing on the policies relevant to the 2014 to 2020 funding period) to avoid negative impacts and ensure synergies.

The policy areas and sectors are divided between the three sectors directly targeted by the Strategy and that are directly dependent on natural capital for their existence - agriculture, forestry and fisheries - and the other sectors and policy areas that have the potential to have both positive (synergistic) effects and negative (damaging and conflictual) effects, depending on the degree to which biodiversity safeguards or proofing tools are integrated and effective and co-benefits are emphasised. The following EU policies were covered in the assessment in relation to their corresponding EU Biodiversity Strategy 2020 targets:

Table F-2 List of policy areas, policies and relationship to the Biodiversity Strategy to 2020

EU policy area	EU policies	Date of policy document(s)	Corresponding EU Biodiversity Strategy 2020 target(s)
Agriculture	Common Agricultural Policy regulations for the 2014-2020 period	2013 and 2014	Target 3A
Forestry	EU Forest Strategy and Multiannual Implementation Plan (& CAP 2014-2020)	2013 and 2015	Target 3B
Fisheries	Common Fisheries Policy, bycatch regulations and seabird action plan, EU Action Plan on the conservation and management of sharks, EMFF	2012, 2013 and 2014	Target 4
Regional and urban development	EU Regional Policy (ESF and ERDF) for the 2014-2020 period	2013	All targets but particularly Target 2
Transport infrastructure and ports	TEN-T priority projects of European interest funded by Cohesion Fund, Connecting Europe Facility, Ports initiative, Ports framework regulation EIA Directive revision in 2014	2013, 2014	Targets 1 and 2
Energy infrastructure	TEN-E, Projects of Common Interest funded by Cohesion Fund EIA Directive revision in 2014	2013, 2014	Targets 1 and 2
Mining	EU Raw Materials Initiative	2008, 2012 & 2014	Targets 1 and 2

EU policy area	EU policies	Date of policy document(s)	Corresponding EU Biodiversity Strategy 2020 target(s)
	Seveso-III Directive (operational tailings disposal facilities, including tailing ponds or dams, containing dangerous substances), EIA Directive revision in 2014		
Tourism	Communication on a political framework for tourism (COM/2010/0352 final)	June 2010	(Target 4 marginally)
Climate mitigation and adaptation	EU Climate package: Effort Sharing Decision, RED EU Climate Change Adaptation Strategy Climate governance regulation	2009, 2013	Targets 2 and 3
Research and innovation	EU Framework Programme for Research and Innovation, Horizon 2020 programmes	2013	All targets
Trade and development cooperation	CITES and EU Wildlife Trade Regulation FLEGT and EU Timber Regulation BEST (Biodiversity and Ecosystem Services in Territories of European Overseas) initiative	2011 & 2012	Target 6

In summary, there has been progress on biodiversity mainstreaming at the level of policy objectives and instruments at the EU level, including better biodiversity proofing of EU funds, but gaps remain at the implementation level and many of the key decisions are made at the Member State level or at regional levels of governance. There continue to be cases of incoherence between EU policy-driven and funded projects for economic sectors, and conservation of biodiversity, ecosystem services, and ecosystem restoration.

The following text gives an assessment of the degree to which the EU Biodiversity Strategy objective and targets have been mainstreamed into the key EU policies.

A) AGRICULTURE, FORESTRY AND FISHERIES

The EU Biodiversity Strategy included targets and actions directly aimed at biodiversity mainstreaming in the EU policies on agriculture, forestry, and fisheries, and the coherence of these policies with the biodiversity objective improved in the legislation for the 2014 to 2020 period compared to the previous period. However, the implementation in practice in some regions prioritised other objectives to the detriment of biodiversity objectives, and measures were not always being used or funded according to their potential to support biodiversity and failing to halt biodiversity loss. There was insufficient use of measures to their fullest potential to create synergies for biodiversity and other objectives (including inadequate funding and reach of measures) in relation to the biodiversity declines associated with agriculture. All three sectors have significant pressures on biodiversity and the biodiversity indicators associated with all three sectors are still declining, but they have a key role to play in moving towards sustainable use that is compatible with biodiversity conservation.

Agriculture: *The CAP in 2014 to 2020 was coherent with the EU Biodiversity Strategy 2020 at the level of policy objectives and instruments, with evidence that biodiversity has been **mainstreamed to a certain extent in the policy instruments addressed by the Strategy**¹²²¹. Rural Development was the most important source of funding for agricultural management in the Natura 2000 network in the 2014 to 2020 period. The only clear issue of incoherence that was found for achieving the CAP's biodiversity*

¹²²¹ Alliance Environnement (2019) *Evaluation of the impact of the CAP on habitats, landscapes, biodiversity*, Brussels: Alliance Environnement (IIEP and Oréade-Brèche).

objectives was relating to certain exemptions, for example the exemption of permanent crops from the EFA greening obligations and the exemption of farmers receiving the small farmers payment from complying with the greening measures and from cross-compliance requirements¹²²². However, the implementation in practice in some regions prioritised other objectives to the detriment of biodiversity objectives, and measures were not always being used or funded according to their potential to support biodiversity and failing to halt biodiversity loss. For example, in some cases, funding was transferred from measures with high potential benefit for biodiversity to measures with less benefit (such as ANC) part way through the period or funding was provided for activities that failed to adequately address biodiversity impacts (e.g. some cases of funding for afforestation and irrigation). The CAP regulatory framework in 2014 included stronger safeguards to avoid funding for afforestation on semi-natural habitats¹²²³ and irrigation funding that increased pressures on water bodies not in good status¹²²⁴, which improved coherence compared to the previous funding period.

Reasons for failures to maximise synergies included:

Member States' implementation choices and inadequate reach of most effective options: The evaluation of the CAP for its impacts on biodiversity concluded that although the CAP is theoretically coherent with the EU Biodiversity Strategy to 2020, it could be delivering greater synergies in practice, in particular for the implementation of the Birds and Habitats Directives and Natura 2000 network, had Member States made different implementation choices and had they always used the most effective and efficient measures¹²²⁵;

The evaluation of the **greening measures** considered that coherence of greening with the EU Biodiversity Strategy was mixed¹²²⁶, and the greening requirements resulted on fairly limited changes in farm management practices and land use, though it halted the declining trend in fallow in MS where it was an ecological focus area (EFA) option, a practice with biodiversity benefits¹²²⁷. Incoherence occurred in those Member States that applied a very restrictive definition of environmentally sensitive grassland¹²²⁸, thereby failing to use the additional policy protection against conversion of such grasslands to arable¹²²⁹. Farmers within Natura 2000 sites need only apply the greening measures where they are compatible with the objectives of the nature directives as defined by the site conservation measures, but if these are not defined or not clear to farmers, the farmers

¹²²² Alliance Environnement (2019) as above.

¹²²³ Delegated Regulation (EU) No 807/2014 specified that species planted must be adapted to the environmental and climatic conditions of the area and comply with minimum environmental requirements including avoiding inappropriate afforestation of sensitive habitats and negative effects on areas of high ecological value.

¹²²⁴ REGULATION (EU) No 1305/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 December 2013 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) and repealing Council Regulation (EC) No 1698/2005 specified requirements for water use efficiency gains in irrigation systems extracting water from water bodies under stress related to water quantity.

