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COMMISSION STAFF WORKING DOCUMENT

EU ASSESSMENT OF PROGRESS IN IMPLEMENTING THE EU BIODIVERSITY STRATEGY TO 2020

Accompanying the document

Report from the Commission to the European Parliament and the Council

The Mid-Term Review of the EU Biodiversity Strategy to 2020

{COM(2015) 478 final}

MID-TERM REVIEW OF THE EU BIODIVERSITY STRATEGY TO 2020

EU ASSESSMENT OF PROGRESS IN IMPLEMENTING THE EU BIODIVERSITY STRATEGY TO 2020

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I. INTRODUCTION

Biodiversity – the variety of life on the planet – underpins our economy and wellbeing. It is our life insurance and our natural capital. It delivers a wide range of essential benefits to human society such as food, materials, clean water, clean air and medicines as well as protecting us from the consequences of extreme weather events and mitigating the impacts of climate change. Up to 50% of our prescription medicines use naturally occurring substances from plants. The value of insect pollination services alone has been estimated at €15 billion per year in the EU[1]. One in six jobs in the EU depends to some extent on nature and biodiversity[2].

The World Economic Forum listed 'biodiversity loss and ecosystem collapse' among the top 10 risks in the Global Risks Perception Survey 2014[3]. Scientists further identify biodiversity loss and climate change as the two core planetary boundaries that have already been crossed by humanity[4]. Together with climate change - another major global challenge - it increases the risk of irreversible changes[5], undermining economic development and societies' resilience in the face of new challenges. Furthermore, the risk of extensive global biodiversity loss could increase if action is not taken to limit climate change to below 2°C. The most recent scientific research into species extinction rates concludes that even when the most conservative estimates are applied, species are found to be disappearing about 100 times faster than the 'normal' rate between mass extinctions, known as the background rate. It also finds that this is mainly the result of human activity and confirms that if current rates of extinction continue unchecked, the social and economic consequences for humanity will be enormous[6]. For the EU, 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 50 billion EUR per year[7]. 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 challenges such as climate change, pollution and habitat destruction. For example, economic losses from natural disasters, such as floods and droughts, amounted to around €100 billion in the period 2002-2014 in the EU and caused over 80,000 deaths[8], and are likely to increase due to demographic trends and the impacts of climate change. In many situations, healthy wetland and forest ecosystems can provide effective and cost-efficient protection against extreme weather events.

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[1] Gallai et al, 2009

[2] GHK et al. 2007, box 15 TEEB – The Economics of Ecosystems and Biodiversity for National and International Policy Makers – Summary: Responding to the Value of Nature 2009
http://www.teebweb.org/media/2009/11/National-Executive-Summary_-English.pdf

[3] Global Risks Perception Survey 2014
http://reports.weforum.org/global-risks-2015/part-1-global-risks-2015/environment-high-concern-little-progress/

[4] Steffen W, et al. (2015) Planet Boundaries: Guiding human development on a changing planet. Science. 13 February 2015. Vol. 347 n° 6223.

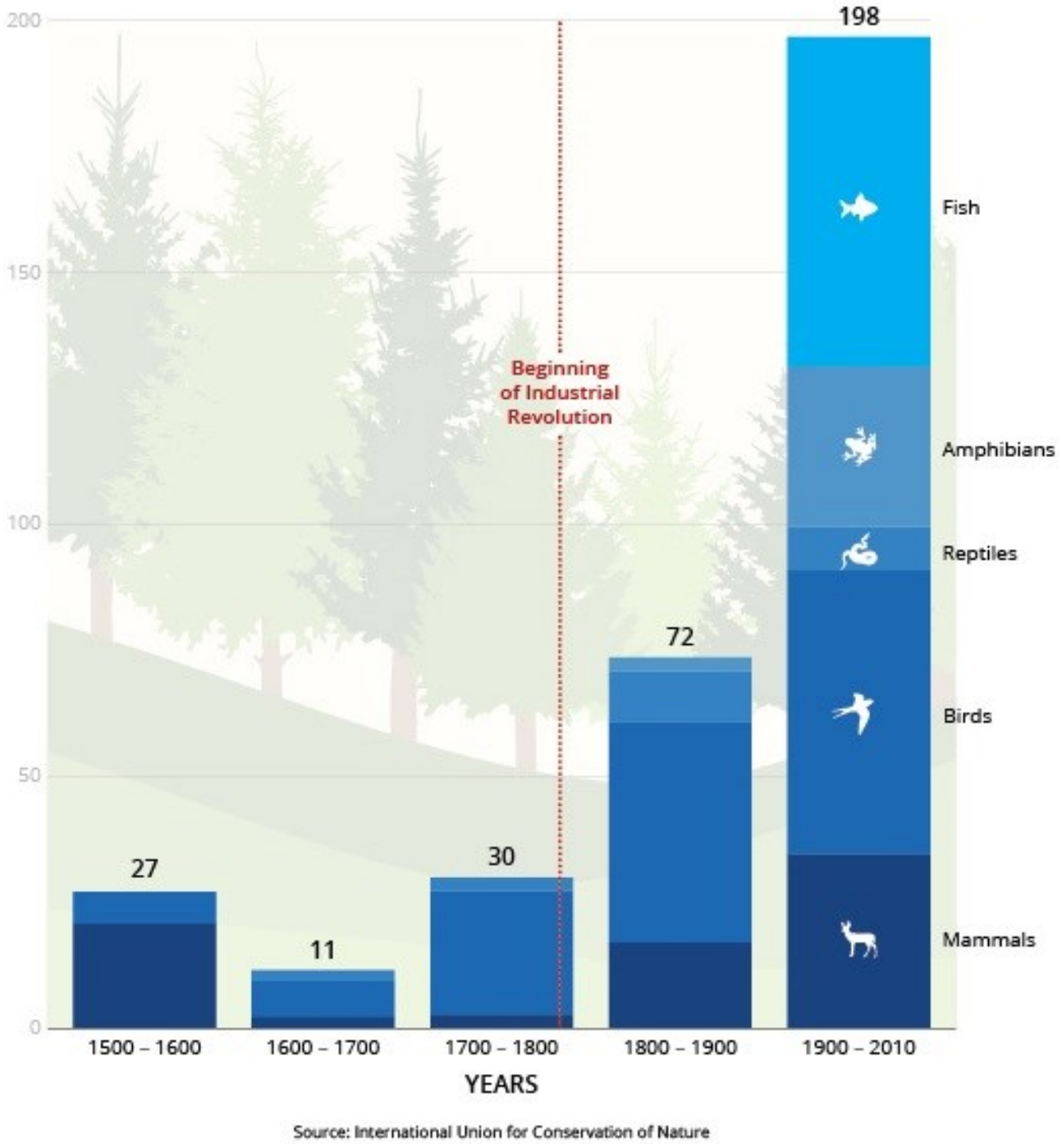
[5] Steffen W, et al. (2015) Planet Boundaries: Guiding human development on a changing planet.

[6] http://advances.sciencemag.org/content/1/5/e1400253.full

[7] The costs of not implementing the environmental acquis, COWI et al, 2011. http://ec.europa.eu/environment/enveco/economics_policy/pdf/report_sept2011.pdf

[8] Cf. Centre for Research on the Epidemiology of Disasters (CRED)

Figure 1 – Number of exctinct species over time at global level



Source: International Union for Conservation of Nature

The window of opportunity for halting and reversing biodiversity loss is rapidly closing. Human-induced impacts and pressures on biodiversity such as land clearing for farming, logging and settlement, introduction of invasive species, carbon emissions that drive climate change and ocean acidification, and toxins that alter and poison ecosystems are exacerbated by world population growth, rising per capita consumption and economic inequity[9].

Recognising this challenge, in 2011, the Commission adopted the EU Biodiversity Strategy to 2020[10] with the headline target set by EU Heads of State and Government in 2010 to **'halt the loss of biodiversity and ecosystem services by 2020, to restore ecosystems in so far as is feasible, and to step up the EU contribution to averting global biodiversity loss**'. The strategy is built around six operational targets addressing the implementation of EU nature legislation as well as the main pressures on biodiversity in the EU and beyond, with 20 associated supporting actions over the period 2011-2020. The EU Strategy also emphasises the need to take full account of the economic and social benefits provided by nature contribution and to integrate these benefits into reporting and accounting systems.

The EU Biodiversity Strategy to 2020 is an integral part of the Europe 2020 Strategy[11], and in particular the resource efficient Europe flagship initiative[12], and contributes to the implementation of the 7th Environmental Action Programme[13]. The Strategy is a crucial instrument to secure and sustain the natural resource base which our economy needs to thrive, and is therefore fully relevant in the context of the circular economy debate. The Strategy is also designed to deliver on the EU international commitments under the Convention on Biological Diversity. It is linked to policy objectives which are a prerequisite for delivery on the EU Biodiversity Strategy, notably related to climate policies, legislation in the field of air and chemicals, the Water Framework Directive, the Marine Strategy Framework Directive, and the EU Thematic Strategy for Soil Protection.

The preliminary results from the 2015 Biodiversity Eurobarometer survey indicate that three out of four Europeans "agree totally" that it is important to stop biodiversity loss because it is our responsibility to look after nature., which gives a clear public support to pursue the implementation of the EU 2020 Biodiversity Strategy.

The EU Biodiversity Strategy to 2020 foresees that a mid-term review will be undertaken to take stock of progress under the strategy targets and actions, drawing on the best set of information sources. Identifying gaps in implementation is necessary in order to inform decision-makers of areas in which increased efforts are needed to ensure that the EU meets its biodiversity commitments by 2020.

[9] Steffen W, et al. (2015) Planet Boundaries: Guiding human development on a changing planet. Science. 13 February 2015. Vol. 347 n° 6223.
[10] COM(2011)244 final
[11] COM(2010) 2020 final
[12] COM(2011) 21 final
[13] Decision No 1386/2013/EU

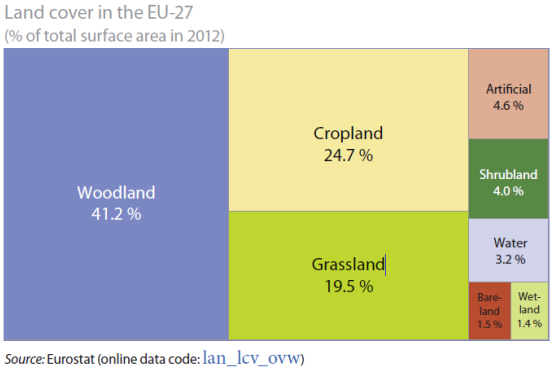
II. BIODIVERSITY IN THE EU

The countries of the EU are extremely diverse in terms of their climate, geology and topography and centuries of diverse farming and forestry traditions have shaped a wealth of multifunctional landscapes and contributed significantly to Europe's biodiversity and cultural diversity However, developments, particularly during the 20th century, have also resulted in large-scale destruction of Europe's natural heritage, including the loss of two thirds of its wetlands, and of almost three-quarters of its sand dunes and heaths, through a combination of land-use change, over-exploitation of biodiversity, infrastructure developments, pollution, the spread of invasive alien species and climate change.[14]

The **EU 2010 Biodiversity Baseline**[15] provides a reference point against which to assess changes in biodiversity over time. The 2010 baseline suggested that, although species extinction in the EU is not occurring nearly as rapidly as in other regions and continents, the percentage of species threatened with extinction is a matter of concern.

The **main ecosystems in Europe**[16] are forest and woodland (covering 41 % of the territory), cropland (25 %), and grassland (19 %). Freshwater ecosystems (open water and wetlands) cover only less than 5% of EU28 area but hold a higher number of species per unit area than land or sea, and provide a number of key ecosystem services.

Figure 2 – Land cover in the EU-27



Source: Eurostat (online data code: lan_lcv_ovw)

Europe is also home to a considerable diversity of **species**: there are 260 species of mammals (of which 40 are marine mammals), 500 species of fish, 500 of breeding birds, 150 of reptiles, 84 of amphibians and 90 000 species of insects, including 10 000 of butterflies and moths, 30 000 of beetles and 20 000 species of vascular plants. These figures do not include the EU's Outermost Regions and Europe's Overseas Countries and Territories, which host more than twice the number of species present in continental Europe.

[14] EEA Technical report on State of Nature in the European Union, May 2015 http://www.eea.europa.eu/highlights/state-of-nature-in-the
[15] http://www.eea.europa.eu/publications/eu-2010-biodiversity-baseline/
[16] Source: Eurostat LUCAS 2012 survey (http://ec.europa.eu/eurostat/statistics-explained/index.php/Land_cover_statistics)

III. PROGRESS SINCE 2011

2020 Biodiversity Headline Target

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.

State of Nature in the EU

Compared to the findings as illustrated in the EU 2010 Biodiversity Baseline, the most recent assessment of **conservation status of species of Community interest**[17] shows that overall 23% of species assessments are favourable and 4% are improving, 20% are stable 22% are deteriorating and 14% are without a known trend.

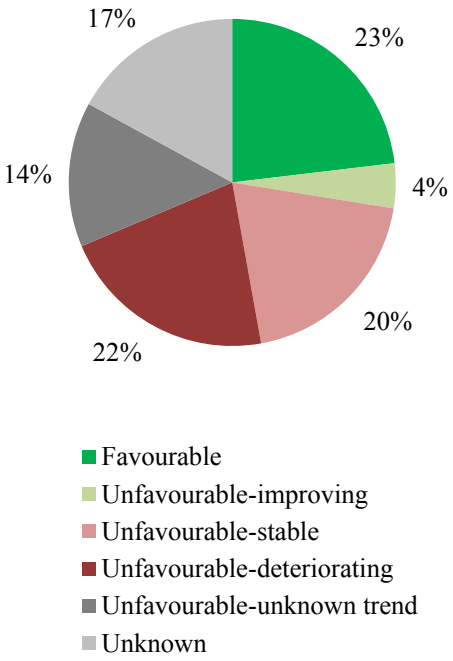
The proportion of assessments which are unfavourable and deteriorating is particularly high for fish, molluscs and amphibians, all associated with wetlands and freshwater (rivers, lakes).

Only 16% of the fish species protected under the Habitats Directive are assessed as having a favourable status, while over a quarter of vascular plants are considered favourable. Looking at the conservation status trends, fish molluscs and amphibians appear to have a particularly high proportion of species with a deteriorating trend. These species are depending on aquatic environments, such as rivers, lakes and wetlands, which mostly have an unfavourable-inadequate conservation status. The main identified threats are human-induced changes to hydrologic functioning, loss of connectivity, canalisation, removed of sediment, and eutrophication and pollution.

On the positive side, 6% of assessments for mammal species are unfavourable but improving and only 12% show a deteriorating trend. **S**ome species like the Otter, *Lutra lutra*, are showing signs of improvement. In the Atlantic region, it has made a steady recovery over the last 20 years thanks to a decrease in certain waterborne pollutants such as PCBs and mercury, protection from hunting and improvements in aquatic habitats.

[17] EEA Technical report on State of Nature in the EU, May 2015 http://www.eea.europa.eu/highlights/state-of-nature-in-the

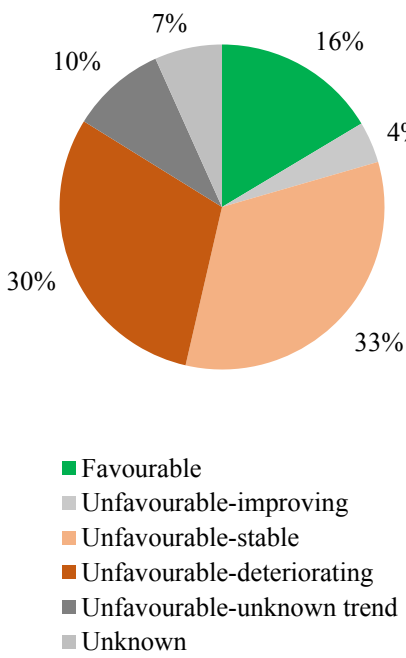
Figure 3 - Conservation status of and trends for species



Results of the **assessments of habitats' conservation status** indicate that in total, 16% of the habitat assessments are favourable and 4% are improving and 33% are unfavourable but stable. However, a further 30% are still deteriorating, which is a serious cause for concern. Only 7% of the assessments are unknown.

The proportion of assessments which are unfavourable and deteriorating is particularly high for bogs, mires and fens, but also dune habitats and grassland, all associated with wetlands, coastal and agricultural ecosystems.

Figure 4 - Conservations status of and trends for habitats



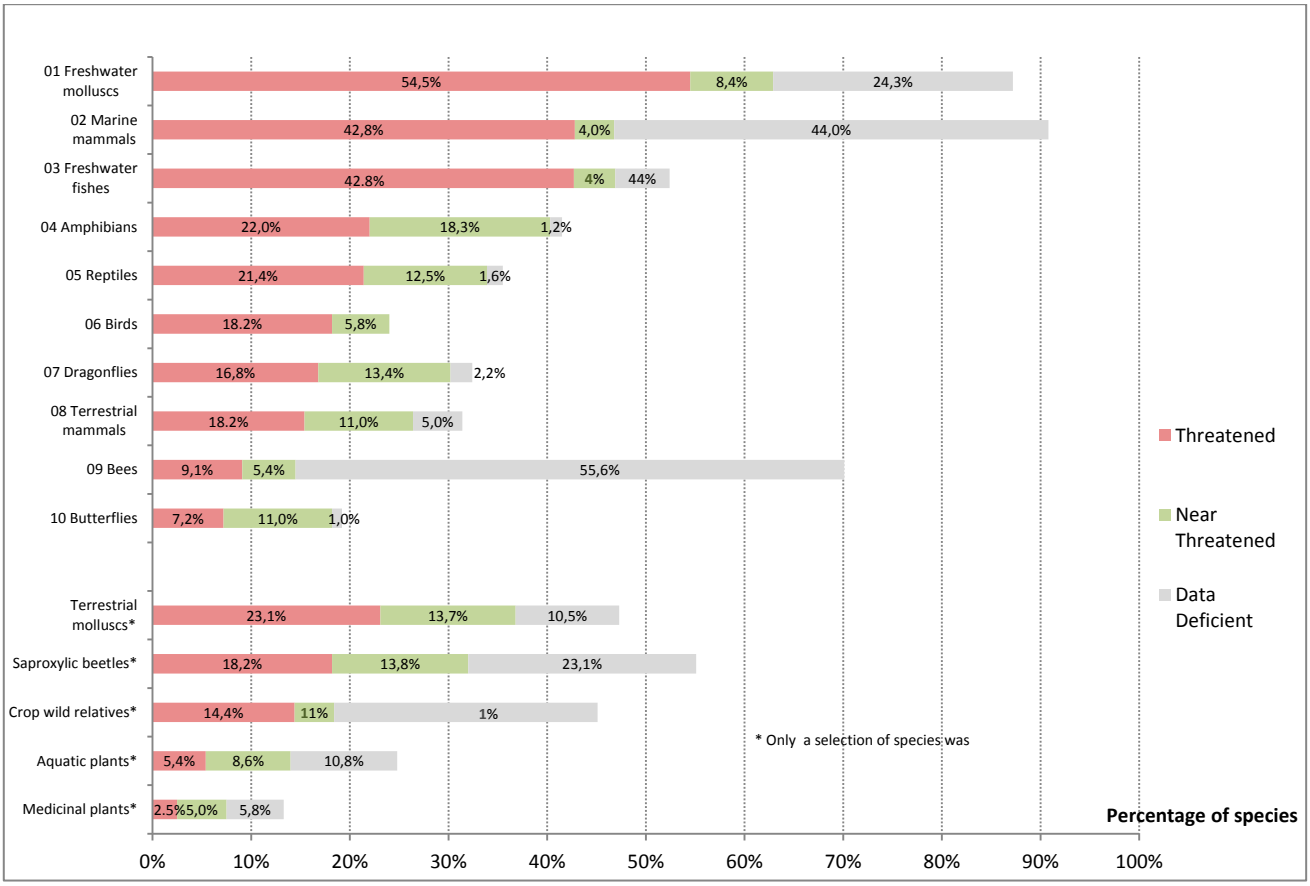
In the **marine environment**, the highest share of unfavourable-bad species assessments is in the Baltic Sea (60%) but the number of species assessed was rather low compared to terrestrial and the share of unknown assessments is also very high (ranging from 33% to 88%). There are only a few habitat types covered by the Habitats Directive. The two regions reporting favourable habitat assessments are the Macaronesian (33.3%) and the Black Sea regions (14.3%). However, the share of unknown assessments is still far higher than for terrestrial regions.