¹²²⁵ Alliance Environnement (2019) *Evaluation of the impact of the CAP on habitats, landscapes, biodiversity*, Brussels: Alliance Environnement (IEEP and Oréade-Brèche).

¹²²⁶ Alliance Environnement and Thünen-Institut (2017) *Evaluation study of the payment for agricultural practices beneficial for the climate and the environment*, Brussels: Alliance Environnement.

¹²²⁷ Alliance Environnement and Thünen-Institut (2017) *Evaluation study of the payment for agricultural practices beneficial for the climate and the environment*, Brussels: Alliance Environnement.

¹²²⁸ European Commission (2018) *EXECUTIVE SUMMARY OF THE EVALUATION of the Regulation (EU) No 1307/2013 of the European Parliament and of the Council of 17 December 2013 establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy and repealing Council Regulation (EC) No 637/2008 and Council Regulation (EC) No 73/2009 concerning the greening in direct payments*, Brussels: European Commission SWD (2018) 479 final)

¹²²⁹ In 2018, ESPG accounted for less than 5% of all permanent grassland within Natura 2000 in Be (Wa), DK, EE, IE, LV, LU, AT, PT, FI and UK (NI).

may have failed to apply the options with greater benefits for biodiversity on arable farmland¹²³⁰. The crop diversification exemption for maize monoculture in France was not coherent with species protection of *Cricetus cricetus*, which continues to decline partly because of maize monocultures¹²³¹;

Failure of CAP planning process to adequately identify the needs for biodiversity: The mapping of CAP implementation by Member States in 2015 showed that very few of the 10 case study RDPs provided a rigorous and quantified analysis of the needs relating to the Natura 2000 network in relation to agriculture and forestry, whereas the Prioritized Action Frameworks (PAFs) for Natura 2000 specified a much more detailed set of needs to be addressed¹²³²;

Failure to allocate sufficient funding: A comparison of PAFs and RDPs in 16 case study countries or regions concluded that a rough estimate of total resources available to Natura 2000 and biodiversity conservation based on information available in some of the programmes indicates that in general the resources were not sufficient to cover the financial needs identified in the Prioritised Action Frameworks for Natura 2000 for 2014-2020¹²³³. However, it also concluded that it is difficult to know exactly the potential contribution of the programmes to Natura 2000 or biodiversity conservation, as funding allocations are usually defined at measure level in the RDPs, while Natura 2000 is often covered by sub-measures or specific operations¹²³⁴.

Examples of positive coherence with the CAP:

- Some targeted **agri-environment** measures (AECM) have significant demonstrated benefits for biodiversity¹²³⁵ (see effectiveness). CAP support for agricultural genetic diversity was key to the maintenance of rare breeds and crop varieties, as shown by evidence from an EU-wide analysis¹²³⁶ and stakeholder interviews¹²³⁷. CAP support through a combination of measures is maintaining some areas of high nature value farmland in the EU, though in other places incentives are insufficient to stop intensification or are failing to support resulting in land abandonment;
- The introduction of the melliferous fallow **EFA** option in 2018 was coherent with the EU Pollinators Initiative aim to tackle the decline of pollinator habitat: it was taken up mostly by arable farmers in France and Germany where it was most widely promoted¹²³⁸; the ban on

¹²³⁰ Alliance Environnement and Thünen-Institut (2017) *Evaluation study of the payment for agricultural practices beneficial for the climate and the environment*, Brussels: Alliance Environnement.

¹²³¹ Alliance Environnement and Thünen-Institut (2017) *Evaluation study of the payment for agricultural practices beneficial for the climate and the environment*, Brussels: Alliance Environnement.

¹²³² Ecorys, IEEP and WUR (2016) *Mapping and analysis of the implementation of the CAP*, Brussels: Final Report to the Directorate-General for Agriculture and Rural Development.

¹²³³ N2K Group (2016) *Integration of Natura 2000 and biodiversity into EU funding (EAFRD, ERDF, CF, ESF): Analysis of a selection of programmes approved for 2014-2020*, Brussels: The N2K Group.

¹²³⁴ N2K Group (2016) *Integration of Natura 2000 and biodiversity into EU funding (EAFRD, ERDF, CF, ESF): Analysis of a selection of programmes approved for 2014-2020*, Brussels: The N2K Group.

¹²³⁵ Alliance Environnement (2019) *Evaluation of the impact of the CAP on habitats, landscapes, biodiversity*, Brussels: Alliance Environnement (IEEP and Oréade-Brèche)

¹²³⁶ Gicquel, E, Boettcher, P, Besbes, B, Furre, S, Fernández, J, Danchin-Burge, C, Berger, B, Baumung, R, Feijóo, J R J and Leroy, G (2020) Impact of conservation measures on demography and genetic variability of livestock breeds. Animal No 14 (4), 670-680.

¹²³⁷ Interview with EU level organisation representing small holder and HNV farmers

¹²³⁸ Alliance Environnement (2019) *Evaluation of the impact of the CAP on habitats, landscapes, biodiversity*, Brussels: Alliance Environnement (IEEP and Oréade-Brèche)

pesticide use on EFAs increased the biodiversity value of in-field EFA options (particularly the nitrogen-fixing crops).

Forestry: *CAP forest measures are generally coherent but with very limited scope:* The **CAP forest measures** were evaluated as generally coherent with the EU biodiversity policies, but with a risk of incoherence due to Member State implementation of CAP Pillar 1 rules to exclude areas of traditional agroforestry from CAP payments¹²³⁹. More broadly, the impact of the CAP forest measures on mainstreaming of sustainable forest management planning for biodiversity is limited by the fact that so few Member States have programmed the measures for biodiversity objectives.

Fisheries: In support of reducing the adverse impact of fishing on non-target species and ecosystems, the 2014 reformed CFP aimed – through the gradual introduction of a landing obligation by 2019 – to eliminate discarding, subject to catch limits implemented at the fishery level through multiannual plans or specific discard plans. This relies on strengthened monitoring at Member State level to lead to practices that are cleaner, more selective and which avoid unwanted by-catch, and to improve by-catch data. The fitness check of the nature directives in 2015 concluded that the current CFP legal framework is considered coherent with the Directives, addressing the inconsistencies in the previous CFP that acted as a barrier for Member States to adopt conservation measures and restrict certain fishing practices.¹²⁴⁰ However, it also stated that the establishment of conservation management measures in marine Natura 2000 sites remains challenging, given the inconsistent approaches between Member States and conflicts of interest. Little progress has been made to restrict or regulate fishing in protected areas in line with conservation objectives for sensitive species and habitats, but there are agreements in Baltic and North Sea MPAs.¹²⁴¹

The action plan on incidental seabird catch (2012) and then the 2019 Technical Measures Regulation¹²⁴² sharpened the measures to avoid by-catch of sensitive and protected species including sharks and rays, cetaceans, turtles, seabirds. The Data Collection Framework (DCF) requires collecting data on bycatches of protected species in support of assessing impact of fishing on marine ecosystems. The Action Plan on Sharks (2009) was strengthened by international protection measures.