For the marine habitats, the Atlantic and Baltic region have shown a particularly high proportion of unfavourable assessments (71.4% and 42.9% respectively).

Species threatened with extinction in the EU

The overview of the latest results of the IUCN Red List assessments, show that **freshwater species** - molluscs (55%) and freshwater fish (43%) - are the groups with the **highest proportion of threatened species**, together with marine mammals (43%), followed by **amphibians** (22%), **reptiles** (21%) and **birds** (18%).

Figure 5 - Species facing the risk of extinction for the ten taxonomic groups which have had a complete assessment at EU level between 2007 and 2015 (IUCN, 2015)



Box 1: Threatened marine fishes

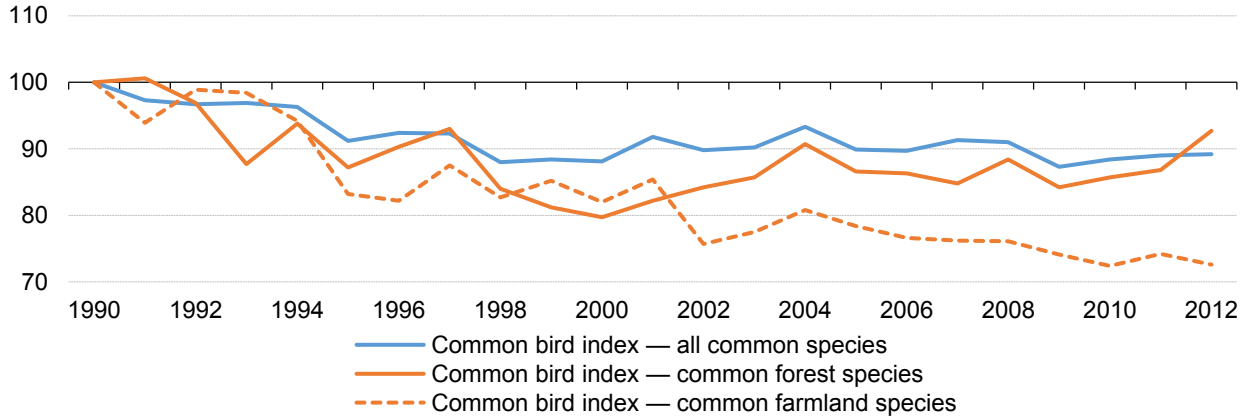
The European Red List of Threatened Species published by IUCN on 3 June 2015 shows that 7.5% of all European marine fish species are threatened with extinction in European waters. While some fishes are recovering, marine management has been less successful for many other commercial species. 40.4% of European sharks, rays and chimaeras face an elevated risk of extinction. The population trend for 68.4% of the species is unknown, while 8.4% of the populations are declining, 21.5% are considered stable and 1.7% are increasing. The report, financed by the European Commission, is the first ever complete assessment of marine fishes native to Europe, assessing all of the 1,220 species present in the Mediterranean Sea, Black Sea, Baltic Sea, North Sea, and the Northeast Atlantic Ocean, including many highly exploited species that support large commercial, recreational, and artisanal fisheries. Most of these species are not covered by the nature legislation. The highest number of threatened species can be found in the Mediterranean Sea, the western coast of the Iberian Peninsula and the Macaronesian islands. The report identified overfishing as the main threat to marine fishes in Europe, both in targeted fisheries and as by-catch. Other major threats include coastal development, energy production and mining, pollution and climate change.

Trends in common species in the EU

Since 1990, **common bird** populations have decreased by around 11%; more recently and as compared to the EU 2010 Biodiversity Baseline, populations have been stabilised. However, the decline of common farmland birds, which was more pronounced at nearly 30% since 1990, is not reversed yet and populations are still declining as compared to the EU 2010 Biodiversity Baseline.

Figure 6 - Common bird indices, EU, 1990-2012 (*)

(index 1990 = 100)



(*) Estimates. EU: aggregate changing according to the context. All common species covers information on 163 different bird species. Common farmland species covers 39 bird species. Common forest species covers 33 bird species.

Source: EBCC / RSPB / BirdLife / Statistics Netherlands; Eurostat (online data code: env_bio3)

Status and trends of ecosystem and their services in the EU

The long-term well-being of Europe's economies and societies is underpinned by its natural capital. Its genetic resources, species and ecosystems provide essential goods and services. These include fertile soils, multi-functional forests and productive seas, fresh water and air, biomass for multiple uses and ecosystem-based climate mitigation and adaptation. Unfortunately, many of Europe's **ecosystems** are now being degraded and their ability to deliver these valuable services is being reduced. One issue alone — insect pollination, which is being heavily degraded in Europe — has an estimated economic value of EUR 15 billion a year in the EU[18]. This presents an important problem that differs from the case of economic and human capital. The value of natural capital to our economies and societies, and the interdependencies of nature with other societal objectives, is often not reflected in private and public decisions, indicators, or accounting systems and economic signals in our market economies.

[18] Gallai et al, 2009

Figure 7 - Trends in pressures on ecosystems

Ecosystem type	Habitat changes	Climate change	Exploitation	Invasive species	Pollution and nutrient enrichment
Urban	↗	↑	↗	↗	↑
Cropland	↗	↑	↗	↗	↑
Grassland	↗	↑	↗	↗	↑
Woodland and forest	↘	↑	→	→	↗
Heathland, shrub and sparsely vegetated land	→	↑	→	↗	↗
Wetlands	→	↑	→	↗	↘
Freshwater (rivers and lakes)	→	↑	→	↗	↘
Marine (transitional and marine waters, combined)*	↗	↑	↗	↗	↗

Source: adapted from ETC/SIA, 2014

Key:

Projected future trends in pressure			
↘	→	↗	↑
Decreasing	Continuing	Increasing	Very rapid increase
Observed impact on biodiversity to date			
Low	Moderate	High	Very high

For the periods 1950-2010, the majority of **ecosystem services** show either a degraded or mixed (i.e. degraded in some regions, enhanced in other) status across Europe. However, there are some positive exceptions such as timber production and climate regulation in forests (Source: EU2010 Baseline, EEA). A recent analysis confirms increasing trends between 2000 and 2010 for some provisioning services but decreasing of services directly related to biodiversity. Between 2000 and 2010, increasing extent of forests resulted in positive influences on erosion control, carbon storage, water retention, air quality regulation and recreation. But, pollination is the most degraded for Woodland and forest, Heathland and shrub, and grasslands. (Source: Maes et al, 2015).

Main pressures on and drivers of change to biodiversity (direct and indirect)

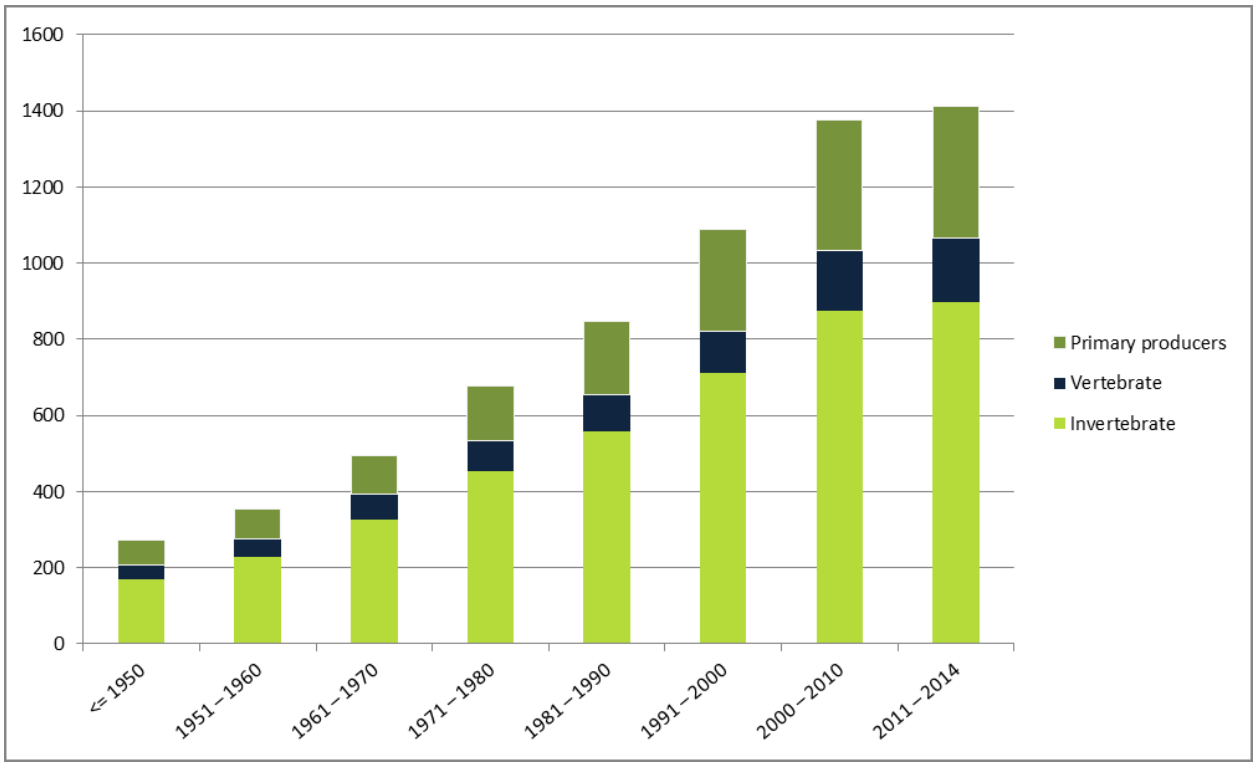
Habitat fragmentation, degradation and destruction due to land-use change, climate change and use of the seas are some of the main pressures and drivers causing biodiversity loss. Natural grasslands are still being turned into arable land and built-up areas; extensive agricultural land is being converted into forms of more intensive agriculture and, mainly as a result of abandonment, into forest. These are a major concern. They are leading to the loss of farming practices that support biodiversity and 70% of EU species (dragonflies,

butterflies, mammals, amphibians, reptiles) are threatened by the loss of their habitat. Fragmentation due to urban sprawl and infrastructure development — nearly 30 % of the EU land mass shows signs of moderately high to very high fragmentation — severely affects ecosystem connectivity and their health and ability to provide services.

Some 30 % of species are threatened by overexploitation of forests, oceans, rivers, lakes and soils. Pollution from pesticides and fertilisers, such as nitrates and phosphates, is threatening 26 % of species. Agricultural nitrogen balance is generally declining but is still high in some countries, particularly in lowland Western Europe. It is estimated that some 50-80 % of the total nitrogen load in freshwater originates from farming, contributing to biodiversity loss in freshwater ecosystems and coastal waters.[19] In particular, half of the geographical range of natural and semi-natural habitats across the European Union was exposed to atmospheric nitrogen deposits above the critical load in 2004.

Invasive alien species represent an increasing threat to biodiversity with about 12 000 alien species that have been found in the environment of the EU, 10-15 % of them becoming invasive. Their number is steadily rising, in particular in marine and estuarine systems.

Figure 8 - Cumulative number of marine non-indigenous species



[19] European Environment Agency. European waters — assessment of status and pressures. EEA Report No 8/2012. http://www.eea.europa.eu/publications/european-waters-assessment-2012.

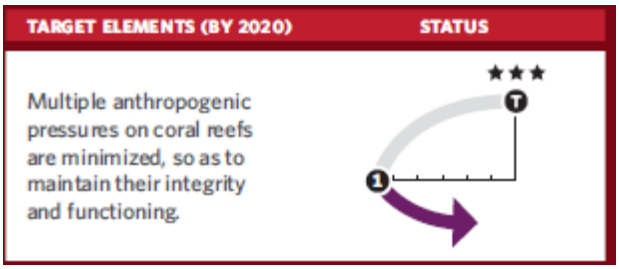
Figure 8 shows the cumulative number of marine Non-Indigenous Species (NIS). Analysis is made at Pan-European level and shown per decade. The most recent period covers 2011 to 2014.

Climate change represents another increasing threat to biodiversity; for instance negative impacts have been recorded already for a majority of widespread bird species[20].

Global biodiversity loss is still a big concern. Europe is committed to reduce indirect drivers of biodiversity loss. The ecological footprint for the EU-28 countries increased rapidly during the 1960s and 70s, and has remained relatively constant since the 1980s. The region's total biocapacity, however, has changed very little since 1961. The EU-28 region's footprint in 2010 was over twice the size of its biocapacity as it was in 2000 (Source: SEBI026[21], EEA). Given that this ratio has hardly changed since the mid-seventies, it is very unlikely that any improvement will be made by 2020.

Globally, multiple anthropogenic pressures on coral reefs and other vulnerable ecosystems (seagrass habitats, mangroves or mountains) impacted by **climate change or ocean acidification** are still increasing (cf. 4th Global Biodiversity Outlook, 2014 https://www.cbd.int/gbo4/).

Figure 9 – Target elements (by 2020)



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.

Socio-economic benefits of reaching this target: *Socio-economic benefits of reaching this target: the EU Natura 2000 network delivers economic benefits of the range of 200-300 billion EUR per year through the provision of ecosystem services such as carbon storage, flood mitigation, water purification, pollination*

[20] Gregory R.D., Willis S.G., Jiguet F., Voříšek P., Klvaňová A., van Strien, A., Huntley, B., Collingham, Y.C., Couvet, D., Green, R.E. (2009) An Indicator of the Impact of Climatic Change on European Bird Populations. PLoS ONE 4(3): e4678 (DOI:10.1371/journal.pone.0004678). http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0004678

[21] http://www.eea.europa.eu/data-and-maps/indicators/ecological-footprint-of-european-countries/ecological-footprint-of-european-countries-2

and fish protection[22]*. A range of local socio-economic activities and almost 4.5 million jobs depend on the ecosystems that Natura 2000 protects. These benefits outweigh significantly the costs of managing and protecting Natura 2000, which are estimated at around €5.8 billion/year*[23] *- a tiny fraction of the network's worth to society. For example, the full implementation of Natura 2000 in Spain is expected to result in a GDP increase between 0.1 - 0.26%, and to generate over 12,000 new jobs*[24].

The Birds and Habitats Directives do not contain specific deadlines for achieving favourable or good conservation status. However, Target 1 of the Strategy sets measurable goals to be achieved by 2020. These goals were based on an ambitious but achievable scenario that assumed full implementation by Member States of measures under the directives to improve conservation status, supported by common actions at EU level. Using the 2009 report drawn up under the Habitats Directive and the 'Birds in the EU' status assessment of 2004[25] as benchmarks, the assessment of progress under Target 1[26] is drawn mainly from the Report on the State of Nature in the EU[27], which was adopted by the Commission on 20 May 2015 and provides the most comprehensive assessment to date.

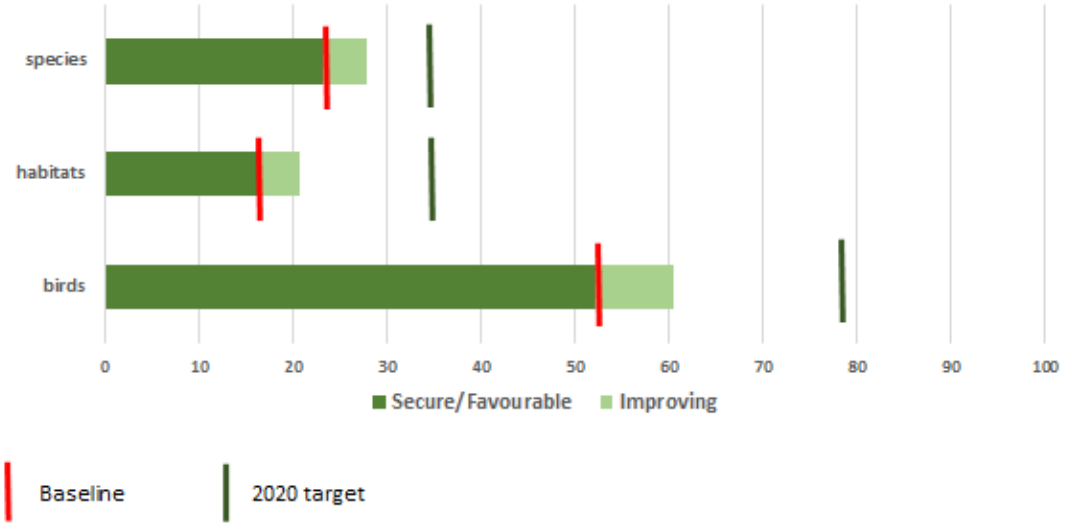
Since the last reporting period, the number of assessments of species and habitats carried out under both the Habitats and Birds directives which show a secure or improved conservation status has slightly increased. The findings also show that the majority of birds have a secure status, and some species and habitats are doing better (see

Figure **10**).

The **Habitats Directive** protects over 1200 rare, threatened or endemic species of wild animals (except birds) and plants – often collectively referred to as 'species of European importance'. The directive also protects some 230 natural and semi-natural habitat types. The **Bird Directive** covers all bird species that are naturally present in the EU. In total this amounts to around 450 species, ranging from familiar garden birds to much rarer migratory species that spend an important part of their annual cycle in the EU.

[22] ten Brink P., Badura T., Bassi S., Daly, E., Dickie, I., Ding H., Gantioler S., Gerdes, H., Hart, K., Kettunen M., Lago, M., Lang, S., Markandya A., Mazza, L., Nunes P.A.L.D., Pieterse, M., Rayment M., Tinch R., (2011). Estimating the Overall Economic Value of the Benefits provided by the Natura 2000 Network. Final Synthesis Report to the European Commission, DG Environment on Contract ENV.B.2/SER/2008/0038. Institute for European Environmental Policy / GHK / Ecologic, Brussels 2011
http://www.ieep.eu/assets/955/Economic_Benefits_of_Natura_2000_Network_Synthesis_report.pdf
[23] Gantioler et al., 2010.
[24] Fernandez et al., 2008
[25] BirdLife International (2004). Birds in the European Union: a status assessment. Wageningen, The Netherlands.
[26] To quantitatively measure this target a methodology was developed by the Expert Group on Reporting under the Nature Directives and further validated by the Group of experts on the Birds and the Habitats Directive. It is based on a changes matrix which displays the different possible combinations of changes in EU conservation status assessments (for Art. 17) between the two reporting periods (i.e. 2001-06 and 2007-12) or changes in bird population status (for Art 12) since 2004 when 'Birds in the European Union' (BirdLife 2004) was published.
[27] See http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2015:219:FIN

Figure 10 - Progress towards Target 1: % of secure/favourable or improving assessments for birds (Birds Directive) and for habitats and species (Habitats Directive)



Source: EEA 2015

In 2007-12 the percentage of **species assessments** either in favourable (23%) or improved (4%) status was of 27 % while the 2020 target is 34.5%. However, 22% are still deteriorating and 14% are without a known trend.

Box 2: Species recovery - some success stories

Largely thanks to conservation measures undertaken with the support of EU LIFE projects, some species are showing signs of improvement. The Large Copper butterfly, *Lycaena dispar,* is improving across the Continental region thanks to targeted conservation measures. The European Bison, *Bison bonasus,* in the Alpine region, the Grey Seal, *Halichoerus grypus,* in the marine Baltic region and the Mediterranean Horseshoebat, *Rhinolophus Euryale,* in the Mediterranean region are also improving. Several species of birds of prey, including the Carpathian Basin populations of the Eastern Imperial Eagle *Aquila heliaca*, have increased as a result of measures, such as protection of nesting sites and habitat management.

The assessments of **habitat types** show that 16.4% of assessments are favourable and 4.4% have improved, while 30% are still deteriorating since 2006. This means that about 20 % reached the target condition, while the 2020 target is 34%. On the whole, habitat types show a worse conservation status and trend than species. It is widely recognised that restoration of habitats can often take a long time from the implementation of measures to the achievement of tangible improvement in biodiversity.

Box 3: Threatened habitats – grassland, wetland and dunes

Grassland, wetlands and dune habitats are of particular concern; the proportion of assessments which are unfavourable and deteriorating is particularly high for bogs, mires and fens, all associated with wetlands, coastal and agricultural ecosystems. The main threats to habitats identified are certain agricultural practices (including modification of cultivation practices, over-grazing, abandonment of pastoral systems, fertilisation and pesticides), and human-induced modifications of natural conditions, mostly related to hydrological changes.

For **birds,** the proportion of bird species assessments with a 'secure' status remains the same as in 2004 (52%) and 8.5% are non-secure but improving. Therefore, approximately 61 % of species are in the target condition. This means that a further 17 % of species need to become secure or improving by 2020 to reach the birds' component of Target 1 (i.e. 78 %).

Box 4: Farmland and woodland birds

Some bird species appear to be benefiting from targeted conservation measures aimed at adapting land-use practices, especially in Natura 2000 sites. For instance, agri-environmental and land management programmes successfully implemented in Spain, Portugal, Austria, Hungary and Germany have helped the recovery of the Great Bustard *Otis tarda,* a species dependent on open landscapes (grassland, steppes and undisturbed cultivated areas), which is declining elsewhere in Europe. Despite suffering a marked population decline in some EU countries, the White-backed Woodpecker *Dendrocopos leucotos,* which is heavily dependent on old and dead deciduous trees, has increased in Finland, where it has benefited from changing forest management practices in Natura 2000 sites. However, among the 17% of the bird species, which are still threatened and the 15% which are near threatened, declining, or depleted, are many common farmland species like the Skylark, *Alauda arvensis* and the Black Tailed Godwit, *Limosa limosa.*

In conclusion, the overall trend for habitats and species is that those that are already favourable/secure remain stable or are improving further. A small proportion of unfavourable/non-secure assessments is improving, and a larger proportion of those previously determined as unfavourable continues to deteriorate.

Box 5: Marine habitats and species – knowledge is growing, but still many gaps

Due to the complexity of working in the marine environment and the relative lack of data as compared to terrestrial species and habitats, conservation status and trends vary considerably and assessment results are less conclusive. The main pressures are the impact of fisheries by-catch and marine pollution. Measures aimed at better and more sensitive management of sites and prohibiting damaging activities are being developed and can translate into rapid improvements. In Ireland for example, the recent positive trend in

conservation status of the alga Maerl *Lithothamnium coralloides* is linked to the protection regime of the Habitats Directive. Some threatened seabirds have also benefited from conservation measures in the Natura network: The Roseate Tern *Sterna dougalli* population has significantly increased in the EU thanks to the protection and management of breeding sites, including the control of predators.

PROGRESS IN IMPLEMENTING ACTIONS

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.

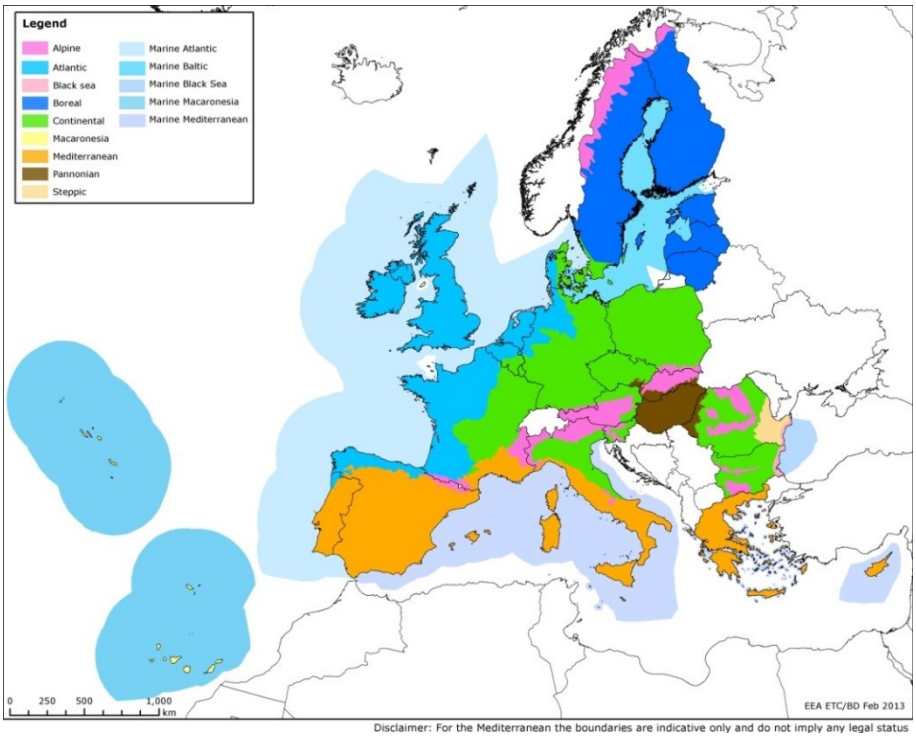
Within the legal framework provided by the Birds and Habitats Directives,[28] the EU has built up a vast network of more than 27 000 protected areas throughout its Member States, encompassing nine biogeographical regions and five marine regions. Known as **Natura 2000**, the network covers an area of 1.292.000 km^2, which is 18% of the EU's land area and equivalent to the combined area of France, Germany and Italy. As concerns the designation of Natura 2000 sites in Europe, the establishment of Natura 2000 on land is largely complete and since 2011the marine surface area covered by Natura 2000 has increased by 50%, covering more than 4% of European seas.[29]

EU Biogeographical regions

To support the implementation of the Habitats Directive, the European Union is divided into nine terrestrial and five marine biogeographic regions sharing similar ecological conditions. The nine terrestrial regions are the Alpine, Atlantic, Black Sea, Boreal, Continental, Macaronesian, Mediterranean, Pannonian, Steppic regions; the five marine ones are the Marine Atlantic, Marine Baltic, Marine Black Sea, Marine Macaronesian and Marine Mediterranean regions.

[28] http://ec.europa.eu/environment/nature/legislation/index_en.htm.
[29] See http://www.eea.europa.eu/publications/protected-areas-in-europe-2012, page 112, Table 7.1.

Figure 11 – Biogeographical regions in the EU



During the last months of 2014 alone, several Member States submitted substantial updates to their marine Natura 2000 network: Spain proposed 14 new marine sites of Community importance (SCIs) and designated 45 new marine Special Protection Areas (SPAs), altogether covering an area of more than 60.000 km^2; Ireland has proposed 6 new marine SCIs, covering 3.300 km^2; Bulgaria has proposed 3 new marine SCIs covering 1.800 km^2; and Lithuania added 1 marine SPA, covering 320 km^2. However, the network remains substantially incomplete in most marine regions, especially offshore.

Most member States are behind schedule in designating within 6 years under national law their Sites of Community Importance (SCI) as Special Areas of Conservation (SAC) and establishing management plans or equivalent instruments with clear conservation and restoration objectives and measures (see also action 1c). This step is crucial in order to put in place all necessary measures and ensure full legal protection. Important delays and gaps occurred in many Member States and several had not designated any SACs by the end of 2012[30]. An overview of the state of play for Natura 2000 site designations under the Birds[31] and Habitats[32] Directives, in terms of area and number of sites, is provided in the barometer, which provides a breakdown by Member State and differentiates between terrestrial and marine sites. Updated information

[30] EEA Technical report on State of Nature in the EU, May 2015 http://www.eea.europa.eu/publications/state-of-nature-in-the-eu

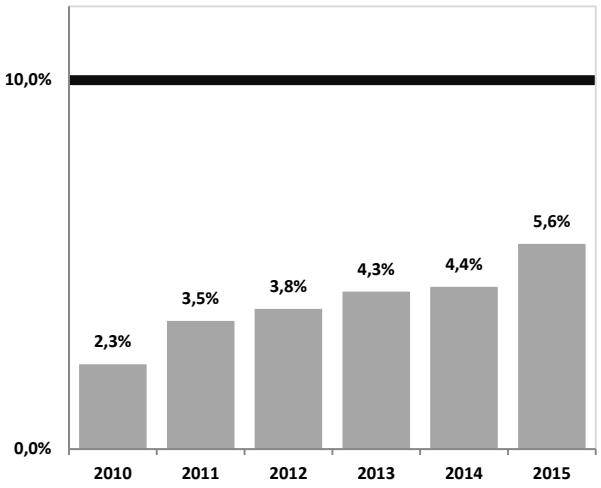
[31] Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (codified version replacing Directive 79/409/EEC), OJ L 20, 26.1.2010.

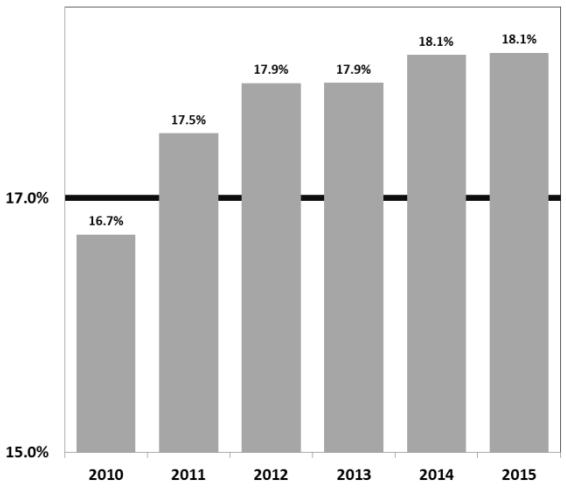
[32] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. OJ L 206, 22.7.1992.

about remaining insufficiencies for each Member State, as regards sites to be proposed under the Habitats Directive, can be found online[33].

Figure 12 - Progress in designation of Natura 2000 sites (terrestrial and marine) since 2010 and compared to global Aichi Target 11 of at least 17% of terrestrial (and inland water) areas and 10% of marine areas (and coastal) are conserved by 2020 (EC, May 2015)

Marine (and coastal) Natura 2000 sites	Terrestrial (and freshwater) Natura 2000 sites





The focus is now turning to the development and implementation of species action plans and Natura 2000 site management plans (see action 1c).

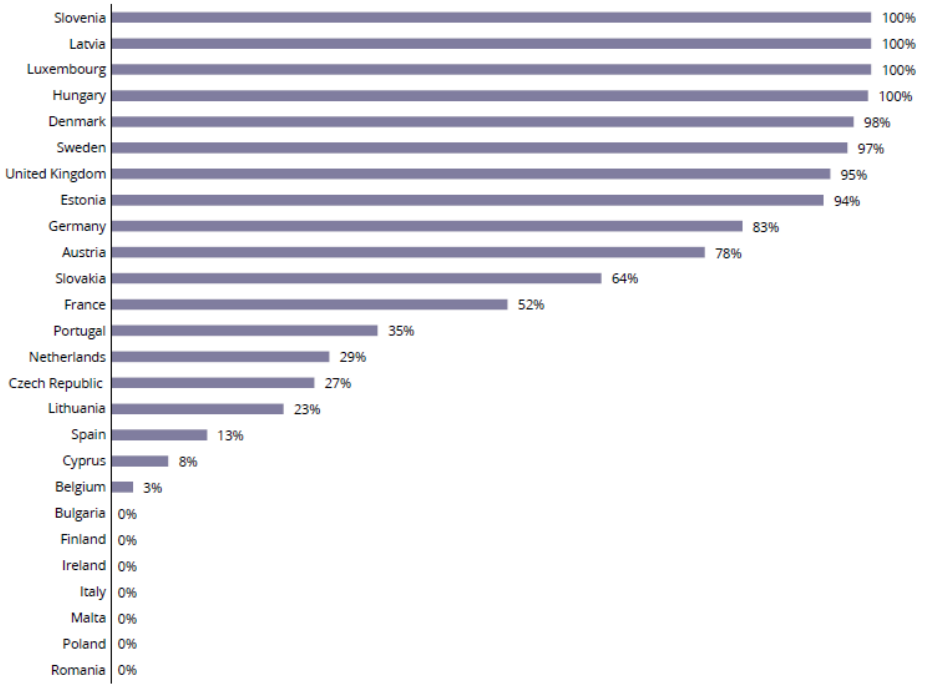
1b) Member States and the Commission will further integrate species and habitats protection and management requirements into key land and water use policies, both within and beyond Natura 2000 areas.

At EU level, species action plans have been developed for species covered by the Habitats Directive as well as under the Bird Directive for a number of bird species (including updating older action plans). Action to tackle illegal killing of birds at EU level has been enhanced, namely by developing an EU roadmap for eliminating illegal practices. Since 2011, the Commission has also developed additional guidance on integrating species and habitats protection and management requirements into key sectors (see action 3b).

The integration of nature protection considerations in the Common Fisheries Policy (CFP) and the Common Agricultural Policy (CAP) was strengthened through their reform (see also Targets 3 and 4).

[33] http://ec.europa.eu/environment/nature/natura2000/barometer/index_en.htm

Figure 13 - Illustrating the proportion (%) of SCIs that have been designated as SACs, by Member State[34]



Notes: Finland and Romania did not report the total number of SACs. Greece did not provide an Article 17 report within the agreed deadline for the production of this report.

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.

Management plans

Although not obligatory under the nature directives, management plans are strongly recommended by the European Commission, and are even obligatory under national legislation in some countries (e.g. Denmark, France, Netherlands and a number of German Länder). In 2012, the total number of sites with plans under the Habitats Directive for the EU-27 was 9271, with an additional 4229 plans under preparation. For birds, about 30% of Special Protection Areas have management plans with a further 25% in preparation. Overall, in 2012 across the entire Natura 2000 network, 58% of sites either had management plans or such plans were being developed. At Member State level the situation is diverse ranging from Slovenia with 100% of sites under comprehensive management plans to others that have no plans at all[35].

[34] EEA Technical report on State of Nature in the EU, May 2015 http://www.eea.europa.eu/publications/state-of-nature-in-the-eu

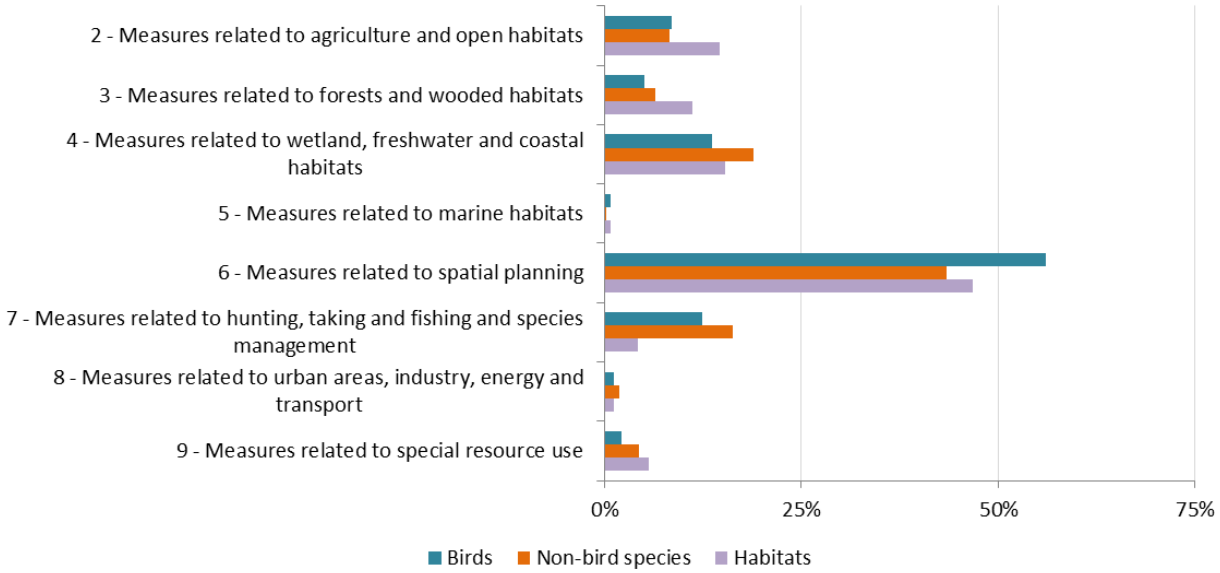
[35] EEA Technical report on State of Nature in the EU, May 2015 http://www.eea.europa.eu/publications/state-of-nature-in-the-eu

Conservation and restoration measures

As the responsibility for managing Natura 2000 sites lies with the countries and regions concerned, Member States are required to draw up the necessary conservation measures designed for each site, including restoration measures. Member States were asked to report on conservation measures implemented for each species and habitat type. Measures related to 'Spatial planning' (such as establish protected areas, legal protection of habitats and species), dominate the reported conservation measures. Further significant categories include measures related to wetland, freshwater and coastal habitats (e.g. "Restoring/improving the hydrological regime"), agriculture (e.g. "maintaining grasslands and other open habitats") as well as forests and wooded habitats.