The MSFD is considered to have established an integrated approach to marine conservation, and has addressed some pressures that were previously ignored, such as marine noise¹²⁴³, although the overall objective has not been met (see effectiveness). The MPA network has grown significantly since 2010 but still suffers from a lack of representativity of certain marine habitats and species, and because the marine environment and biodiversity is still poorly mapped it is still not possible to say if the most important spots are the ones protected.¹²⁴⁴ There is also a lack of connectivity between sites, with small MPAs containing isolated areas of habitat and species populations influenced by external pressures.

¹²³⁹ Alliance Environnement and EFI (2017) *Evaluation study of the forestry measures under Rural Development*, Brussels: Alliance Environnement and European Forest Institute.

¹²⁴⁰ Milieu, IEEP and ICF (2016) *Evaluation Study to support the Fitness Check of the Birds and Habitats Directives*. Brussels: Milieu Ltd, Institute for European Environmental Policy and the ICF International.

¹²⁴¹ N2K Group (2018) *Review of fisheries management measures in Natura 2000 sites: Report for European Commission by N2K Group*; Perry et al., (2020) *Unmanaged = Unprotected: Europe's marine paper parks*, Brussels: Oceana52 pp.)

¹²⁴² Regulation 2019/1241 sets measures to increase the use of selective fishing gear, restrict the use of unselective gear such as drift nets and bottom trawlers, prohibit the catch of certain species and fishing in certain sensitive habitats, and enable the implementation of mitigation measures to reduce or prevent bycatch of protected species.

¹²⁴³ EC COM (2020) 259 final, *On the implementation of the Marine Strategy Framework Directive (Directive 2008/56/EC)*

¹²⁴⁴ EC COM (2020) 259 final, *On the implementation of the Marine Strategy Framework Directive (Directive 2008/56/EC)*

EU agreements with neighbouring countries in the Regional Fisheries Management Organisations (RFMOs) have been important for increasing the coherence of fisheries management in shared seas, notably the Mediterranean. The proposals agreed by the RFMOs have become part of EU legislation and apply to the neighbouring countries through the regional seas conventions.

ECONOMIC DEVELOPMENT SECTORS - TRANSPORT, ENERGY, MINING, TOURISM - AND EU FUNDING FOR REGIONAL AND URBAN DEVELOPMENT

In general, the EU Biodiversity Strategy did not include targets and actions directly aimed these sectors but did programme actions to improve Natura 2000 protection and governance in relation to these sectors, such as guidance documents, training for judges and public prosecutors, green infrastructure planning, improved methods for assessing impact of EU funded projects, plans and programmes on biodiversity, and the no net loss initiative. There was also progress in strengthening the biodiversity impact assessment policy framework during the period, though it is not clear how much influence, if any, the EU Biodiversity Strategy had on this (see Box below). As some of these sectors along with regional and urban development more broadly receive significant EU funding, the biodiversity proofing of EU funding was also an important action.

Box F-2 Progress in strengthening coherence of biodiversity impact assessment during 2010-2020 period

Appropriate assessment of Natura 2000: The fitness check of the Nature Directives in 2016 concluded that implementation of appropriate assessment has to an increasing extent resulted in protection of Natura 2000 sites and compensation for unavoidable residual impacts on EU protected habitats and species. However, it also points to ongoing problems with appropriate assessment procedures and compensatory measures¹²⁴⁵.

Environmental impact assessment EIA: The EIA Directive revision in 2014 (Directive 2014/52/EU) specified that EIAs must include consideration of impacts on biodiversity (with particular attention to species and habitats protected under 92/43/EEC and 2009/147/EC) (Article 3b). With regard to the screening process, the revised EIA Directive provides that Member States may set thresholds or criteria to determine when projects need not undergo either a screening determination or an EIA, and/or thresholds or criteria to determine when projects shall in any case be made subject to an EIA without the need for a determination; sets out in Annex IIA a detailed list of the information that a developer will be required to submit in support of any request for a screening determination; and amends Article 4 with regard to screening procedures. Member States must apply the amended EIA rules as of May 16th, 2017. basis. The Commission published guidance on integrating biodiversity considerations into EIA in 2013¹²⁴⁶.

Strategic Environmental Assessment SEA: EIA is complemented by the requirements of the Strategic Environmental Assessment Directive. An SEA has the potential to overcome many of the limitations of project-based EIA by providing opportunities for conservation and sustainable use of biodiversity to be considered as a fundamental part of strategic decision-making, rather than as a single specialist topic that needs considering on a more reactive basis. The Commission published guidance on integrating biodiversity considerations into SEA in 2013¹²⁴⁷. The fitness check of the SEA directive, published in 2019, concluded that SEA appears to be effective with respect to the conservation of biodiversity, but is less so regarding ecosystem services and natural capital, in part due to limited methods, tools, and data, as well as the lack of a legal requirement.¹²⁴⁸

¹²⁴⁵ Milieu, IEEP and ICF (2016) Evaluation Study to support the Fitness Check of the Birds and Habitats Directives. Brussels: Milieu Ltd, Institute for European Environmental Policy and the ICF International.

¹²⁴⁶ European Commission (2013) Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment. Brussels: European Commission.

¹²⁴⁷ McGuinn et al., (2013) Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment. Brussels: Report to the European Commission DG Environment.

¹²⁴⁸ European Commission (2019) *EVALUATION of the Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment*, Brussels: European Commission SWD (2019) 414 final)

Transport infrastructure and ports: The Commission communication on integrating biodiversity and nature conservation into port development¹²⁴⁹ in 2011 was accompanied by a guidance document on Natura 2000 and port management¹²⁵⁰, recognising that port-related activities that involve dredging were a frequent cause of conflict with Natura 2000¹²⁵¹. The guidance promotes the approaches known as Building with Nature or Working with Nature as pioneered by Dutch ports and water managers¹²⁵². DG Environment also produced guidance on the implementation of the Birds and Habitats Directives in estuaries and coastal zones with particular attention to port development and dredging¹²⁵³, and a guidance on Natura 2000 and inland waterway transport¹²⁵⁴ (European Commission, 2012). Cases of good practice with ports development and nature protection working together were publicised by DG Environment¹²⁵⁵; however, there is no mention of the guidance on the DG MOVE webpage on ports policy¹²⁵⁶. The Commission update of European Port Policy in 2013¹²⁵⁷ committed the Commission to propose principles for environmental charging to encourage a more consistent application of environmentally differentiated port infrastructure charges, which was made possible by the 2017 Framework Regulation on port financing¹²⁵⁸. There is a policy option that differentiated port charges could refer to requirements regarding navigation restrictions in sensitive areas including Natura 2000 and habitats of sensitive species, as for example the Dutch Green Award for oil tankers, chemical tankers, dry bulk carriers from 20.000 DWT up, and for LNG and container carriers and inland navigation vessels which follow certain standards¹²⁵⁹.

Energy & environmental infrastructure: The EU Biodiversity Strategy did not define a specific action to address energy infrastructure, but as part of Target 1, the Commission produced guidance on wind energy developments and Natura 2000¹²⁶⁰. Collision with wind turbines is an increasing cause of bird and bat mortality¹²⁶¹. Commission guidance on energy transmission infrastructure and hydropower¹²⁶² were published in 2018, so came too late to significantly influence energy policy during the decade. The TEN-

¹²⁴⁹ Commission communication on integrating biodiversity and nature conservation into port development (SEC(2011) 319 final)

¹²⁵⁰ European Commission (2011) *Guidance on the implementation of the Birds and Habitats Directives in estuaries and coastal zones with particular attention to port development and dredging*, Brussels: European Commission Guidance Document)

¹²⁵¹ Vikolainen et al., (2014) 'A shift toward building with nature in the dredging and port development industries: managerial implications for projects in or near Natura 2000 areas', *Environmental Management*, 54(1), pp. 3-13.

¹²⁵² Vikolainen et al., (2014) 'A shift toward building with nature in the dredging and port development industries: managerial implications for projects in or near Natura 2000 areas', *Environmental Management*, 54(1), pp. 3-13.

¹²⁵³ European Commission (2011) *Guidance on the implementation of the Birds and Habitats Directives in estuaries and coastal zones with particular attention to port development and dredging*, Brussels: European Commission Guidance Document)

¹²⁵⁴ European Commission (2012) *Guidance document on inland waterway transport and Natura 2000*, Luxembourg: European Commission Sustainable inland waterway development and management in the context of the EU Birds and Habitats Directives).

¹²⁵⁵ Milieu, IEEP and ICF (2016) Evaluation Study to support the Fitness Check of the Birds and Habitats Directives. Brussels: Milieu Ltd, Institute for European Environmental Policy and the ICF International.

¹²⁵⁶ https://ec.europa.eu/transport/modes/maritime/ports/ports_en

¹²⁵⁷ Commission communication 'Ports: An engine for growth', setting out eight EU actions to 'further unlock the potential of ports' (COM/2013/0295 final)

¹²⁵⁸ 2017 Framework Regulation on port financing (Regulation (EU) 2017/352) recognises that 'port infrastructure charges may vary in accordance with the port's economic strategy and the port's spatial planning policy,' 'in order to promote a ... high environmental performance, energy efficiency or carbon efficiency of transport operations'.

¹²⁵⁹ COGEA (2017) *Study on differentiated port infrastructure charges to promote environmentally friendly maritime transport activities and sustainable transportation*, Brussels: COGEA study for European Commission DG MOVE/CONTRACT MOVE/B3/2014-589/SI2.697889)

¹²⁶⁰ European Commission (2011) *Wind energy developments and Natura 2000*, Luxembourg: Publications Office of the European Union.

¹²⁶¹ Thaxter, C B, Buchanan, G M, Carr, J, Butchart, S H M, Newbold, T, Green, R E, Tobias, J A, Foden, W B, O'Brien, S and Pearce-Higgins, J W (2017) Bird and bat species' global vulnerability to collision mortality at wind farms revealed through a trait-based assessment. *Proceedings of the Royal Society B: Biological Sciences* No 284 (1862).

¹²⁶² European Commission (2018) *Guidance on the requirements for hydropower in relation to Natura 2000*, Brussels: European Commission.

E regulation (Regulation (EU) No 347/2013) established an EU-wide framework for the planning and implementation of energy infrastructure in the EU, including nine strategic infrastructure priority corridors in the domains of electricity, gas, and oil. According to the TEN-E Regulation¹²⁶³, Projects of Common Interest (PCIs) needed to implement the priority corridors, should be considered projects of public interest according to Article 6(4) of the Habitats Directive, i.e., that the projects could be authorized despite them significantly affecting the integrity of a Natura 2000 site, provided they meet all the conditions of Article 6(3). An NGO assessment in 2013 highlighted five PCIs that were highly damaging to Natura 2000 and biodiversity¹²⁶⁴. Commission guidance supporting Member States to streamline EIA and SEA was published in 2013¹²⁶⁵, with the aim that the PCIs are transparently and coherently assessed for environmental impacts. In the TEN-E evaluation stakeholder consultation, several stakeholders pointed to incoherence between TEN-E and the nature directives and the EIA directive requirements for impact assessment¹²⁶⁶, as also pointed out by an NGO assessment¹²⁶⁷. For example, many infrastructure plans had no SEA and no public participation process, and the rigid timeframe for the permitting procedure defined in the regulation does not allow for a proper environmental assessment process and public scrutiny. Although one project was dropped, others are still being implemented, though legal challenges and other complications are escalating costs and timelines¹²⁶⁸.

Mining: The EU Biodiversity Strategy did not define a specific action to address mining, but as part of Target 1, the Commission published guidance on non-energy mineral extraction and Natura 2000 in 2010¹²⁶⁹ (European Commission, 2010). The Seveso-III Directive in 2012 (Directive 2012/18/EU) specified standards for operational tailings disposal facilities, including tailing ponds or dams, containing dangerous substances, designed to avoid disasters such as the 1998 Aznalcollar tailings dam break in the Los Frailes mine upstream from the Donana National Park and Natura 2000 site in Spain¹²⁷⁰. A report in 2018 highlighted existing practices to recover critical and other raw materials from extractive waste and landfill¹²⁷¹, but EU policies on critical raw materials have not yet provided a noticeable incentive to reuse and recycle minerals to reduce the amount of mining and its impacts on biodiversity.

Tourism: The EU Biodiversity Strategy did not propose specific actions to address the pressures that tourism exerts on biodiversity, mentioning only the option to use the MSFD to promote eco-tourism, and the EU Business and Biodiversity platform. The tourism sector was included in the EU Business and Biodiversity platform award scheme. The EU tourism political framework published in 2010 failed to refer to the 2050 target and the previous biodiversity action plan and mentioned biodiversity in only two sentences which recognise the need for tourism to consider constraints linked to pressure on biodiversity and refer to protection of natural and cultural heritage through sustainable management of

¹²⁶³ TEN-E Regulation Article 7(8)

¹²⁶⁴ RSPB and EEB (2013) *Projects of common interest? Case studies of environmentally damaging and controversial EU energy infrastructure 'projects of common interest' (PCIs)*, Brussels: RSPB and European Environmental Bureau.

¹²⁶⁵ European Commission (2013) *Streamlining environmental assessment procedures for energy infrastructure Projects of Common Interest (PCIs)*, Brussels: European Commission Guidance document).

¹²⁶⁶ Trinomics (2018) *Evaluation of the TEN-E Regulation and assessing the impacts of alternative policy scenarios*, Netherlands: Trinomics study for Directorate-General for Energy.

¹²⁶⁷ Justice and Environment (2017) *Energy Infrastructure Projects of Common Interest (PCI): national implementation of the EU permitting rules*: Justice and Environment.

¹²⁶⁸ E.g. <https://www.irishtimes.com/news/environment/legal-challenge-to-shannon-lng-project-has-eu-implications-1.4187146>

¹²⁶⁹ European Commission (2010) *Non-energy mineral extraction and Natura 2000*, Luxembourg: Publications Office of the European Union (EC Guidance on non-energy extractive activities in accordance with Natura 2000 requirements).

¹²⁷⁰ which released 4-5 million cubic metres of mine tailings containing dangerous levels of several heavy metals that were only stopped by the diversion of a water course that was previously supplying the National Park.

¹²⁷¹ JRC (2019) 'Recovery of critical and other raw materials from mining waste and landfills - state of play on existing practices'. JRC Science for Policy Report.

destinations (NECSTouR, EDEN indicator system). In the public consultation to collect proposals for a revised framework in 2013, some stakeholders expressed the need to integrate biodiversity into tourism policies, but *'others do not express high concerns about the consequences of tourism activity on .. environmental .. threats.'*¹²⁷² In the end, no revised framework was published, therefore there is currently no EU policy directly addressing the impacts of tourism on biodiversity.