Member States were also asked in their reporting to evaluate the impact of the conservation measures. Results suggest that conservation measures, which in some sites have only started recently, might achieve their goals only in the middle to long term.

Figure 14 - Conservation measures taken for habitats and species reported by MS as highly important[36]



Source: EEA

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**.**

[36] EEA Technical report on State of Nature in the EU, May 2015 http://www.eea.europa.eu/publications/state-of-nature-in-the-eu

Major progress has been made in establishing the Natura 2000 Biogeographical Process in 2011, which aims at improving and strengthening the implementation of Natura 2000 through enhanced cooperation and networking on practical habitat management and restoration. Seminars have been organised from 2012 onwards in the Boreal, Atlantic, Alpine and Mediterranean regions, as well as the organisation of a Marine seminar in 2015. Future development includes the launch of the process in the Continental, Pannonian, Black Sea, Steppic and Macaronesian regions, and follow-up activities in the Boreal, Atlantic, Alpine and Mediterranean regions in 2015, as well as working on establishing biogeographical level conservation and restoration objectives as well as on favourable reference values. Detailed information on all events is available on the Natura 2000 Communication Platform: http://ec.europa.eu/environment/nature/natura2000/platform/index_en.htm.

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.

In response to this commitment the Commission issued a staff working paper in December 2011 "Financing Natura 2000: Delivering benefits for nature and people"[37] which presented an evaluation of the effectiveness of the so called "integration approach"[38] to EU co-financing of Natura 2000 as well as an early overview of the opportunities for financing nature protection in the next multi-annual financial framework (MFF) 2014-2020, such as Partnership Agreements and Operational Programmes. The paper provided as well an updated estimate of Natura 2000 costs and underlined the benefits offered by the network. The document also stressed the importance of developing prioritised action frameworks (PAFs) pursuant to Article 8 of the Habitats Directive as tools for streamlined and comprehensive planning of investments necessary for management of the network.

In 2012 the Commission developed a format and methodology for the PAFs and invited the Member States to submit their PAFs in time to influence the process of adopting the programmes for EU funds. The large majority of Member States submitted their PAFs in 2013 and early 2014. The PAFs have been instrumental in ensuring the best possible integration of investment in nature in the programmes for relevant EU funds. On the national level, the PAFs also contributed to integration of Natura 2000 into planning of other policies (agriculture, forestry, fisheries, cohesion etc.) and to a wider discussion, with different stakeholders, on the choice of priorities and measures as well as the means of their implementation and financing.

[37] SEC (2011) 1573 final.
[38] Integration approach is understood as a method of financing set out in the 2004 "Communication on financing Natura 2000" whereby financing of the network on the EU level is integrated into different sectoral EU funds as opposed to setting up a dedicated fund.

In order to help the Member States to better understand the opportunities for financing nature protection in the next MFF the Commission published the "Guidance handbook on financing Natura 2000"[39]. The handbook presents all relevant EU funds and their potential for financing nature and biodiversity together with examples of best practice in this area. In addition, the Commission together with the national authorities organised financing seminars in 24 Member States. The seminars have been successful in identifying the most important needs for financing nature protection and discussing ways of allocating resources to this purpose.

As regards resource allocated to financing Natura 2000 in individual EU funding streams it has to be noted that the majority of the EU funds operate according to a programming process with shared management of funds between the EU and the Member States. This means that decisions on funding priorities are taken at national and regional level in discussion with the European Commission. Then the Commission entrusts the Member States with implementing programmes at national or regional levels following certain rules.. Only the LIFE programme is directly managed by the Commission. From LIFE+ 2010-2013, co-financing for nature and biodiversity has increased to about € 548 million.

With regard to funds managed under the shared management principle by the EU the Member States, as of 16 February 2015 266 cohesion policy (out of 387 operational programmes - OPs) have been adopted by the Commission. As the programming process was ongoing at the time of drafting this report, it was not possible to precisely indicate how much funding has been allocated to nature and biodiversity. However, the draft OPs and those already adopted by the Commission indicate that the allocations for categories of expenditure related to nature and biodiversity have increased.

As regards rural development programmes (RDPs) developed to implement the priorities of the European Agricultural Fund for Rural Development (EAFRD) as of 13 February 2015 the Commission had approved 27 out of 118 RDPs. Restoring, preserving and enhancing ecosystems related to agriculture and forestry, with a focus on biodiversity, including Natura 2000 areas is one of the priorities of the RDPs (priority no. 4). Member States are also required to reserve a minimum of 30 % of the total contribution from the EAFRD to each RDP for measures supporting investments related to the environment and climate. The most relevant measures from the nature perspective are agri-environment payments and Natura 2000 payments. Payments to areas facing natural constraints and investments in physical assets are also generally relevant for financing nature protection. Due to the fact that not all RDPs have been adopted yet and bearing in mind that the methodology for calculation of the contribution of individual measures to preserving biodiversity is still

[39] http://ec.europa.eu/environment/nature/natura2000/financing/index_en.htm#guidancehandbook

being discussed between relevant Commission services it is not possible to provide specific figures on allocations from the EAFRD to Natura 2000.

Programming of marine and fisheries OPs is not advanced enough to provide estimations on allocations at this stage. However, the Regulation establishing the European Maritime and Fisheries Fund (EMFF) stipulates that where appropriate the specific needs of Natura 2000 areas should be integrated into the EMFF OPs. According to the Regulation, dedicated support in accordance with PAFs is also envisaged for the management, restoration and monitoring of coastal and marine Natura 2000 sites.

With regard to the Programme for the Environment and Climate Action LIFE, which is the only relevant fund under the direct Commission management, the multiannual work programme for 2014-17 was agreed in February 2014 and is now operational. The allocation for the priority area "Nature and Biodiversity" during this period was agreed at approximately 611 million EUR (whereas the commitment for the whole period 2014-2020 is approximately 1.27 billion EUR). A new category of projects, i.e. "integrated projects" have been included in the programme pursuant to the LIFE 2014-2020 Regulation. These projects will be carried out on a larger geographical scale and will be aimed at implementation of plans and programmes. In the priority area "Nature and Biodiversity", PAFs are considered as relevant plans to frame Integrated Projects to be implemented.

3a) The Commission, together with Member States, will develop and launch a major communication campaign on Natura 2000 by 2013.

A 2010 Eurobarometer survey showed that citizens' awareness of the threats and challenges for biodiversity and Natura 2000 was not very high. According to the 2013 EU Flash Eurobarometer on Attitudes towards biodiversity, more than two thirds (74 %) of EU citizens had heard of biodiversity but less than half knew the meaning of the word. This, however, is still 10 % more than in 2007.[40] This shows that while EU citizens are gradually becoming more aware, greater communication efforts and activities focused on biodiversity are needed. In 2015, a Eurobarometer on biodiversity will provide an overview of current public attitudes to biodiversity.

[40] http://ec.europa.eu/public_opinion/flash/fl_379_sum_en.pdf.

Figure 15- Familiarity with the term biodiversity[41]

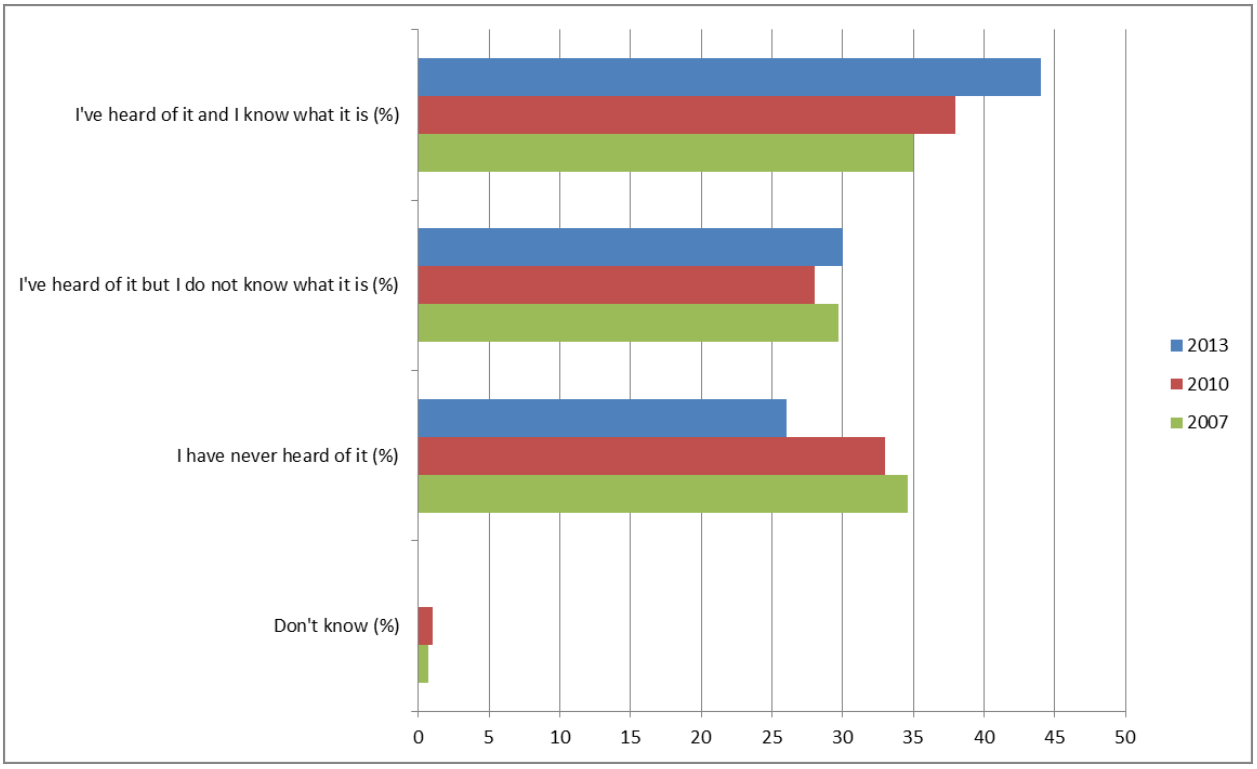
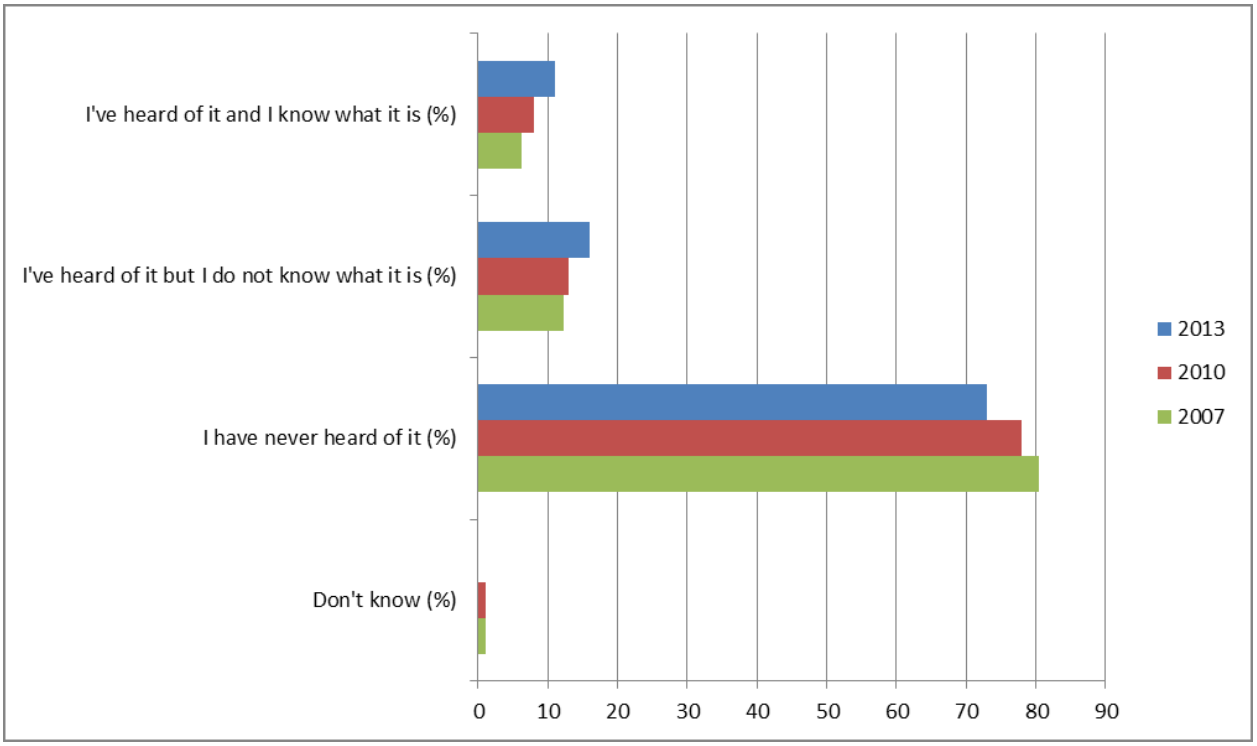


Figure 16 - Awareness of the Natura 2000 Network



Source: EEA (2015) Public awareness (SEBI026) (http://www.eea.europa.eu/data-and-maps/indicators/public-awareness/public-awareness-assessment-published-may-1)

[41] http://www.eea.europa.eu/data-and-maps/indicators/public-awareness/public-awareness-assessment-published-may-1

In order to enhance public awareness about biodiversity and Natura 2000, the European Commission has launched a new award designed to celebrate and promote best practices for nature conservation in Europe. The European Natura 2000 Award[42] aims to bring the success of the Natura 2000 network to the public's attention and to demonstrate its importance for protecting biodiversity across Europe. The initiative rewards excellence in the management and promotion of the network and its objectives. Natura 2000 works to assure the long-term survival of Europe's most valuable and threatened species and habitats, and is the centrepiece of the EU's nature and biodiversity policy. In its first year, 2014, the Natura 2000 Award attracted considerable interest from Natura 2000 site managers and others working with the Natura 2000 network, with 163 applications received from 26 Member States, distributed across the 5 Award categories (conservation, communication, socio economic benefits, reconciling interests, networking and cross-border cooperation). In 2015, an additional category, the "European Citizens' Award" was added, for which the public was able to vote directly online.

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.

A series of guidance documents promoting integration of Natura 2000 in different sectors have been prepared including Farming for Natura 2000, Aquaculture and Natura 2000, Inland waterway transport and Natura 2000, the implementation of the Birds and Habitats Directives in estuaries and coastal zones, Integrating biodiversity and nature into port development, Wind energy developments and Natura 2000, Non-energy mineral extraction and Natura 2000 and Climate change and Natura 2000[43] and on managing fisheries impacts within Natura 2000 sites[44]. The Commission is also in the process of finalising sector-specific guidance on forests, on energy transmission facilities and on hydropower, which are all expected to be finalised during 2015. All these guidance documents were or are developed in cooperation with representatives of the sectors concerned. An update of the Article 6 interpretation guidance is also being prepared.

An EU Platform on Coexistence between People and Large Carnivores[45] has been established in 2014 to support a constructive dialogue between stakeholders and promote a peaceful coexistence of human activity with large carnivores in Europe. As part of the EU Large Carnivore Initiative, a set of documents describing

[42] http://ec.europa.eu/environment/nature/natura2000/awards/index_en.htm
[43] http://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm.
[44] http://ec.europa.eu/environment/nature/natura2000/marine/index_en.htm
[45] http://ec.europa.eu/environment/nature/conservation/species/carnivores/coexistence_platform.htm

key actions for four species of large carnivores in Europe, including at the population level, have been finalised and published on the large carnivores' webpage of DG ENV[46].

A set of pilot actions on large carnivores has also been carried out and will be available on the large carnivores' webpage of DG ENV[47].

The Commission is also in the process of developing sector-specific guidance in the following policy areas: non-energy extractive industries, wind farm development, ports and estuaries, inland waterway transport, aquaculture. The overall objective of these guidance documents is to establish a better understanding of how to apply the Article 6 procedure to developments plans and projects in each of these sectors and to provide further advice on how to carry out an Appropriate Assessment in particular. A Guidance document promoting integration of Natura 2000 in agriculture "Farming for Natura 2000" (2014) has been prepared and another one on forests is currently being finalised.

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

Specific training sessions for judges and prosecutors have been organised with EU support on key provisions of the nature legislation.
Coordinated action at EU level has also been launched, in cooperation with the Council of Europe, to address illegal trapping, killing and trade of birds, which also specifies actions on monitoring and data collection[48].

Meanwhile, the Commission has continued to pursue cases of non-compliance with EU nature legislation, including through infringement procedures, with a focus on systemic failures. These include the insufficient designation of SCIs and SPAs (especially in the marine environment), the designation of SACs, as well as the non-respect of provisions in the legislation regarding the species protection, the non-deterioration of Natura 2000 sites and the permitting procedures for plans and projects which might negatively affect the integrity of the sites.

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

[46] http://ec.europa.eu/environment/nature/conservation/species/carnivores/pdf/key_actions_large_carnivores_2015.pdf
[47] http://ec.europa.eu/environment/nature/conservation/species/carnivores/promoting_dialogue.htm
[48] http://ec.europa.eu/environment/nature/conservation/wildbirds/illegal_killing.htm

For the first time, reporting under Article 17 of the Habitats Directive and Article 12 of the Birds Directive have been streamlined and aligned. Article 12 requires Member States to report about the progress made with the implementation of the Birds Directive. In 2011, the Commission in agreement with Member States has revised the reporting procedure and frequency in order to focus the reporting obligations on data that inform about the status and trend of bird populations[4950].

After receipt of the national reports, the EEA and its Topic Centre on Biological Diversity produced national summaries with overview statistics for each Member State, a web tool to view easily the assessments of Member States as well as the EU-biogeographic assessments by species and habitats under Art.17.[51] , and a paper setting out the method on how to assess progress towards Target 1 of the EU 2020 Biodiversity Strategy. The final report on the State of Nature in the EU and related data are available on the web[52] for further analysis.

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.

The Biodiversity Information System for Europe (BISE)[53] is a single entry point for published data and information supporting the implementation and monitoring of the EU 2020 Biodiversity Strategy. Bringing together data on biodiversity and ecosystem services, it links to related policies, environmental data centres, assessments and research findings from various sources. It is being developed to strengthen the knowledge base and to support decision-making on biodiversity. BISE has integrated within its structure the European Biodiversity Clearing House Mechanism in support of the Convention on Biological Diversity. BISE is a partnership between the European Commission and the European Environment Agency. BISE also contributes to the further development of monitoring of progress and streamlining of reporting at international level. For instance, the European Environment Agency (EEA) has developed a target crosslinking tool that allows countries to interconnect national, EU and global biodiversity targets and indicators to facilitate reporting. This tool has been made available to its 28 Member States and 28 African countries.