Research and innovation: The Horizon 2020 programme launched in 2014 included several areas of support for societal challenges directly relevant to biodiversity: food security, sustainable agriculture, marine and maritime research and the bioeconomy; climate action, environment, resource efficiency and raw materials. Calls with a specific biodiversity component have been issued on nature-based solutions and green infrastructure for cities, on wild pollinators, biodiversity on farmland and in the value chain, agro-ecological research, inter-relations between climate change, biodiversity and ecosystem services, and on ecosystem approach to fisheries management.

Trade: Since 2009, the biodiversity impacts of the EU's Free Trade Agreements must be assessed in Sustainability Impact Assessments (SIAs). Following the mid-term review of the Strategy, the Council called on the Commission in December 2015 to increase its efforts in implementing the trade-related aspects of the Biodiversity Strategy, to increase the positive contribution of EU trade policy to biodiversity conservation¹²⁷³. A study reviewed SIAs completed between 1999 and 2017 and concluded that biodiversity is not consistently considered with respect to investment, and neither are the impacts on ecosystem functioning and the supply of ecosystem services¹²⁷⁴.

Development cooperation: The key development cooperation instruments for biodiversity were the BEST preparatory action¹²⁷⁵ and the BEST 2.0 Programme¹²⁷⁶. Following up the Message from Guadeloupe and in line with the ENV Council Conclusions adopted on 16/12/2015, the Commission worked on options for BEST to evolve into a sustainable partnership and to establish a durable and participative support mechanism for biodiversity action in the EU's ORs and OCTs. While the EC has stated its commitment to screen development cooperation action to avoid adverse impacts on biodiversity, no evidence of the effectiveness of this was found.

Climate mitigation and adaptation: The EU Biodiversity Strategy to 2020 Target 2 for ecosystem maintenance and restoration was expected to contribute to mitigating and adapting to climate change, for example through restoration of carbon rich habitats and through green infrastructure in cities reducing the heat island effect. The Strategy states that *'Ecosystem-based approaches to climate change mitigation and adaptation can offer cost-effective alternatives to technological solutions, while delivering multiple benefits beyond biodiversity conservation'*. The EU climate package of legislation was already in place before the Strategy was published and does not specify any requirements for specific actions or approaches (such as ecosystem-based approaches or restoration of carbon-rich ecosystems). The Effort Sharing Decision (2009) included non-CO2 emissions from agriculture, but did not include emissions from land use, land use change and forestry (LULUCF), so it had limited potential to influence the sectors with the largest effect on ecosystems and land use,

¹²⁷² See https://ec.europa.eu/growth/content/give-your-opinion-tourism-policy_en

¹²⁷³ Council of the European Union (2015) *The Mid-Term Review of the EU Biodiversity Strategy to 2020 - Council conclusions (16 December 2015)*, Brussels: Council of the European Union15389/15).

¹²⁷⁴ Kuik et al., (2018) *Trade Liberalisation and Biodiversity Scoping Study on Methodologies and Indicators to Assess the Impact of Trade Liberalisation on Biodiversity (Ecosystems and Ecosystem Services)*, Brussels: IVM & IEEP Final Report for European Commission ENV.F.1/FRA/2014/0063).

¹²⁷⁵ <http://ec.europa.eu/best>

¹²⁷⁶ <https://portals.iucn.org/best/>

although theoretically Member States were free to choose to prioritise action with biodiversity benefits. This was changed with the LULUCF regulation in 2018; however, there is no evidence this has resulted in biodiversity benefits¹²⁷⁷. The renewable energy target (2009) stimulated bioenergy, which increased the areas of feedstock crops (particularly maize and oilseed rape) and use of wood for bioenergy¹²⁷⁸. This was partly corrected by the revised REDII regulation in 2018. Wind power and hydropower installations continue to cause conflicts with biodiversity conservation^{1279 1280}. Policy coherence was improved under the governance system introduced in 2019¹²⁸¹, as Member States are required to adopt integrated national energy and climate plans (NECPs) for the period 2021-2030 which make explicit the links between energy and climate strategies and biodiversity preservation, *'identifying concrete measures, assessing their impacts and establishing corrective actions when appropriate'*¹²⁸².

The EU Climate Change Adaptation Strategy published in 2013 set a goal to climate proof key vulnerable sectors (agriculture, fisheries, and cohesion policy), and defined actions to ensure that Europe's infrastructure is made more resilient. The support study to the evaluation of the strategy (Ricardo *et al.*, 2018) recognised the potential contribution of adaptation investments to implementation of nature legislation as one of the policy areas where the potential synergies (and in some cases, conflicts) may have been under-emphasised, and where further analysis could be beneficial; an issue raised by stakeholders¹²⁸³. It recommended that the assessment of adaptation options should take more account of the multifunctionality of ecosystem-based adaptation (e.g. conservational agricultural practices, green infrastructure, nature protection), providing multiple benefits including for biodiversity, ecosystems, climate change adaptation, climate change mitigation, air and soil quality and societal well-being. This would allow nature-based adaptation solutions to compete in the short-term with other, more conventional or 'grey' infrastructure options.

EQ 11.4 To what extent is the Strategy aligned with the EU's international commitments under the Convention on Biological Diversity (Aichi targets), the Sustainable Development Goals, and the United Nations Framework on Climate Change?

Aichi targets: The EU Biodiversity Strategy was adopted following agreement of the 2020 Aichi Targets and is therefore generally considered to be in line with the global commitments, with some exceptions. While the EU Strategy does not have its targets explicitly organised as corresponding to the 20 Aichi Targets, the Aichi Targets elements - as relevant in the EU context and reflecting EU's competence vis-à-vis actions by Member States - are integrated across the different 6 EU targets. There are, however, some differences in terms of some target-specific objectives, most notably with the EU Strategy not specifying quantified area target on protected areas vis-à-vis the 17% and 19% objective of Aichi Target 11 for terrestrial and marine area, respectively. The table below maps the Aichi targets against the EU 2020 biodiversity Strategy targets and actions.

¹²⁷⁷ <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12247-Commission-Delegated-Regulation-amending-Annex-IV-to-the-LULUCF-Regulation/F552669>

¹²⁷⁸ Bowyer, C, Tucker, G, Underwood, E, Nanni, S, Becerra, G, Pantzar, M, Monteville, M, Riera, A, Kollenda, E, Richter, K, Stanová, V Š and Edwards, L (2020) *Potential impacts of bioenergy developments on habitats and species protected under the Birds and Habitats Directives*. Final report under EC Contract ENV.D.3/SER/2017/0002 Project: "Reviewing and mitigating the impacts of renewable energy developments on habitats and species protected under the Birds and Habitats Directives", Institute for European Environmental Policy, Arcadis, BirdLife International, NIRAS, Stella Consulting, Ecosystems Ltd, Brussels.

¹²⁷⁹ European Commission (2019) *The EU's strategic approach to raptor conservation*. Publications Office of the European Union, Luxembourg.

¹²⁸⁰ Lange, K, Meier, P, Trautwein, C, Schmid, M, Robinson, C T, Weber, C and Brodersen, J (2018) Basin-scale effects of small hydropower on biodiversity dynamics. *Frontiers in Ecology and the Environment* No 16 (7), 397-404.