Within BISE, the Biodiversity data centre (BDC) [54] provides access to data and information on species, habitat types and sites of interest in Europe and to related products for biodiversity

[49] http://ec.europa.eu/environment/nature/knowledge/rep_birds/index_en.htm
[50] http://bd.eionet.europa.eu/activities/Reporting/Article_12
[51] http://art17.eionet.europa.eu/article17/reports2012/ and Art.12 tool http://bd.eionet.europa.eu/article12/
[52] http://www.eea.europa.eu/highlights/state-of-nature-in-the
[53] http://biodiversity.europa.eu/
[54] http://www.eea.europa.eu/themes/biodiversity/dc

indicators and assessments. Priority is given to policy-relevant data and information for European and national institutions, professionals, researchers and the public. This includes the data supporting the assessments from Article 12 and Article 17 reporting under the nature directives, which is a unique dataset in the world. Also with the assistance of the European Environment Agency, the European Commission has developed a public Natura 2000 viewer which makes it possible to explore Natura 2000 sites in every part of the EU at the press of a button. The public viewer is an interactive and user-friendly tool that allows the user to travel seamlessly through the Natura 2000 sites over different types of backgrounds (street maps, satellite imagery, bio-geographical regions, Corine Land Cover, etc.) and to quickly locate sites and related information on species and habitats of interest. The tool is intended to help raise awareness of Natura 2000 amongst the general public as well as provide a useful instrument for developers, land use planners, landowners, government authorities, NGOs, researchers and educationalists, amongst others.

EUROPEAN
COMMISSION

Brussels, 2.10.2015
SWD(2015) 187 final

PART 2/3

COMMISSION STAFF WORKING DOCUMENT

EU ASSESSMENT OF PROGRESS IN IMPLEMENTING THE EU BIODIVERSITY STRATEGY TO 2020

Accompanying the document

Report from the Commission to the European Parliament and the Council

The Mid-Term Review of the EU Biodiversity Strategy to 2020

{COM(2015) 478 final}

MID-TERM REVIEW OF THE EU BIODIVERSITY STRATEGY TO 2020

EU ASSESSMENT OF PROGRESS IN IMPLEMENTING THE EU BIODIVERSITY STRATEGY TO 2020

PART 2/3

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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.

Socio-economic benefits of reaching this target: *Besides contributing to the achievement of the environmental and ecological quality objectives set by EU legislation, the 15% restoration target and deployment of green infrastructure contribute to a range of social benefits and economic benefits linked to improved air and water quality, flood control, noise reduction, recreation and social opportunities, and health. For example, the restoration of peat bogs in the framework of the Sustainable Catchment Management Programme in the North West of England is estimated to bring about savings of around £2 million per year in water supply and purification costs[1]. In Germany, yearly sales figures related to green roofs installation are estimated at 254 million EUR, with a growing trend[2]. A study in an Amsterdam district estimated that the annual benefits from creating urban green infrastructure could reach 400 million EUR per 10 million inhabitants, in the form of avoided health care and sick leave costs[3]. Restoring and re-wetting upland blanket bog of 3000 ha in the UK could deliver net benefits of GBP 63mio over a 25 year period, taking into account benefits from increased carbon sequestration, improvements in wildlife and reductions in water treatment costs, with a benefit-cost ration of 3:1. The UK environment agency recently undertook a 450 ha managed realignment project at Medmerry in the south coast. The project created 183 ha of saltmarsh and large areas of extra transitional, newly created habitat. The project saves on recurring coastal protection expenditure and is likely to have helped avoid considerable damage to the surrounding area during the 2013/2014 winter storms. The project has estimated benefits of over GBP 90m compared with project costs of GBP 28m. A main drinking water source of Vienna is purified only by the surrounding 32.000 hectares of forests and highlands of the Schneealpe mountains, with no need for a water treatment plant. In the UK, the creation of the National Forest increased the number of local jobs by 4.1% and local regeneration using green infrastructure attracted £96 million of investment. The Malmö urban regeneration initiative in Sweden decreased unemployment from 30 to 6% and reduced the turnover of tenancies by 50%.The Emscher Valley Restoration Project in Germany has created several thousand jobs, considerably improved the image of the region and promoted social cohesion. Belgium's first national park, the 'Hoge Kempen National Park', created some 400 jobs and stimulated private investment in tourism in this*

[1] Case Study: Peat bogs. Valuing the Benefits of Biodiversity, Economics and Funding SIG (2007) http://webarchive.nationalarchives.gov.uk/20110303145213/http:/ukbap.org.uk/library/EconomicBenefitsOfBiodiversityJun07.pdf

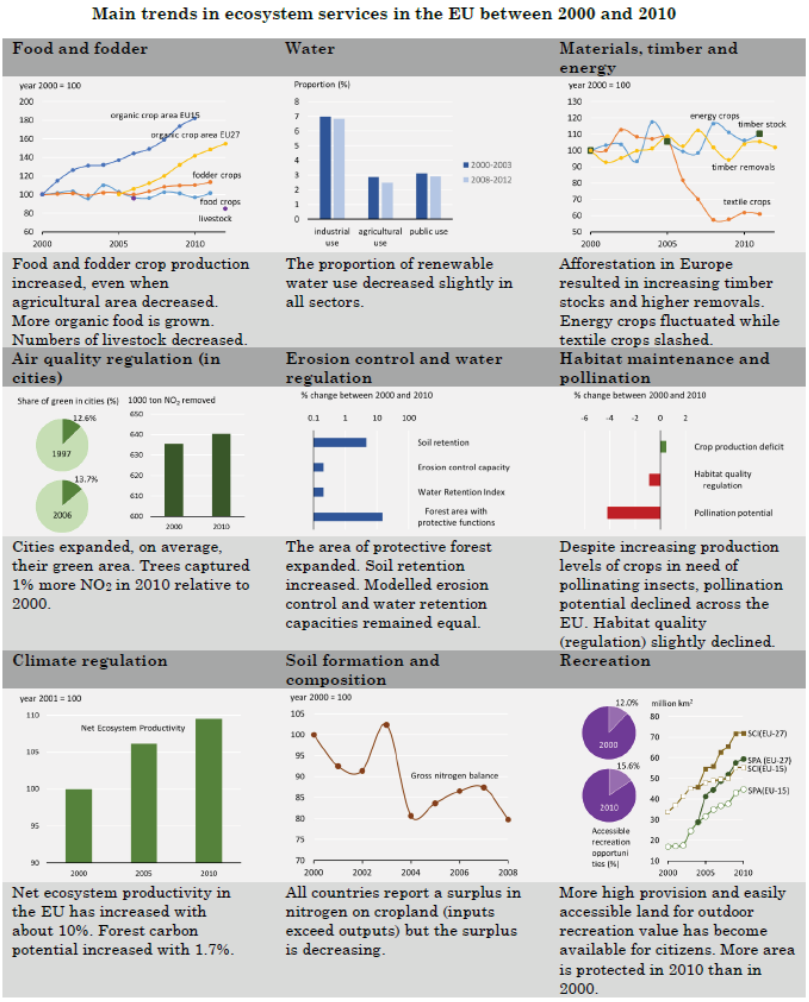
[2] European Federation of Green Roofs and Walls -- EFB 2015 (unpublished)

[3] "Green, healthy and productive: The Economics of Ecosystems & Biodiversity (TEEB NL): Green space and health", KPMG, May 2012

historically de-industrialised region. Upscaling these benefits requires a strategic approach at EU level, a supportive, enabling environment and a framework within which local, municipal, regional, national and EU scale actions can be mutually supportive and coherent.

The EU 2010 Biodiversity Baseline reported that for the period 1950-2010, the majority of ecosystem services showed either a degraded or mixed (i.e. degraded in some regions, enhanced in other) status across Europe. However, there were some positive exceptions such as timber production and climate regulation in forests. A recent analysis conducted by the Joint Research Centre[4] (JRC) confirms the increasing trends between 2000 and 2010 for some provisioning services and decreasing for services directly related to biodiversity. For instance, the increasing extent of forest area has resulted in positive influences on erosion control, carbon storage, water retention, air quality regulation and recreation. But, pollination is the most degraded for woodland and forest, heathland and shrub, and grasslands.

Figure 1 – Main trends in ecosystem services in the EU between 2000 and 2010



[4] https://www.researchgate.net/publication/274256807_Mapping_and_Assessment_of_Ecosystems_and_their_Services_Trends_in_ecosystems_and_ecosystem_services_in_the_European_Union_between_2000_and_2010

Concerning the restoration target, the European Environment Agency 'State and Outlook 2015' reports that despite cuts in air emissions, ecosystems still suffer from eutrophication, acidification and ozone depletion. Progress to policy targets has been mixed in meeting the EU's 2010 interim environmental objectives for eutrophication and acidification. In recent decades there have been significant improvements in reducing ecosystem exposure to excess levels of acidification, and the situation is predicted to improve further over the coming 20 years (EEA, 2013h). However, there has not been the same degree of improvement regarding eutrophication. Most of continental Europe experiences exceedances of critical loads (the upper limit that an ecosystem such as a lake or forest can tolerate without damaging its structure or function) for eutrophication. It is estimated that around 63% of European ecosystem areas and 73% of the area covered by the Natura 2000 network of protected areas were exposed to air pollution levels that exceeded eutrophication limits in 2010. The projections for 2020 indicate exposure to eutrophication will still be widespread.

Europe's waters are much cleaner than they were 25 years ago, due to investment in sewage systems to reduce pollution from urban wastewater treatment. Nevertheless, challenges remain. More than 40% of rivers and coastal water bodies are affected by diffuse pollution from agriculture, while between 20% and 25% are subject to point source pollution, for example, from industrial facilities, sewage systems and wastewater treatment plants. Although the Urban Waste Water Treatment Directive and the Nitrates Directive continue to deliver pollution control, diffuse nitrogen pollution remains problematic.

The trends and outlook for marine and coastal biodiversity indicate that achieving the target of good environmental status by 2020 remains a significant challenge. Marine and coastal ecosystems and biodiversity are under pressure throughout Europe, and their status is of concern. The target of achieving good environmental status by 2020 is at risk due to overfishing, sea floor damage, pollution by nutrient enrichment and contaminants (including marine litter and underwater noise), introduction of invasive alien species, and the acidification of Europe's seas[5].

As evidenced by State and Outlook 2015 Report, the ability of soil to deliver ecosystem services such as fertility, water and carbon storage is under increasing pressure. In withdrawing the proposal for a Soil Framework Directive in 2014, the Commission indicated that it remains committed to the objective of the protection of soil and will examine options on how to best achieve this.

In rural areas increasing recourse to more intensive management practices has been a significant pressure on biodiversity of many decades and this continues to be the case in many of the EU 12. Europe's rich

[5] The European Environment State and Outlook 2015; Synthesis Report http://www.eea.europa.eu/soer-2015/synthesis/report/3-naturalcapital

biodiversity has also developed in association with a diversity of traditional management practices. Land abandonment in less productive marginal areas means an end to these traditional ways of farming and this is having a significant impact on many species and habitats of Community interest.

If ecosystems become too small or too isolated, they will not be able to deliver their full range of services anymore. However, 30% of the EU's land is highly fragmented affecting the connectivity and health of ecosystems and their ability to provide services as well as viable habitats for species (SOER 2015). This trend is continuing in terrestrial ecosystems due to urban sprawl and land use intensification (in particular in agriculture). While freshwater ecosystems only cover about 5% of EU28 surface, they hold a higher number of species per unit area than land or sea, and provide key important ecosystem services. They also remain fragmented, even if some initiatives restore river continuity along important river stretches with the help of EU LIFE and EMFF programs.

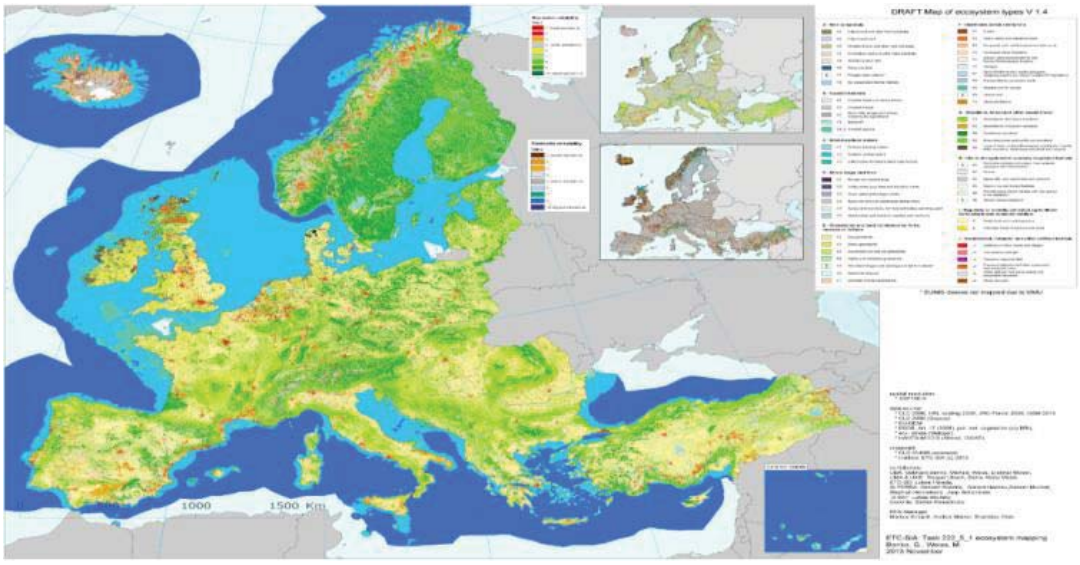
PROGRESS IN IMPLEMENTING ACTIONS

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.

All Member States are undertaking work on 'Mapping and assessment of ecosystems and their services'[6] — with the assistance of the European Commission and the European Environment Agency. The first deliverables at EU and MS level are expected in 2015. Under Horizon 2020, a specific coordination and support action has been launched in 2015 to develop and apply a consistent methodology across Member States. It is an essential part of the EU strategy and a necessary condition for the successful implementation of the strategy, to make information on ecosystems and their services an integral part of planning and development processes and decisions. High quality and consistent information on the condition of ecosystems and the services they provide will also be highly relevant for the future development and implementation of related policies such as regional policy, agriculture, fisheries, climate change, and disaster risk reduction and management. A first report published in April 2013[7] provided an analytical framework for mapping and assessment of ecosystems and their services in Europe. The second mapping and assessment report was published in March 2014[8]. It proposes indicators that can be used at European and Member State level to map and assess biodiversity, ecosystem condition and ecosystem services according to the Common International Classification of Ecosystem Services (CICES v4.3).[9] In 2014, the first map of European ecosystems was published by the European Environment Agency. A first report[10] on European ecosystem assessment — concept, data, and implementation was published in June 2015. It contains an inventory of the best available data to be used.

[6] http://ec.europa.eu/environment/nature/knowledge/ecosystem_assessment/index_en.htm.
[7] http://ec.europa.eu/environment/nature/knowledge/ecosystem_assessment/pdf/MAESWorkingPaper2013.pdf
[8] http://ec.europa.eu/environment/nature/knowledge/ecosystem_assessment/pdf/2ndMAESWorkingPaper.pdf
[9] http://cices.eu/.
[10] European ecosystem assessment — concept, data, and implementation
http://www.eea.europa.eu/publications/european-ecosystem-assessment

Figure 2 - Map of European ecosystem types (EEA, 2014)



The policy report 'Mapping of Assessment of Ecosystems and their Services' from the Joint Research Centre (JRC, 2015) presents an analysis of the trends in the spatial extent of ecosystems and in the supply and use of ecosystem services at the European scale between 2000 and 2010. The main trends in provisioning, regulating and maintenance, and cultural ecosystem services were assessed using a set of 30 indicators assorted according to the CICES classification. According to the report, urban land and forest ecosystems are increasing in area while cropland and grassland are decreasing. There are some positive trends in several ecosystem services which are driven by a complex interaction of changes in agricultural production, afforestation, higher ecosystem productivity and increased nature protection. Many provisioning services show increasing trends. Increased forest extent results in positive influence on regulation services (i.e. erosion control, carbon storage, water retention, air quality regulation and recreation). Protected nature has increased since 2010 but pollination and habitat quality are worsening. The table below illustrates the main trends in ecosystem services in the EU between 2000 and 2010.

Work in 2015 is starting to focus more directly on valuing ecosystems and their services, and on integrating these values in reporting and accounting systems.

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

In order to support the development of the prioritization frameworks as foreseen in action 6a, the Commission has worked with Member States to develop a common understanding of what needs to be done and to promote good practice in the way that restoration priorities are identified. In relation to the 15% restoration target, it is acknowledged i) that restoration is a process rather than a final destination meaning that any significant improvement in the ecological condition of a degraded site should be regarded as a contribution to the target; ii) that restoration objectives should also take account of the use that has been

made of the land e.g. ecological restoration of farmland does not require a change in land use; and iii) the ecological condition of even the most degraded areas can be improved which means that no locations are to be written-off as un-restorable. The majority of Member States have taken the line that priorities for restoration should be decided at a national level, that co-ordination at the level of the EU was not required and that burden sharing across the Member States was not necessary. Finally, it was recognized that restoration work undertaken in the context of existing EU legislation (e.g. Habitats and Birds Directives, Water Framework Directive, Marine Strategy Framework Directive, National Emissions Ceiling Directive) and policies would be taken into account in assessing progress towards the 15% restoration target. Further information concerning the work that was carried out on the restoration prioritization frameworks is online[11]. Progress to achieve the 15% restoration target is therefore being evaluated on the basis of a mix of information such as the improved status of water bodies across the EU, as reported under the Water Framework Directive, the improved status of habitats under the Habitat Directive (see further explanation provided in relation to Target 1).

Box 1: Restoration under the EU environmental legislation

With regard to restoration, the EU has a broad range of legislation and policies setting out environmental/ecological quality objectives the achievement of which in many cases requires restoration work to be carried out. Specifically with regard to the 15% restoration target, the EU recognizes the potential contribution of restoration to a range of economic and social as well as environmental objectives and continues to work towards a systematic approach for the identification of restoration priorities at EU, national and sub-national levels[12].

The Water Policy

The Water Framework Directive's objective of good status is necessary to ensure long term availability of sufficient water of good quality. Achieving good status for all water bodies will allow aquatic ecosystems to recover and to deliver the ecosystem services that are necessary to support life and economic activity that depend on water.

The Water Framework Directive and daughter Directives have contributed to improving water protection in the EU. A limited improvement in aquatic ecosystem health is planned by Member States as a result of the first cycle of River Basin Management Plans, with 53% of surface water bodies expected to achieve good status in 2015, up from 43% in 2009. Expressed in terms that are more or less equivalent to the Target 2, 15% restoration target, it would appear that in relation to water bodies covered under the WFD an 18% restoration level has already been achieved.. The actual achievements will be reported to the Commission in

[11] http://ec.europa.eu/environment/nature/biodiversity/comm2006/pdf/2020/RPF.pdf

[12] Draft Submission by the EU and its Member States in reply to Notification 2015-014 of 9 February 2015 on commitments to reduce habitat loss and on ecosystem restoration (Aichi Biodiversity Targets 5 and 15)

March 2016 together with the first update of the River Basin Management Plans.

The latest assessment of the River Basin Management Plans (RBMPs) carried out in 2012 indicates that progress towards the objective is expected, but good status will not be reached in 2015 for almost half of the EU water bodies. Several reasons are behind this. The assessment of the RBMPs identifies the main obstacles encountered in each Member State and stresses that hydro-morphological pressures, pollution and over-abstraction remain the main pressures on the water environment.

These findings have been confirmed by the 2015 Commission assessment of the programme of measures put in place by Member States to achieve the objective of the Water Framework Directive. In particular for the second cycle of River basin Management Plans the Commission recommends Member States to improve measures to control water abstraction and to ensure ecological flow, for instance by reviewing permits to ensure sustainable use and improve monitoring and enforcement. Agriculture is still an important source of diffuse pollution: Member States needs to better control fertilizers use as well as create incentives for more water efficient irrigation.

The Air Quality policy

Air pollution causes damage to human health and ecosystems. Biodiversity is especially under threat by high levels of ground-level ozone impacting on vegetation and by deposition of acidifying and eutrophying pollutants impacting on biota in general and on sensitive species in particular. Air pollution emissions have gone down significantly in the EU since the year 2000 and some improvement has been recorded on reduced concentrations of peak ozone, as well as deposition of acidifying and eutrophying components in the environment. Still the current levels of pollution are generally above the "critical loads" and "critical levels" that ecosystems can sustain without damage to biodiversity. The EEA has estimated that 84 % of the Natura 2000 areas were exposed to O3 concentrations above the critical level for the protection of forests in 2011. The EEA (2014e) further estimates that 63 % of the total EU-28 ecosystem area and 73 % of Natura 2000 area was at risk of eutrophication in 2010, due to excessive atmospheric nitrogen deposition covering most of continental Europe and the reduction of risk for eutrophication over the last decade or so has merely been moderate. Due to the very significant reductions in atmospheric sulphur dioxide emissions the risk for ecosystem acidification has been reduced. The EEA (2014e) estimates that 7 % of the total EU-28 ecosystem area and 5 % of the Natura 2000 area were at risk of acidification in 2010.
REFERENCE: EEA Report No 5/2014 http://www.eea.europa.eu/publications/air-quality-in-europe-2014

Action 6a of the Strategy foresees that Member States will establish restoration prioritization frameworks at national and sub-national level by 2014. As of the time of writing this report,, only two Member States, the

Netherlands and Germany, have provided the Commission with 'Restoration Priority Framework' documentation concerning their priorities for the restoration of degraded ecosystems (see Box 2 for further information). However, ecosystem restoration work is underway in many Member States with examples including the '*Trame Verte et Bleue*'[13] scheme in France which seeks to identify and preserve an ecological network. *Metsähallitus*[14] in Finland has under the METSO programme, restored 16 000 hectares of forests and mires in protected areas between 2008 and 2013 and more than 26 000 hectares before 2008. In the United Kingdom, measures are underway to meet Target 2 objectives such as work to restore habitats and improve ecosystem services at a landscape scale. For example, 48 new Local Nature Partnerships (LNPs) have been established around England to provide a local approach to managing the natural environment in an integrated way. In Scotland, Green Networks and green infrastructure projects aim to improve the environment by creating integrated habitat networks, and mapping of ecosystem health will inform targeted action to meet Target 2 objectives.[15]

Box 2 - Examples of Restoration Prioritisation Framework (RPF) from the Netherlands and Germany for Action 6a[16]

Netherlands

The Netherlands have developed a strategic framework to set priorities for ecosystem restoration at sub-national, national, taking into account EU-level interests and impacts.

The framework consists in principle of four layers:

1. The PAF (N2000)

2. The National Nature Network (NNN, formerly known as *Ecologische Hoofd Structuur*.

3. Natuurambitie Grote Wateren (Nature Ambition Great Waters)

4. Smaller national projects, such as 'groen-blauwe dooradering' (literally "green-blue veining')

Germany

In Germany, a diverse range of instruments exists for the conservation of biological diversity, which are applied across all levels of government. Key tools are spatial planning, protected areas, and compensatory measures for intervention and support measures.

The Federal Government adopted the following measures within the National Biodiversity Strategy:

• By 2020, watercourses and their floodplains are secured in their function as a habitat, and areas in their natural state are ensured.

• By 2020, the majority of watercourses have more natural flood plains.

• Increase the retention areas of rivers by at least 10% by 2020

In relation to these objectives, new initiatives are in the pipeline, including the National Flood Protection programme. In addition, the Federal Government will also establish a "Federal Program Blue Ribbon", which will involve the restoration of federal waterways and their floodplains.

[13] France 5th National Report, 2014
[14] Finland 5th National Report, 2014
[15] UK 5th National Report 2014
[16] Adapted from reporting from MS to EC 19 December 2014 and Germany 9 February 2015

6b) The Commission will develop a GI 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 GI projects and maintenance of ecosystem services, for examples through better targeted use of EU funding streams and Public Private Partnerships

A single area of land can offer multiple benefits, provided its ecosystems are in a healthy condition. Maintaining biodiversity-rich ecosystems, reconnecting fragmented natural and semi-natural areas, restoring damaged habitats, and improving our urban ecosystems will provide us with more and better goods and services. Investing in Green Infrastructure generates significant economic benefits; it creates both high- and low-skilled jobs such as in planning, engineering and building its elements as well as in restoring and maintaining urban and rural ecosystems.

In 2013, the Commission adopted a Green Infrastructure Strategy[17] to promote the deployment of Green Infrastructure in the EU. Considerable progress has already been made in implementing the actions proposed in the strategy[18]:

Promoting GI in the main policy areas:

Major conferences promoting the potential contribution of GI to major EU policy objectives were organised in 2013 and 2015. Guidance documents on the integration of GI into specific policy areas have been published (cf. regional and cohesion policies, water and flood management, EIA and SEA). Wider access to dedicated information on Green Infrastructure has been provided through BISE platform, including a catalogue on GI. Further work needs to be undertaken to develop documentation linking GI to health and consumer policies, to climate change adaptation and disaster risk management, to the common agricultural policy, and in relation to TEN-T and the Connecting Europe Facility.

Improving information, strengthening the knowledge base and promoting innovation:

The Horizon 2020 programme supports relevant research and innovation, notably on innovative nature-based solutions such as Green Infrastructure (cf. calls in 2014 and 2015). The European Environment Agency and the Joint Research Centre[19] have published reports on the usability of existing data and new methodologies for Green Infrastructure deployment. Relevant studies have been published by the EEA on spatial analysis of GI in Europe, and on the role of GI in mitigating the impacts of weather and climate change related natural hazards, and by the JRC on connectivity and multiple ecosystem services. The MAES initiative is providing

[17] COM(2013)249. A progress review is foreseen for 2017.
[18] See http://ec.europa.eu/environment/nature/ecosystems/index_en.htm.
[19] See http://ec.europa.eu/environment/nature/ecosystems/background.htm

the knowledge base for further analyses at EU and Member State's level. A review of the extent and quality of technical and spatial data available to GI deployment in the Member States is ongoing and should be delivered by the end of 2015.

Work is also under way on assessing the contribution technical standards and innovation could make to 'growing the market' of green infrastructure solutions (e.g. through the inclusion of GI into CEN/CENELEC work programme),

Improving Access to Finance

Green infrastructure projects are eligible under the Natural Capital Financing Facility, the innovative financing mechanism set up under an agreement between the Commission and the European Investment Bank, which started as Pilot Phase in 2015.

EU Level GI projects

Work is also under way on a cost-benefit analysis for opportunities (e.g. EU 2020 strategy and the Multiannual Financial Framework 2014-2020/, Connecting Europe Facility) for promoting EU-scale projects through a trans-European network Green Infrastructure initiative (TEN-G). The analysis – to be available in 2015 - should provide options on the ways forward and demonstrate how building blocks of GI could be promoted by a TEN-G approach – there should be a comprehensive approach combining building blocks of different characters (natural units such as river basins or mountain ranges, cross-border ecological networks or cultural-administrative units such as metropolitan areas). Governance setup, financing mechanisms, experiences and lessons learnt on European and Member States levels should be analysed in the view of applicability for TEN-G in order to assess whether a TEN-G initiative will be the adequate tool for prioritizing the uptake of GI with European-wide importance. At a major Conference[20] jointly organised by the European Economic and Social Committee, the Committee of the Regions, the European Parliament and the Commission on 5 May 2015, TEN G was highlighted as a priority amongst the next steps.

Beyond the implementation of Green Infrastructure on European level, there are a lot of interesting initiatives going on in the Member States (e.g. *Trame verte et bleue* in France, UK, etc.) and Member States have highlighted the importance of moving forward with Green Infrastructure at the Informal Council of April 2015 under the Latvian Presidency. However, strategic frameworks at national levels for implementing Green Infrastructure are not widely developed yet, awareness raising, capacity building and its integration need to be stepped up. The use of available financing opportunities offered by the integration of Green Infrastructure into appropriate funding mechanisms such as the Common Agricultural Policy, the Cohesion Fund, the European Regional Development Fund, the European Social Fund, the European Maritime and Fisheries Fund, and the Financial Instrument for the Environment provides new opportunities but uptake is

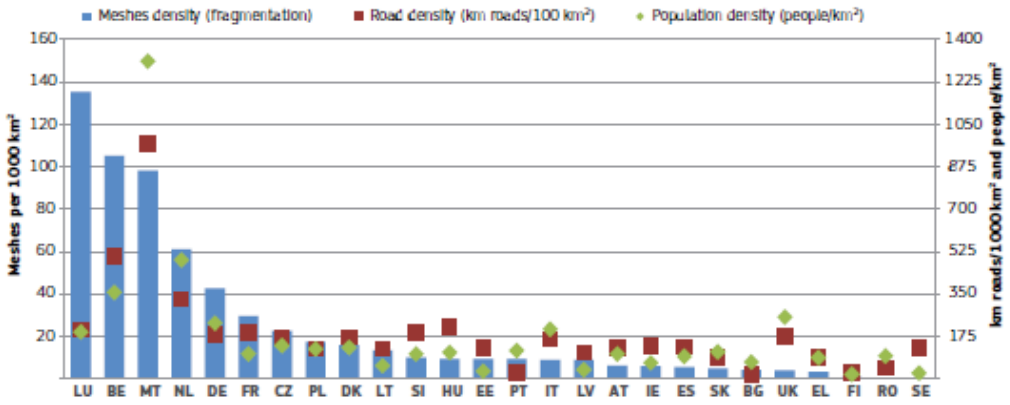
[20] http://www.eesc.europa.eu/?i=portal.en.events-and-activities-green-infrastructure-success

still limited. Its deployment is still too often small-scaled, and economic and social benefits are not sufficiently taken into account for decisions on whether to use a green or grey infrastructure solution. Actions on establishment, maintenance and improvement of Green Infrastructure have started mainly at local or regional levels, and not at the equally necessary national and European-wide scale[21]. Its contribution to maintain and enhance multiple ecosystem services could not be measured yet.

An assessment of Green Infrastructure regarding its spatial distribution/functionality/status and pressure needs to take into account existing frameworks (such as MAES) and recommendations for measuring the quality and potential of Green Infrastructure initiatives[22]. A review of extent and quality of technical and spatial data available to Green Infrastructure deployment in Europe is foreseen for 2015 in the Green Infrastructure Strategy.

Available status and pressure data beyond MAES (see action 5) are mainly linked to fragmentation. In the EU 2010 Biodiversity Baseline, one fragmentation index was available (based on 2006 data, 30% of the EU terrestrial land was estimated as highly fragmented[23]). Progress has been made in developing more specific fragmentation indicators (see Figure 3), and a first update of existing fragmentation indicators is planned in 2016.

Figure 3 - Landscape fragmentation and road and population density in 2009, across MS[24]



Landscape fragmentation is highly correlated with population and road density. Luxembourg and Belgium are very densely populated and are at the European nexus of transport links for cross-European travel, so have highly fragmented landscapes. The Netherlands, Germany, France, the Czech Republic have

[21] See Green Infrastructure library http://biodiversity.europa.eu/bise-catalogue on BISE http://biodiversity.europa.eu/topics/green-infrastructure
[22] See http://ec.europa.eu/environment/nature/ecosystems/background.htm.
[23] EU 2010 Biodiversity Baseline Technical report No 12/2010 http://www.eea.europa.eu/publications/eu-2010-biodiversity-baseline/
[24] EU Resource Efficiency Scoreboard 2014, http://ec.europa.eu/environment/resource_efficiency/documents/re_scoreboard_2014.pdf

significant landscape fragmentation values, but they are lower than in the first group of Member States due, in part, to investments in spatial planning. Countries with large areas of hills or mountains will inevitably be less fragmented since the geography deters urban and transport development.

However, fragmentation is not only due to grey infrastructures but also to the spread of artificial and intensively managed agricultural areas. Small patches of natural or semi-natural areas can become isolated in landscapes dominated by non-biodiversity friendly land-use practices, when this happens the capacity of agricultural and forest ecosystems to deliver multiple services to people is also affected. The share of natural and semi-natural land, which was fragmented, tended to increase over Europe between 2000 and 2006[25]. In 2006, 35% of the EU-28 forest lands were intermingled with natural and semi-natural non-forested land, agriculture and artificial land. Furthermore, European freshwater ecosystems are fragmented by artificial structures that a) may affect the passage of migratory fish and so restrict their range and/or abundance and b) change substantially the natural habitat distribution within rivers and modify their ecological capacity[26].

The EU Green Infrastructure and Adaptation[27] strategies have increased awareness that ecosystems can deliver services for mitigating the impact of selected climate change induced natural hazards, i.e. landslides, avalanches, floods, storm surges, as well as their contribution to global climate regulation. The role of Green Infrastructure in mitigating the impacts of weather and climate change related natural hazards has been mapped for the first time at European scale[28], analysing the natural capacity of ecosystems to deliver services that can mitigate the risk associated with natural hazards, the potential of occurrence of these natural hazards, as well as the demand side for such services.

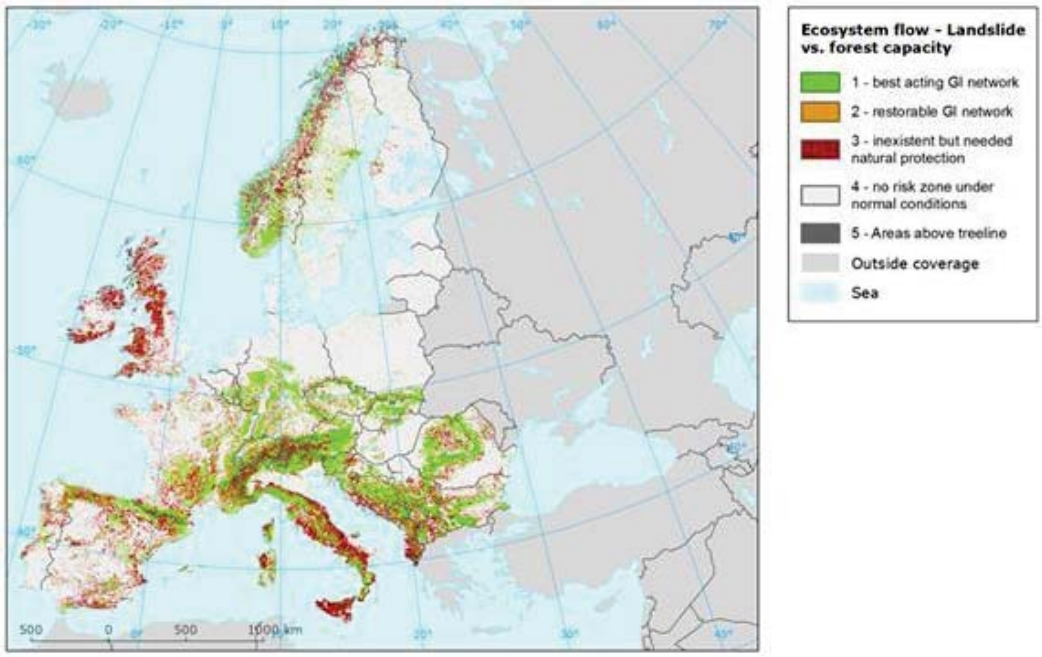
[25] SOER land system report http://www.eea.europa.eu/soer-2015/europe/land, Joint EEA-FOEN report on landscape fragmentation in Europe http://www.eea.europa.eu/publications/landscape-fragmentation-in-europe, EEA report on Green Infrastructure and territorial cohesion http://www.eea.europa.eu/publications/green-infrastructure-and-territorial-cohesion

[26] Fragmentation indicators are not reacting immediately to new policies or planning practices, thus long-term time series at European level are adequate. Fragmentation through grey infrastructure (i.e. transport infrastructure and urban areas) has been assessed in 2011 in http://www.eea.europa.eu/publications/landscape-fragmentation-in-europe, which can be updated once CLC 2012 data is available (possibly in 2016). Fragmentation of natural and semi-natural areas is planned to be updated in 2015; see http://www.eea.europa.eu/data-and-maps/indicators/fragmentation-of-natural-and-semi/fragmentation-of-natural-and-semi and doi: 10.1007/s13593-014-0238-1; for forest fragmentation see http://forest.jrc.ec.europa.eu/activities/forest-pattern-fragmentation/. Methodologies for assessing river fragmentation have been developed, but this indicator has not been populated with data so far http://www.eea.europa.eu/data-and-maps/indicators/fragmentation-of-river-systems.

[27] COM(2013)216 http://ec.europa.eu/clima/policies/adaptation/what/documentation_en.htm

[28] See ibid., Also: EEA (2015): The role of green infrastructure in mitigating the impacts of weather and climate change related natural hazards; and http://ec.europa.eu/research/environment/pdf/renaturing/nbs.pdf.

Figure 4 - Potential of Green Infrastructure to mitigate exposure to landslides



This map illustrates the potential of Green Infrastructure based on ecosystem capacity to mitigate exposure to landslides. Green areas show existing Green Infrastructure, in particular forests, currently delivering protection functions to landslides, and main actions would be adequate protection and management. The orange marked areas suggest that investing in restoration activities for the respective ecosystems could improve their capacity to protect against landslides. Red areas mark the most vulnerable regions to landslides, for which currently either existing ecosystems coverage do not insure against landslide risks (but by reforestation of degraded areas this protection function could be re-established), or natural ecosystems would not have the capacity to fully protect against landslide risks.

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

In 2012, a Commission review of the opportunities for biodiversity-proofing the EU budget[29] found that numerous tools exist to facilitate the process. Biodiversity-proofing is a structured process to ensure the effective application of tools to avoid — or at least minimise — biodiversity-harmful spending and to act as a catalyst for biodiversity-friendly spending. In 2014, the Commission published a practical common framework for biodiversity-proofing the EU budget, which includes general and fund-specific guidelines[30] for national and regional authorities and for Commission services.