¹²⁸¹ Regulation (EU) 2018/1999

¹²⁸² COM(2019) 285 final

¹²⁸³ Ricardo, IEEP, Trinomics and Alterra (2018) *Study to support the evaluation of the EU Adaptation Strategy: Study for the European Commission* Ricardo/ED62885 Final Report).

Table F-3 Mapping of Aichi Targets and the Biodiversity Strategy to 2020

Aichi Target	EU 2020 Biodiversity Strategy
1 By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	There is no specific target for awareness. <i>Action 3</i> is to Increase stakeholder awareness and involvement and improve enforcement . This relates to the nature directives rather than biodiversity overall.
2 By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	Though the EU cannot implement the national and local strategies, <i>Target 6 - help avert global biodiversity loss</i> - seeks to influence those processes through indirect measures.
3 By 2020, at the latest, incentives, including subsidies , harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.	The EU can contribute at the organisational level but has barriers at the national level. <i>Target 6, Action 17c</i> makes specific reference to “ reform, phase out and eliminate harmful subsidies at both EU and Member State level ”.
4 By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	<i>Target 4 - ensure the sustainable use of fisheries resources</i> - addresses this in part, recognising that European seas are heavily overfished. The goal was to achieve Maximum Sustainable Yield (MSY) by 2015 and achieve Good Environmental Status by 2020 - as required by the Marine Strategy Framework Directive. The reformed CFP sets the 2020 deadline for achieving FMSY target on a progressive basis. To note, the Western Mediterranean multiannual plan under the CFP moves this deadline to 1 January 2025 at the latest for the stocks and sea basin concerned.
5 By 2020, the rate of loss of all-natural habitats, including forests, is at least halved and where feasible brought close to zero and fragmentation is significantly reduced.	<i>Target 1</i> , under the Birds and Habitats Directives and specifically <i>Action 1</i> - establishment of Natura 2000 Network - directly address this, however the BS makes no reference to ‘by half’ or ‘close to zero’ targets. <i>Action 7 - ensure no net loss of biodiversity and ecosystem services</i> - also contributes to this target. <i>Target 3</i> specifically references the role of agriculture in achieving this target to maintain and enhance biodiversity .
6 By 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably , legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	<i>Target 4 - ensure the sustainable use of fisheries resources</i> - addresses this directly, recognising that European seas are heavily overfished. <i>Actions 13 and 14</i> address the management and elimination of adverse impacts directly. The goal was to achieve Maximum Sustainable Yield (MSY) by 2015 and achieve Good Environmental Status by 2020 - as required by the Marine Strategy Framework Directive. The reformed CFP sets the 2020 deadline for achieving FMSY target on a progressive basis. To note, the Western

Aichi Target	EU 2020 Biodiversity Strategy
	Mediterranean multiannual plan under the CFP moves this deadline to 1 January 2025 at the latest for the stocks and sea basin concerned.
7 By 2020 areas under agriculture, aquaculture and forestry are managed sustainably , ensuring conservation of biodiversity.	Sustainable management of aquaculture specifically is covered by <i>Target 4 - Sustainable use of fisheries resources</i> ; <i>Target 3</i> specifically references the role of agriculture in achieving this target to maintain and enhance biodiversity with the sustainable management of forestry.
8 By 2020, pollution , including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	There are no specific pollution-related targets. <i>Target 2 - maintain and restore ecosystems and their services</i> - and <i>Action 7 - ensure no net loss of biodiversity and ecosystem services</i> - however, do make some reference to improving levels of degradation. The Strategy text highlights the importance of implementing EU environmental legislation for efforts to halt biodiversity loss.
9 By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	<i>Target 5</i> specifically addresses this in its entirety including Action 16 to establish a dedicated legislative instrument on Invasive Alien Species .
10 By 2015, the multiple anthropogenic pressures on coral reefs , and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	<i>Target 2 - maintain and restore ecosystems and their services</i> - and <i>Action 7 - ensure no net loss of biodiversity and ecosystem services</i> - contribute to this; <i>Target 4</i> does not directly address coral reefs however <i>Action 14a</i> does state that the EU will “ preserve vulnerable marine ecosystems ”.
11 By 2020, at least 17 per cent of terrestrial and inland water , and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	This is covered by Target 1 (Fully Implement the Birds and Habitats Directives) and specifically by Action 1 (Complete the establishment of the Natura 2000 network and ensure good Management). There is no specific area target in the EU BS or the Directives themselves. However, specific details are given relating to management and targets for species and habitats’ conservation status. The Directives themselves include provisions relating to representativeness and connectivity.
12 By 2020, the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	There is no specific reference to extinction and the prevention of it. However, <i>Target 1</i> including the Birds and Habitats Directives and Natura 2000 ensures the protection and management of species through species assessments.
13 By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been	<i>Action 10 - conserve Europe’s agricultural genetic diversity</i> - addresses this however simply states to “explore the scope for developing a Strategy” rather than committing to the certain development of such strategies to meet this goal.

Aichi Target	EU 2020 Biodiversity Strategy
developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	
14 By 2020, ecosystems that provide essential services including services related to water , and contribute to health, livelihoods and well-being , are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	There are no targets specifically aimed at vulnerable, neglected, women and/or disadvantaged communities. <i>Target 1</i> and specifically <i>Action 1b</i> does call to integrate species and habitat protection and management requirements into key land and water use policies . <i>Target 2</i> seeks to protect ecosystems and their services.
15. By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	This is directly translated into <i>Target 2: Maintain and Restore Ecosystems and their Services</i> . By 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15% of degraded ecosystems.
16 By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.	<i>Target 6, Action 20 - regulate access to genetic resources and the fair and equitable sharing of benefits arising from their use</i> - addresses this directly.
17 By 2015, each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity Strategy and action plan.	<i>Target 6, Action 18 - mobilise additional resources for global biodiversity conservation</i> - addresses this directly.
18 By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.	There is no specific reference to indigenous and local communities and their use of biodiversity. There is a tentative link to <i>Target 6</i> and <i>Action 17</i> that seeks to influence national level policy. <i>Action 9a</i> provides some reference to rural development strategies but this is the extent.
19 By 2020, knowledge , the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	There is no specific target for building a knowledge base around biodiversity. <i>Action 3</i> is to Increase stakeholder awareness and involvement and improve enforcement . This relates to the nature directives rather than biodiversity overall. References to the importance of evidence are made in the Strategy text.
20 By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.	<i>Target 6, Action 18 - mobilise additional resources for global biodiversity conservation</i> - also directly translates to this although does not include specific reference to the Strategy for Resource Mobilization. The importance of financial resources is also mentioned in the main Strategy text.

Agenda 2030 and SDGs: The EU Biodiversity Strategy is, in general, in line with the relevant targets of the SDG 14 and 15 on life under water and on land. The EU Biodiversity Strategy relates to only a minority of the 17 SDGs; however such is the design of the SDGs that they themselves are interconnected and thus in achieving some goals there are knock-on effects for others that may not be directly related. The most relevant SDGs to the EU Biodiversity Strategy are 12, 13, 14 and 15 within which framework some targets and actions from the Biodiversity Strategy are directly interrelated. The design of the SDGs makes a number of them naturally interrelated so in some cases the spill-over effect can influence seemingly less-related goals, this is reflected in some of the targets and actions of the Biodiversity Strategy. The table below illustrates the linkages between SDGs and EU Biodiversity Strategy.

Table F-4 Linkages between SDGs and EU Biodiversity Strategy

SDG	EU Biodiversity Strategy
1 - No poverty	There are no specific references to poverty in the EU BDS.
2 - Zero hunger	There are no specific references to hunger due to it not being a priority issue in Europe.
3 - Good health and wellbeing	<i>Target 2</i> refers to health in reference to ecosystems and services; <i>Target 4</i> refers to the health of Europe's marine ecosystems. 'well-being' is referenced only in the foreword to the policy document in which it is stated that biodiversity is essential for our economy and for our well-being . No Targets or actions are tied to this.
4 - Quality education	There are no specific references to quality education.
5 - Gender equality	There are no specific references to gender equality.
6 - Clean water and sanitation	<i>Target 2</i> makes some reference to providing ecosystems with clean water and recognising the downstream effects for society. Also includes reference to key land and water use policies under <i>Target 1</i> but these are not specifically aimed at drinking water. There is no reference to sanitation measures.
7 - Affordable and clean energy	There is no specific reference to the affordability of energy or its cleanliness. However, clean energy can be a byproduct of more efficient practices in agriculture which are targeted in <i>Targets 1-6</i> .
8 - Decent work and economic growth	There are no specific mentions of decent work or economic growth. Rather economic activity should always be sustainable is the general trend throughout. In the foreword to the policy document it is noted that biodiversity is essential for our economy - but there are no targets and actions tied to this.
9 - Industry, innovation and infrastructure	<i>Target 4</i> addresses industry practices of fisheries and includes some actions for the management of them. <i>Target 2</i> includes specific reference to green infrastructure as an important mechanism for meeting challenges that infrastructure can cause to biodiversity and the environment generally. <i>Action 6</i> included the development of a Strategy on green infrastructure by 2012 including through public-private partnership. The Strategy text mentions the business opportunities resulting from biodiversity, and the importance of partnerships with business, including the EU Business and Biodiversity Platform.
10 - Reduced inequalities	There are no specific references to reducing inequalities.
11 - Sustainable cities and communities	There are no specific areas of the BS that address cities, but some actions refer to increasing sustainable practices in communities e.g. <i>Target 6</i> , <i>Action 14</i> that recognises international obligations, <i>Action 9</i> on rural development particularly. Actions related to green

SDG	EU Biodiversity Strategy
	infrastructure under Target 2 are important for sustainable cities and communities.
<p>12 - Responsible consumption and production</p> <p>12.1 - implement 10-year framework of programmes on sustainable consumption and production</p> <p>12.2 - by 2030, achieve sustainable and efficient use of natural resources</p> <p>12.3 - by 2030, halve per capita global food waste, and along supply chains</p> <p>12.4 - by 2020, management of chemicals and wastes, reduce release to air, water, soil to minimise impact on human health and environment</p> <p>12.5 - by 2030, reduce waste through prevention, reduction, recycling, reuse</p> <p>12.6 - encourage companies to use sustainable practices</p> <p>12.7 - public procurement practices - sustainable</p> <p>12.8 - by 2030, ensure all people have information for SD and lifestyles in harmony with nature</p> <p>12.A - support developing capacity in science and technology</p> <p>12.B - tools to monitor SD for tourism, creates jobs and promotes culture</p> <p>12.C - rationalise fossil-fuel subsidies, restructure taxation, consider developing needs</p>	<p><i>Action 6</i> of the EU BS is to restore and promote the use of green infrastructure through developing a strategic framework to set priorities for ecosystem restoration - contributing to more sustainable and efficient use of natural resources and consumption of them. <i>Target 4</i> is also directly related to SDG 12 in the ambitions of achieving MSY and in <i>Action 14</i> eliminate adverse impacts on fish stocks, species, habitats and ecosystems - including reference to eco-tourism and monitoring as per SDG 12.B specifically. This illustrates the nature of the SDGs to overlap and how the EU BS can achieve multiple SDGs through a single framework. <i>Action 17</i> addresses SDG 12.6 in the development of trade agreements that include sustainable development guidance (17b and 17c).</p>
<p>13 - Climate action</p> <p>13.1 - strengthen resilience to climate-related hazards</p> <p>13.2 - integrate measures into national policies, strategies, planning</p> <p>13.3 - improved education and awareness, capacity for climate change mitigation and adaptation</p> <p>13.A - by 2020, \$100B every year to UNFCCC for developing states</p> <p>13.B - promote mechanisms for raising capacity for planning and management in least developed countries, small islands, focusing on women, youth and local and marginalised communities.</p>	<p>The EU BS includes a number of actions that contribute to integrating sustainable policies in to national policies and practices and as such the entire Strategy indirectly through Natura 2000 and <i>Action 1</i>; <i>Actions 3 and 4</i> on increasing stakeholder awareness and involvement and improving monitoring and reporting; <i>Actions 5 and 6</i> to improve knowledge of ecosystems and their services and to set priorities to restore ecosystems and promote green infrastructure. <i>Action 9</i> is linked with SDG 15, and to some extent SDG 13. B. <i>Target 6</i> also establishes the ambitions of the EU BS as beyond the borders of the EU by contributing to strengthening worldwide the implementation of the Nagoya Protocol on Access to Genetic Resources which in some way contributes to sustainable use and conservation of biodiversity, as well as to create opportunities for capacity development of local communities.</p>
<p>14 - Life below water</p> <p>14.1 - reduce pollution</p> <p>14.2 - by 2020, Sustainably manage marine ecosystems</p> <p>14.3 - minimise ocean acidification</p> <p>14.4 - by 2020, end overfishing, regulate harvesting, achieve MSY</p> <p>14.5 - Conserve 10% of coastal and marine areas</p> <p>14.6 - prohibit harmful subsidies for fisheries</p> <p>14.7 - Increase benefit to small islands</p>	<p><i>Target 4</i> most directly addresses life below water including <i>Actions 13 and 14</i>: Improve the management of fished stocks and Eliminate adverse impacts on fish stocks, species, habitats and ecosystems and including the target of achieving Maximum Sustainable Yield (MSY) by 2015. <i>Action 1</i> - committing to Natura 2000 includes management, conservation and protection of the marine environment. Under the general heading of 'ecosystems', <i>Target 2</i> also refers to the knowledge sharing and prevention of ecosystem degradation - though there is no specific reference to marine ecosystems. <i>Target 5</i> without specific reference to marine life also concerns life below water in the</p>