The process of 'biodiversity proofing' of the EU budget is intended to ensure primarily that spending under the EU budget has no negative impacts on biodiversity, and additionally that spending under the EU budget

[29] http://ec.europa.eu/environment/nature/biodiversity/comm2006/pdf/BD%20Proofing%20Main%20Report.pdf.
[30] All guidance documents available on http://ec.europa.eu/environment/nature/biodiversity/comm2006/proofing.htm

is generally supportive in achieving biodiversity targets. This process relates to policy instruments across many policy areas (such as agriculture, fisheries, transport, regional policy, and environmental protection). To complement this approach, the Commission has started tracking biodiversity-related expenditure under the EU budget[31].

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).

Following the adoption of the EU Biodiversity Strategy, the Commission has been working with Member States and stakeholders to evaluate what would need to be done to respect the principle of No Net Loss of biodiversity and ecosystem services across the EU. A more rigorous and systematic application of the mitigation hierarchy (avoid causing damage to biodiversity wherever possible, minimize any damage that cannot be avoided, restore to the extent possible any damage that occurs when the action is carried out and finally, compensate/offset any residual damage) was identified as the core issue particularly in areas outside the Natura 2000 network. The Commission has supported a number of contracts to support the development of the No Net Loss initiative and has also carried out a public consultation[32]. The NNL initiative will be considered following the results of the mid-term review of the EU Biodiversity Strategy to 2020 and the fitness check of the nature legislation.

Target 3a – Increase the contribution of agriculture to maintaining and enhancing biodiversity

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.

Socio-economic benefits of reaching this target:

The following are examples of farming systems that contribute to maximize the agricultural area covered by biodiversity measures and provide socio-economic benefits:

[31] European Parliament, 'Safeguarding biological diversity' EU policy and international agreements' in depths analysis, April 2015

[32] http://ec.europa.eu/environment/nature/biodiversity/nnl/index_en.htm

- Organic farming: A review of over 40 European studies found that, on average, organic farms provided between 10 % and 20 % more jobs per hectare (ha)[33], while a 2006 survey for the United Kingdom's Soil Association found organic farming in the United Kingdom provides 32 % more jobs per farm than equivalent non-organic farms[34]. According to a recent report, it is a sector that attracts younger workers and women, and positive employment trends can be seen all across Europe[35]. It is also acknowledged to create economic added value to agricultural products.

- High Nature Value Farming: HNVF systems represent about 30% of agricultural area and often occupy agriculturally marginal land of low productive capacity where intensification may not be cost-effective[36]. They often provide the main employment sources in those area and especially in mountain or islandic area and provide economic benefits. For example they contribute to the maintainance of the attractiveness of traditional landscape which indirectly benefits the tourism sector. There are also often the place of the production of traditional products with have high quality standard and which can represent alternative markets enabling the diversification of the economy[37,38].

"Maximise areas under agriculture across grasslands, arable land and permanent crops that are covered by biodiversity-related measures under the CAP…"

The biodiversity coverage of the CAP 2007-2013 was ensured by the Rural Development Policy as well as the integration of biodiversity elements into Cross Compliance. While this approach promoted targeted actions for biodiversity and strengthened Natura 2000 implementation in general, few biodiversity measures were implemented in areas of intensive agriculture, where they were especially needed. Overall progress in terms of the area covered by biodiversity-related measures as part of rural development will be demonstrated by the ex-post evaluation on the 2007-2013 RDPs. However, some relevant statistics for 2007-2013 are already available. During that period, € 23 billion of public funds was allocated to agri-environment measures covering 27% of the Utilized Agricultural Area (UAA). In addition, € 583 million were allocated for Natura 2000 payments covering 1.5 million hectares. Several of the other measures included in RDPs

[33] Green Jobs and related policy frameworks. An overview of the European Union. Begoña María-Tomé Gil, Ana Belén Sánchez López and Laura Martín Murillo; Sustainlabour, February 2013 Page 5, sources: (FIBL, 2009) and (Farm Structure Survey, 2007) http://www.sustainlabour.org/documentos/Green%20and%20decent%20jobs-%20An%20Overview%20from%20Europe%20FINAL.pdf

[34] 'EU Resource Efficiency Scoreboard 2014 .

[35] European Commission, Facts and figures on organic agriculture in the European Union (2013), October 2013

[36] *http://www.ieep.org.uk/assets/1386/HNV_and_CAP_Full_Report.pdf*

[37] http://www.heritagecouncil.ie/fileadmin/user_upload/Publications/Wildlife/High_Nature_Value_Farming_summary.pdf

[38] *http://www.fundatia-adept.org/?content=local_products*

would also have delivered benefits, mainly indirect, for biodiversity. In the EU-27, the total area under organic agriculture, which is regarded as positive for biodiversity, increased by 6% per year , between 2002 and 2011 and in 2011 amounted to an estimated 5.4% of the utilised agricultural area.

The reform of the Common Agricultural Policy for 2014-2020

The Commission presented in 2011 a set of legal proposals to reform the CAP. These proposals were designed to make EU agriculture more competitive, more sustainable and to promote vibrant rural areas. The final agreement on the Commission proposals reached in 2013 maintains the two pillars of the CAP, increasing the links between them and strengthening the environmental features of pillar 1.. An important feature of the new CAP is the recognition that farmers should be rewarded for the public services they provide. The reformed CAP provides many opportunities for supporting biodiversity-related measures and gives flexibility to the Member States to decide how and to what extent they will use these opportunities. However, it will take several years before the impacts of the reformed CAP on CAP can be measured. .

An evaluation of the implementation of the CAP reform, foreseen to start in late 2015, will provide more detailed information concerning the impacts of the changes designed to benefit biodiversity.

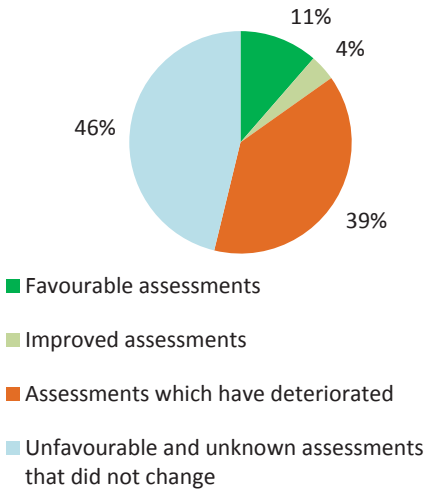
"Bring about a measurable improvement in the conservation status of species and habitats that depend on, or are affected by, agriculture and in the provision of ecosystem services as compared to the EU2010 Baseline."

When using the information reported under the Habitats and Birds Directive (see target 1 for further explanation of the reporting process), a comparison is made between the status of species and habitats associated with agriculture in the period 2001-2006 and the status of the same species and habitats in the period 2007 to 2012, there is no measurable improvement. In relation to Annex 1 habitats from the Habitats Directive, while 4% of the assessments showed an improvement between the two periods, 39% of the assessments showed deterioration. In relation to species the corresponding figures were 4% and 20%[39]. Overall, grasslands and wetlands have the highest proportion of habitats with an unfavourable-bad and deteriorating status. Two major changes have contributed to upsetting the delicate balance between agriculture and biodiversity: i) specialisation and intensification of certain production methods (such as the use of more chemicals and heavy machinery); and ii) marginalisation or abandonment of traditional land management being a key factor in preserving certain habitats and site-specific bio-diversity.[40] These pressures have been exacerbated by urban sprawl, infrastructure developments (soil sealing) and climate change.

[39] EEA Technical report on State of Nature in the EU, May 2015 http://www.eea.europa.eu/publications/state-of-nature-in-the-eu
[40] http://ec.europa.eu/agriculture/envir/biodiv/index_en.htm

Urban development and its associated land-take, poses a significant threat to soil and biodiversity and could also impact upon agricultural production. Land-take concerns predominantly arable land and permanent crops followed by pastures and agricultural mosaics. Every year, about 1000 square kilometres of land is converted to artificial surfaces and most of this "lost" land is taken from agriculture[41].

Figure 5 - Changes (2007-2012 vs 2001-2006) in conservation status for Annex I habitats associated with agricultural ecosystems (grassland and cropland)



Source: EEA 2015

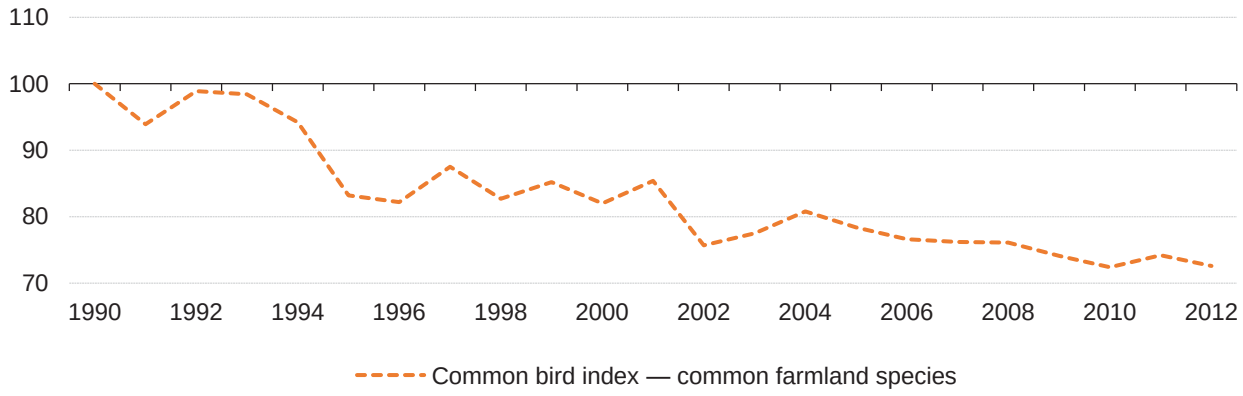
Box 3: Farmland bird and grassland butterfly - Barometer of biodiversity change of agricultural land

The farmland bird indicator is intended as a barometer of change for the biodiversity of agricultural land in Europe. Bird populations are considered to be a good indicator of the broad state of wildlife and the countryside because they occupy a wide range of habitats and tend to be near to or at the top of the food chain. This means that, as a rule, healthy bird populations signify a healthy state of the plants and invertebrates on which they feed.[42] Similarly, butterflies respond rapidly to changes in environmental conditions and habitat management, occur in a wide range of habitats, and are representative of many other insects. Butterflies are complementary to birds as an indicator because they use resources in the landscape at a much finer spatial scale.[43]

[41] http://www.eea.europa.eu/data-and-maps/indicators/land-take-2/assessment-2
[42] Defra (2014) Observatory monitoring framework – indicator data sheet. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/373096/agindicator-de5-11nov14.pdf
[43] JNCC (2014) Available at: http://jncc.defra.gov.uk/page-4236

Since 1990, farmland bird populations have decreased by nearly 30 %. The trend shows that bird species that depend on the farmland habitat as created by human activity are increasingly threatened by new agricultural practices. Among them are changes in land use (crop rotation patterns; disappearance of uncultivated verges; disappearance of hedgerows) and the increasing land take (asphalted areas).

Figure 6 – Common bird index – common farmland species, EU, 1990-2012 (*)
(index 1990 = 100)



(*) Estimates. EU: aggregate changing according to the context.

The Common farmland species index covers 39 bird species. Source: EBCC / RSPB / BirdLife / Statistics Netherlands; Eurostat (online data code: env_bio3)

The abundance of farmland birds varies between Member States. According to Eurostat, between 2000 and 2008, the common farmland bird index declined in the majority of the Member States assessed. The strongest declines were seen in Germany, Austria and Denmark, each with declines above twenty percentage points. Latvia and Slovakia, on the other hand, experienced an increase in the common farmland bird index of twenty and nearly ten percentage points respectively.

Figure 7 - Change in national and EU farmland bird indicators, 2000-08 (%)

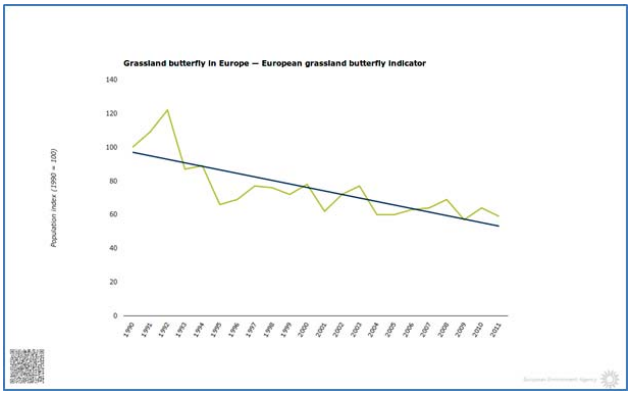
Source: EBCC/RSPB/BirdLife/Statistics Netherlands, also available at Eurostat
(online data code: env_bio2)

This decline in the number of farmland bird species has been confirmed in a number of further studies in the United Kingdom[44]. Much of the decline in farmland birds has been attributed to changes in agricultural methods, intensification and specialisation[45]. For example, one study found that nearly one third of Europe's Important Bird Areas are threatened by agricultural intensification and expansion[46]. Factors that have been cited as being particularly harmful in terms of agricultural intensification in the EU include hedgerow loss, land drainage, increased mechanisation, increased fertiliser and pesticide use, reduction of spring cultivation, simplification of crop rotations, changes in crop use, and loss of farm diversity[47]. The decline in common farmland bird species is in sharp contrast to the significant improvements observed in the populations of some rare bird species over the same period, most likely as a result of direct conservation action[48].

[44] Chamberlain, D.E., Fuller, R.J., Bunce, R.G.H., Duckworth, J.C. & Shrubb, M. (2000). Changes in the abundance of farmland birds in relation to the timing of agricultural intensification in England and Wales. J. Appl. Ecol. 37: 771–788; Fox, A.D. 2004. Has Danish agriculture maintained farmland bird populations? J. Appl. Ecol. 41: 427–439.; Wretenberg, J., Lindström, Å., Svensson, S., Thierfelder, T. & Pärt, T. 2006. Population trends of farmland birds in Sweden and England: similar trends but different patterns of agricultural intensification. J. Appl. Ecol. 43: 1110–1120.
[45] Donald, P. F., Green, R. E. and Heath, M. F. (2001). Agricultural intensification and the collapse of Europe's farmland bird populations. Proc. Roy. Soc. Lond. B 268: 25–29.
[46] BirdLife International (2004). Agricultural intensification threatens Important Bird and Biodiversity Areas in Europe. Presented as part of the BirdLife State of the world's birds website. Available from: http://www.birdlife.org/datazone/sowb/casestudy/140 . Checked: 24/04/2015
[47] BirdLife International (nd). Common bird indicators: helping to track progress towards the 2010 target.
[48] Gregory, R.D., Noble, D., Field, R., Marchant, J., Raven, M. & Gibbons, D.W. (2003). Using birds as indicators of biodiversity. Ornis Hungar. ,12 –13, 12 –24. ; Holling, M. & Rare Breeding Birds Panel (2011). Rare breeding birds in the United Kingdom 2009. Br. Birds, 104, 476 – 537.

Grassland butterflies have declined severely between 1990 and 2011; their populations have decreased by 50% and this reduction shows no sign of levelling off. This indicates a dramatic loss of grassland biodiversity since the European Butterfly Indicator is a useful proxy for a wider understanding of biodiversity changes. The main driver behind the decline of grassland butterflies is the change in rural land use: agricultural intensification where land is relatively flat and easy to cultivate, abandonment in mountains and wet areas - mainly in Eastern and Southern Europe.

Figure 8 - European grassland butterfly indicator



Source: SEBI001, EEA http://www.eea.europa.eu/data-and-maps/indicators/abundance-and-distribution-of-selected-species/abundance-and-distribution-of-selected-2

PROGRESS IN IMPLEMENTING ACTIONS

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).

The CAP reform regulation 1307/2013 on Direct Payments introduced a key change in the architecture of the direct payments: 30% of direct payments will be allocated through a mandatory "greening" component which will support agricultural practices beneficial for the climate and the environment. The G*reening*[49] *is intended to contribute to slowing down the decline in farmland biodiversity, most notably in intensive farming area, to the benefit of the environment and biodiversity in particular. Its positive effects will depend on the implementation of specific measures, not least because additional flexibility in implementation was granted to Member States and farmers in the final version of the legal texts.*[50]

[49] 'greening measures' include obligatory crop rotation, grassland maintenance, and more specific agri-environment measures, aimed at climate change mitigation and biodiversity conservation. [http://www.eea.europa.eu/themes/agriculture/greening-agricultural-policy]

[50] http://www.eea.europa.eu/soer-2015/europe/agriculture

Greening practices take the form of simple, generalised, non-contractual and annual actions that are linked to agriculture. The proposal of the Commission of October 2011 specified that the greening should go beyond cross compliance and included the following elements: (i) crop diversification, (ii) the maintenance of permanent grassland (at farm level), and (iii) Ecological Focus Areas (EFAs) on 5% of the arable land of the holding. The objective of EFAs is, in particular, to safeguard and improve biodiversity on farms. Measures associated with EFAs can include, in particular, buffer strips, nitrogen-fixing crops, hedges, fallow land, catch crops and green cover. Member States shall also designate permanent grasslands which are environmentally sensitive areas, in areas covered by the Habitats and Birds Directives and which require strict protection in order to meet the objectives of those directives. Farmers shall not convert or plough these grasslands. Member States may, in order to ensure the protection of environmentally valuable permanent grasslands, decide to designate further sensitive areas situated outside areas covered by the Directives.

In the final adopted texts, it was specified in recital 44 of Regulation (EU) No 1307/2013 that EFAs should be established, in particular, in order to safeguard and improve biodiversity on farms. The initial elements to be taken into account for an area to qualify as an EFA were maintained (i.e. land lying fallow, terraces, landscape features, buffer strips), while the list of elements was extended to include some productive features (i.e. nitrogen-fixing crops, catch crops, short rotation coppices, agroforestry, forest edges). Those plants should be selected for their specific indirect biodiversity benefits in accordance with recital 44, and accompanied by appropriate farming practices, in particular through a reduced or non- use of fertilizers and plant protection products on the farms. In addition, greater flexibility was provided by allowing the objective of maintaining permanent grassland to be fixed at national/regional level instead of at the farm level. The designation and strict protection of environmentally sensitive grasslands was introduced as an additional requirement. The definition of permanent grassland was also extended to include pastures where grasses are not predominant; one consequence of which being that more semi-natural grasslands would become eligible for direct payments. Member States were also given the option to apply national schemes on condition that these schemes were adjudged to be equivalent to the greening elements specified in the EU texts. Exemption provisions such as the exclusion from EFA provisions of farms with less than 15 ha of arable land and farms with a high share of arable land used for the production of grasses, were also introduced. The associated delegated acts specified that in certain cases landscape features, buffer strips and green cover which are already covered by Cross Compliance, can also count towards EFAs.