SDG	EU Biodiversity Strategy
14.A - scientific knowledge and technology sharing 14.B - Access for small-scale fishers 14.C - Implement international law as in UNCLOS	establishment of regimes and policies to combat Invasive Alien Species (IAS) (<i>Actions 15 and 16</i>). <i>Target 6</i> also concerns SDG 14 in referencing the design of policies with biodiversity in mind and the mobilisation of resources to reduce negative impacts.
15 - Life on land 15.1 - by 2020, restoration and sustainable use of ecosystems 15.2 - by 2020, sustainable management of forests 15.3 - by 2030, combat desertification 15.4 - by 2030, conservation of mountain ecosystems 15.5 - urgent action to reduce degradation of natural habitats, by 2020 prevent the extinction of threatened species 15.6 - sharing of benefits from genetic resources 15.7 - end poaching and trafficking 15.8 - by 2020, reduce impact of IAS, control or eradicate priority species 15.9 - by 2020, integrate values in national and local planning, development, poverty reduction 15.A - increase financial resources for biodiversity and ecosystems 15.B - increase financial resources for forests including for developing states 15.C - enhance global support to combat poaching and trafficking including local community livelihood opportunities	Life on land is addressed by <i>Targets 1, 2, 3, 5 and 6</i> . <i>Target 1</i> including the Birds and Habitats Directives and Natura 2000 promote good management, financing, awareness, monitoring and supporting . Key goals of <i>Target 1</i> include significant habitat and species assessments. <i>Target 2</i> includes the explicit target to restore at least 15% of degraded ecosystems as well as improve knowledge, services and implementing an initiative, by 2015, to ensure no net loss of ecosystems and their services . <i>Target 3</i> also specifically addresses key elements of SDG 15 including improvement in the conservation status of species and habitats and enhance sustainable management including specifically with regards to forestry. <i>Action 10</i> directly addresses conservation of Europe's agricultural genetic diversity. <i>Actions 11 and 12</i> ultimately fall under the remit of Member States at the policy level. <i>Target 5</i> specifically addresses SDG 15.8 with the introduction of legislative instruments to combat IAS including priority species are controlled or eradicated and pathways are managed to prevent new IAS . <i>Target 6</i> aligns more clearly with the global ambitions of the SDGs including reducing indirect drivers of biodiversity loss, mobilising additional resources for global biodiversity conservation and regulating access to genetic resources and the fair and equitable sharing of benefits arising from their use which directly addresses SDG 15.5, 15.6 and 15.A particularly.
16 - Peace, justice and strong institutions	Throughout the BS there is a strong emphasis on the importance of good governance and the role of the EU as a strong component of driving Member States to achieve more sustainable practices. <i>Target 6</i> particularly highlights this in <i>Actions 18 and 19</i> to mobilise additional resources for global biodiversity conservation and 'biodiversity-proof' EU development cooperation. This relevance to SDG 16 is purely implied through the EU-centric nature of the Strategy and there is no specific reference to these goals as part of the Strategy.
17 - Partnerships for the goals	<i>Action 6b</i> refers to better targeted use of EU funding streams and public private partnerships . Although not specifically at the target and actions level there is an emphasis on partnerships for biodiversity that includes: developing the EU Business and Biodiversity Platform; implement TEEB recommendations at EU level; encourage collaborations between researchers and stakeholders in spatial planning and land use; encourage involvement of civil society; work with outermost regions (ORs); support collaboration and synergies with the biodiversity-related Conventions; and reinforce dialogue with candidate countries to develop their own policies to meet 2020 biodiversity targets.

UNFCCC: There are numerous synergies between the EU Biodiversity Strategy and the EU's commitments for climate action under the UNFCCC. Relevant parts of the UNFCCC include: Long-term temperature goal (Art. 2) - The Paris Agreement, in seeking to strengthen the global response to climate change, reaffirms the goal of limiting global temperature

increase to well below 2 degrees Celsius, while pursuing efforts to limit the increase to 1.5 degrees;

Global peaking and 'climate neutrality' (Art. 4) -To achieve this temperature goal, Parties aim to reach global peaking of greenhouse gas emissions (GHGs) as soon as possible, recognizing peaking will take longer for developing country Parties, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of GHGs in the second half of the century;

Mitigation (Art. 4) - The Paris Agreement establishes binding commitments by all Parties to prepare, communicate and maintain a nationally determined contribution (NDC) and to pursue domestic measures to achieve them;

Sinks and reservoirs (Art.5) -The Paris Agreement also encourages Parties to conserve and enhance, as appropriate, sinks and reservoirs of GHGs as referred to in Article 4, paragraph 1(d) of the Convention, including forests;

Voluntary cooperation/Market- and non-market-based approaches (Art. 6) - The Paris Agreement recognizes the possibility of voluntary cooperation among Parties to allow for higher ambition and sets out principles - including environmental integrity, transparency and robust accounting - for any cooperation that involves internationally transferal of mitigation outcomes;

Adaptation (Art. 7) - The Paris Agreement establishes a global goal on adaptation - of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change in the context of the temperature goal of the Agreement;

Loss and damage (Art. 8) - The Paris Agreement recognizes the importance of averting, minimizing and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events, and the role of sustainable development in reducing the risk of loss and damage;

Finance, technology and capacity-building support (Art. 9, 10 and 11) - The Paris Agreement reaffirms the obligations of developed countries to support the efforts of developing country Parties to build clean, climate-resilient futures, while for the first time encouraging voluntary contributions by other Parties. Provision of resources should also aim to achieve a balance between adaptation and mitigation;

Climate change education, training, public awareness, public participation and public access to information (Art 12) is also to be enhanced under the Agreement;

Transparency (Art. 13), implementation and compliance (Art. 15) - The Paris Agreement relies on a robust transparency and accounting system to provide clarity on action and support by Parties, with flexibility for their differing capabilities of Parties;

Global Stocktake (Art. 14) - A “global stocktake”, to take place in 2023 and every 5 years thereafter, will assess collective progress toward achieving the purpose of the Agreement in a comprehensive and facilitative manner;

Decision 1/CP.21 also sets out a number of measures to enhance action prior to 2020, including strengthening the technical examination process, enhancement of provision of urgent finance, technology and support and measures to strengthen high-level engagement;

EU NDC - (2015) made a commitment to at least 40% domestic reduction in greenhouse gas emissions by 2030 compared to 1990. A policy on how to include Land Use, Land Use Change and Forestry into the 2030 greenhouse gas mitigation framework will be established as soon as technical conditions allow and in any case before 2020. The target

represents a significant progression beyond its current undertaking of a 20% emission reduction commitment by 2020 compared to 1990 (which includes the use of offsets); Domestic legally-binding legislation already in place for the 2020 climate and energy package. The existing legislation for land use, land-use change and forestry (EU Decision 529/2013) is based on the existing accounting rules under the second commitment period of the Kyoto Protocol. Legislative proposals to implement the 2030 climate and energy framework, both in the emissions trading sector and in the non-traded sector, to be submitted by the European Commission to the Council and European Parliament in 2015-2016 on the basis of the general political directions by the European Council, taking into account environmental integrity.

The EU Biodiversity Strategy to 2020 makes numerous references to the links between biodiversity and climate action, recognising both the importance of mitigating climate change in efforts to halt biodiversity loss, and the role of ecosystems in climate change mitigation and adaptation. It states that the EU will promote enhanced cooperation between the CBD, Climate Change and Desertification Conventions to yield mutual benefits. The EU will seek to promote co-benefits between biodiversity and climate change through EU funding and ensuring synergies with relevant funding sources, including climate finance (e.g. ETS revenues, REDD+). Synergies are identified with respect to Target 2 (ecosystem restoration) and 3b (forest management) but are also relevant to other targets (including 1, 3a and 6). Coherence with climate change policy is discussed further in the answer to questions 12 and 13. Overall, the Strategy is coherent with international climate commitments, but it is less clear whether potential synergies are being maximised.

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