An analysis of the first results of the greening implementation can only be done on the basis of Member States choices, because the Commission is still awaiting the information of the farmer's choices of EFA elements at farm level: this information will be provided in mid-December 2015. The results of notifications submitted by Member States in August and December 2014 which are valid for 2015 are indicated hereafter (state of play on 07.05.2015):

- Ecological Focus Area:

On arable area, the progress for implementing the action 8a depends largely on the biodiversity value of EFA choices made by farmers and Member States. Especially the non-productive EFAs, e.g. landscape features, are likely to have a better biodiversity benefit. But the progress will also depend on whether the elements selected go beyond those already protected under cross-compliance rules. Permanent crops are excluded from the greening obligations, therefore the action will not be achieved for this sector.

Only two Member States (NL and PL) will allow for **collective implementation of EFA** obligations. No Member State decided to apply regional level implementation. Four (EE, FI, LV, SE) out of the five Member States having the possibility to apply the "**forest exemption**" in relation to EFAs elected to do so

The **choice of elements** that farmers may use to fulfil their EFA obligation varies between Member States. A group of 5 Member States offers a limited selection of elements (2-4): FI, LT, NL, SI and ES. In contrast, another group of 14 MS offers an extensive list of elements (10 or more): AT, BE, BG, HR, CZ, FR, DE, HU, IE, IT, LU, PL, RO, SK. Nine Member States opted for an intermediate list: CY, DK, EE, EL, LV, MT, PT, SE and UK.

Both productive and non-productive elements have been chosen in relation to EFAs. The most popular element is the nitrogen-fixing crops (chosen by all MS except DK), followed by land lying fallow (all except NL, RO), landscape features (at least one) (24 MS), short rotation coppice (20 MS), catch crops (19 MS), buffer strips (17 MS), afforested areas (14 MS), agroforestry areas (11 MS), strips along forest edges without production (9 MS), terraces (8 MS) and, finally, strips along forest edges with production (6 MS).

In terms of EFA detailed choices:

Among **landscape features,** 24 Member States activated at least one landscape feature. The most popular were trees in group (17 MS), followed by field margins (16 MS), trees in line (16 MS), ditches (15 MS), hedges (13 MS), isolated trees (13 MS), ponds (12 MS) and traditional stone walls (7 MS). Member States could choose landscape features defined in Article 45 of Delegated Regulation (EU) No 639/2014 and/or those defined under their national cross-compliance rules. Four countries (FR, NL, RO, SE) and two (BE, UK) in some region(s) decided to apply only the Article 45 definition, while twenty allowed cross-compliance elements (AT, BE, BG, HR, CZ, DK, EE, FI, DE, GR, HU, IE, IT, LV, LU, MT, PL, PT, SK and UK; BE and UK in some region(s) only) including, for 12 of them, also other landscape features protected under cross-compliance. GAEC 7 was the main choice for countries which opted for cross-compliance on their own or in addition to those defined in Article 45. .

On **buffer strips** required under cross-compliance, Member States adopted different approaches to dimension limits on minimum and maximum width, ranging from 1 to 50 meters. Ten Member States activated also "other buffer strips" i.e., those not required under cross-compliance. Almost all countries decided to include strips of riparian vegetation in the buffer strip. All opted to allow grazing or cutting on buffer strip as a derogation to the non-production requirement.

Countries that activated **short rotation coppice** (SRC) chose between 2 to 11 species, most popular being willow (Salix) (20 MS), poplar (Populus) (17), alder (Alnus) (14), birch (Betula) (11) and ash (Fraxinus)

(11). Almost all Member States specified which inputs (either mineral fertilisers and/or plant production products) should be banned.

Approaches to the categorisation of crop mixtures required under the **catch crop EFA** also differs depending on Member States. The indicated period of sowing usually extends from July to September; however some Member States notified a longer period starting from May-June. Some countries developed different technical criteria on the way the mixed crops are to be established (e.g. percentages of crop in the mixture, choice from different crop categories), a required minimum presence of crops on the field and conditions on the use of inputs.

Countries opting for **nitrogen-fixing crops** (NFC) chose between 4 and 19 crops the most popular being: faba bean (*Vicia faba*) (27 MS), pea (*Pisum spp*) (26), alfalfa (*Medicago*) (26), lupin (*Lupinus*) (24), and clover (*Trifolium*) (24). The majority elaborated on biodiversity criteria underlying their choice of NFC, while the arguments given by few Member States were short and generic. Many decided, in the light of the Nitrates Directive, to allow NFC on the entire territory while others did not provide any specific information on the geographical location. A number of Member States pointed out specific limitations or conditions relating to mitigation of the risk of nitrogen leaching. 13 countries specified production methods.

- Permanent grassland:

By mid-December 2014 Member States notified their choices concerning the environmentally sensitive permanent grassland (ESPG). The approaches to the designation of ESPG in Natura 2000 areas differ between MS. Ten Member States designated all the grassland in Natura 2000, five Member States between 50% and 100%, while eleven Member States designated less than half of the grassland. 4 Member States decided to designate ESPG outside Natura 2000 areas (CZ, LV, LU, UK-WA).

- Equivalence:

Five Member States notified their intention to offer their farmers the possibility to meet (some of) their greening obligations through equivalent practices. Three of them through agri-environment and climate measures (AECM) (AT, IE, PL) and two under certification schemes (NL, FR). Crop diversification was a dominant choice for equivalent practice among those countries. EFA was chosen by two Member State while permanent grassland was chosen by one Member State.

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.

Cross Compliance is a mechanism which ties EU support for farmers to compliance with standards of environmental care and public/animal/plant health and animal welfare. On biodiversity, Cross-compliance

covers certain articles of the Birds and Habitats directives within the "Statutory Management Requirements (SMRs)" and a set of rules which are designed to avoid the deterioration of habitats within the GAECs (good agricultural and environmental conditions) [51].

The Commission proposal included a new GAEC to protect wetlands and carbon rich soils and extended the GAEC on the protection of landscape features by adding provisions to ban the cutting of hedges and trees during the bird breeding and rearing season along with safeguards for avoiding invasive species. The Commission proposed that the Water Framework Directive (WFD) as well as the Sustainable Use of pesticides Directive (SUD) would become part of Cross Compliance, once they have been implemented in all Member States and the obligations directly applicable to farmers have been identified

In the final adopted acts, the GAEC on wetlands was not retained but biodiversity elements of the GAEC 7 on landscape features were included. The final agreement also confirms the intention to make the WFD and SUD part of cross compliance. It was also agreed that pending their incorporation into cross-compliance, that the two Directives will be part of the compulsory scope of the Farm Advisory System so that all farmers concerned have access to the relevant advice.

If set at the appropriate level, Cross Compliance enables to increase the biodiversity delivery of the CAP. On SMRs, the environmental delivery of Cross Compliance relies on the level of ambition of the implementation of environmental legislation at Member States level. The cross-compliance system is however crucial for ensuring a better awareness on the part of farmers of the need to respect basic rules on biodiversity stemming from the Habitat and Birds Directives. On GAEC, a high level of quality of the biodiversity requirements under the GAEC 7 enables the increase of the level of biodiversity performance of agri-environment schemes which deal with the management of landscape features, the cutting of hedges and invasive species management. The progress for implementing the action 8b will depend on the degree of implementation of GAEC and environmental legislation and on the possible WFD integration.

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

For the period 2014-2020, the Rural Development Regulation 1305/2013 contains one focus area specifically dedicated to biodiversity, namely " 4A: restoring, preserving, and enhancing biodiversity, including in Natura 2000 areas and in areas facing natural or other specific constraints, and high nature value farming, as well as the state of European landscapes". According to art 8.1.c (v), the strategy of RDPs

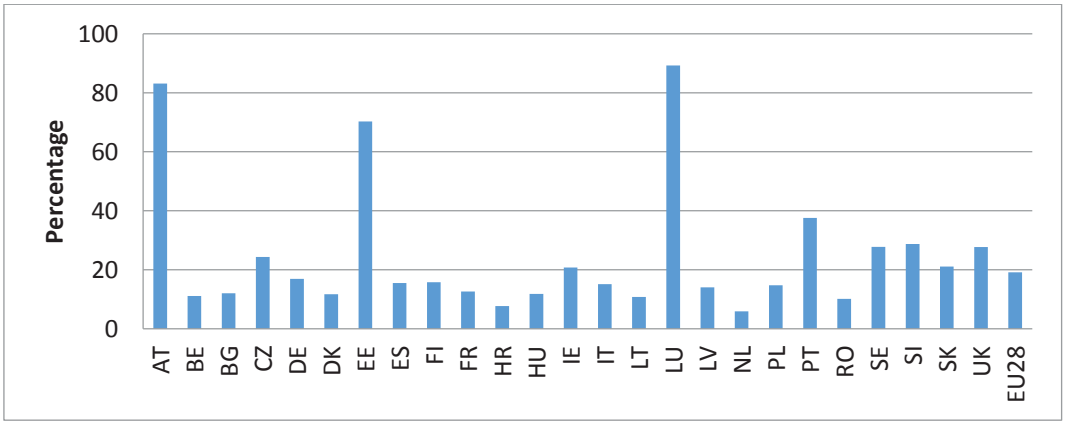
[51] http://ec.europa.eu/agriculture/envir/cross-compliance/index_en.htm

should describe appropriate approaches towards the specific needs of Natura 2000 areas. RDPs contain one quantified target on biodiversity[52] "*T9: percentage of agricultural land under management contracts supporting biodiversity and/or landscapes"*. The programmes do not specify the funding allocation to biodiversity (Focus Area 4), but instead designate the allocation at the priority level (Priority 4), which covers all environmental objectives. There are other priorities and focus areas which will deliver environmental benefits (including indirectly for biodiversity) such as improving water management linked to improved management of fertilizers and pesticides, preventing soil erosion and improving soil management, reducing GHG and ammonia emissions and promoting carbon conservation and sequestration.

For the second Pillar, the situation at the time of finalizing the present document (25/08/2015) was that a total of 73 RDPs had been adopted out of a total of 118 representing nearly three quarters of the Rural Development budget and 25 out of 28 Member States. An analysis of these approved programmes indicates that around 19.1% of the UAA is covered by biodiversity-related measures with very large disparities between Member States and regions (**Figure 9**). These disparities can be explained by i) the different levels of biodiversity ambition across the Member States/Regions; ii) differences in the structure of the RDPs (some RDPs have numerous, very specific Agri Environment and Climate Change Measures – AECMs - whereas in others the approach is more generic); and iii) differences in the way that the Member States have calculated the area covered by the RDP measures for indicator T9 (in some RDPs, only the areas where dark green AECMs are applied are taken into account, whereas in others, the area reported under indicator T9 covers a broader set of AECMs and Organic farming measures). A more precise and definitive conclusion regarding the percentage of UAA under biodiversity measures will require a more detailed assessment applying standardized methodologies across all the RDPs. As regards environment funding, on the basis of the 73 approved RDPs on 25/08/2015, around 44.2% of the total EAFRD budget has been allocated to Priority 4 and, for the measures considered individually, 4% to M08 (forest measures), 18,5% to M10 (agri-environment-climate measures), 5,8% to M11 (organic farming), 0,7% to M12 (Natura and WFD payments) and 15,6% to M13 (Natural Constraints Areas).

[52] Annex IV.4 of R 808/2014

Figure 9 - CAP CMEF indicator T9: percentage of agricultural land under management contracts supporting biodiversity and/or landscapes (as of 25/08/2015 – approved RDPs only)



Source: Database DG ENV.B1

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.

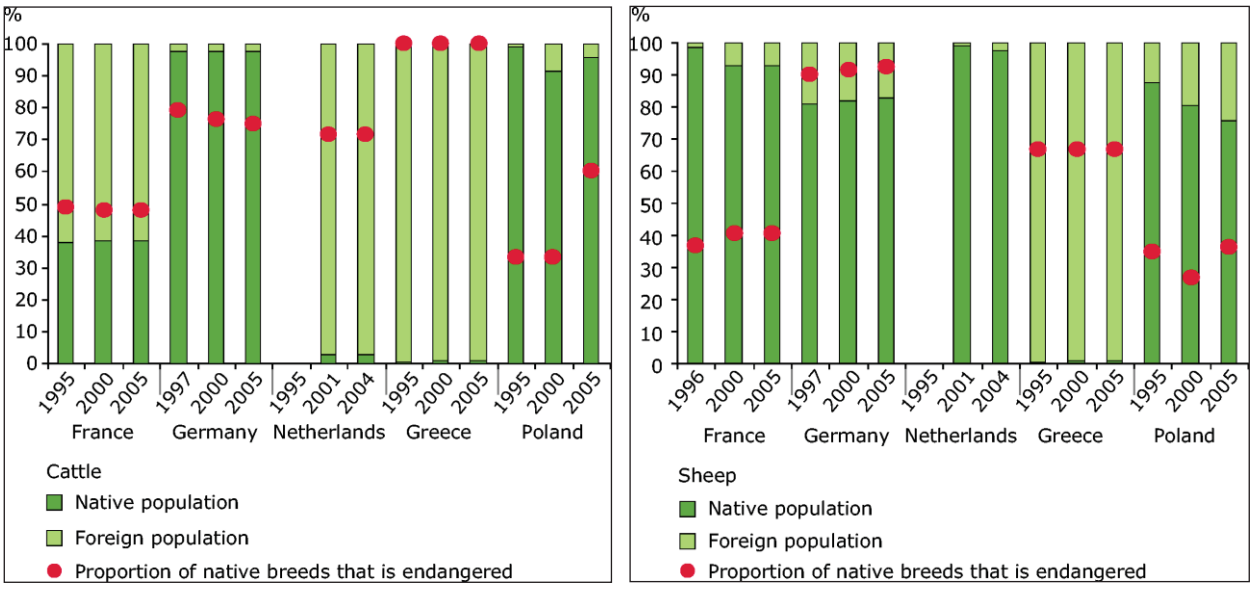
The Commission has provided the legal basis for mechanisms to facilitate collaboration among farmers and foresters on the continuity of landscape features, the protection of genetic resources and other mechanisms to protect biodiversity. This is especially made possible thanks to the agri-environmental payments which can be granted to group of farmers and the cooperation measure. The success of these measures in the second half of the strategy's implementation will depend on the establishment of implementation schemes at the Member States level. It is further to be seen whether the effectiveness of the interventions could be improved by targeting the implementation of biodiversity-related measures on specific area where biodiversity improvement can be achieved if common action are undertaken, and also by increasing the ambition of biodiversity measures in biodiversity-rich areas.

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.

In several countries, populations of native breeds, although generally well adapted to local circumstances and resources, remain in critically low numbers, being replaced by a few and widespread highly productive breeds, introduced for this purpose. The fact that native breeds make up only a small part of the total population, and that a high percentage of native breeds are endangered indicates a risk of loss of biodiversity. Although data are available for only a few countries, these indicate that many native cattle breeds are

endangered[53]. Overall, the situation is a cause of concern. On plant diversity, data is still not available to enable any conclusion to be drawn.

Figure 10 - Evolution of native population sizes and endangered breeds (cattle)



The **Rural Development Programmes** (RDPs) contribute through agri-environment-climate measures to agricultural genetic resource conservation at the farm level and encourages farmers to preserve local breeds and crops by rewarding them and other beneficiaries who engage in conserving agricultural genetic resources or undertake dissemination and advisory actions. Genetic resources-related actions were programmed in 26 Member States, with 72,193 contracts and some EUR 266 million (EAFRD) and EUR 424,5 million total public expenditure paid out in the period 2007-2013. An analysis of the measures concerning the conservation and use of agricultural genetic resources will be carried out after the adoption of all the RDPs for the period 2014-2020.

There is an ongoing **Preparatory Action** "EU plant and animal genetic resources" tabled by the European Parliament. The consortium officially started its work in July 2014 and progress of the activities can be followed on the website http://www.geneticresources.eu/. The aim of the preparatory action is to deliver inputs on how to improve communication, knowledge exchange and networking among all the actors potentially interested in activities related to the conservation of genetic resources in agriculture.

[53] EEA (2015) Livestock genetic diversity (SEBI 006) - Assessment published May 2010 http://www.eea.europa.eu/data-and-maps/indicators/livestock-genetic-diversity/livestock-genetic-diversity-assessment-published

In the context of the **European Innovation Partnership** (EIP-AGRI), a Focus Group on "Genetic resources: co-operation models" has been conducted. The reports of the meetings and preliminary outputs of the Focus Groups are available on the EIP-AGRI website[54]. In **Horizon 2020,** the research work programme for 2014-2015, the budget allocated to topic SFS-7 "Genetic resources and agricultural diversity for food security, productivity and resilience" in Societal Challenge 2 (Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research and the Bioeconomy) amounts to 30 EUR million. In 2014, three projects (two on plants and one on animals) were selected for funding. In addition, other topics contribute to fund research aimed at the conservation of agricultural biodiversity. Efforts on agricultural genetic resources will continue in the work programme for 2016-2017.

The EU programme[55] on the conservation of genetic resources in agriculture established conservation activities, both *in situ* and *ex situ*. These actions enhanced the morphological and genetic knowledge of plant genetic resources and the dissemination of results to end-users. The programme resulted in the collection and characterisation of several thousands of new accessions and the establishment of conservation infrastructures, databases, core collections, gene banks, and accession catalogues.

With regard to legislation, the Commission adopted two directives[56] in 2008-09 on conservation of landraces and local varieties to support the conservation *in situ* of genetic resources. In 2010, the Commission adopted a Directive on fodder-plant seed mixtures with the aim of conserving traditional seed mixtures.[57] In addition, the Commission has adopted in 2014 the implementing legislation[58] concerning in particular the identification of conservation varieties of fruit plants and authorising their marketing as set out by Directive 2008/90/EC; its entry into force is foreseen on 1/1/2017.

In 2014, the European Commission presented a proposal to amend existing legislation on zootechnics[59]. The objective is to set up at EU level the zootechnical and genealogical conditions for trade in and imports into the European Union of breeding animals and their germinal products. This proposal also provides the

[54] http://ec.europa.eu/eip/agriculture/en/content/genetic-resources-cooperation-models
[55] Council Regulation (EC) 870/2004 of 24 April 2004 establishing a Community programme on the conservation, characterisation, collection and utilisation of genetic resources in agriculture and repealing Regulation (EC) No 1467/94.
[56] Directive 2008/62/EC: http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1399552280672&uri=CELEX:32008L0062 and Directive 2009/145/EC: http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1399552442848&uri=CELEX:02009L0145-20130828.
[57] Directive 2010/60/EU: http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1399553530246&uri=CELEX:32010L0060.
[58] Directives 2014/96 on labelling, sealing and packaging, 2014/97 on registration of suppliers and of varieties, 2014/98 on genus, implementing Directive 2008/90/EC
[59] http://ec.europa.eu/food/animal/zootechnics/docs/Zootechnics_2014_Proposed_Regulation_en.pdf

Commission with the necessary authority to take action where there is a risk to the protection of genetic diversity, including for domestic animals.

Target 3b – Increase the contribution of forestry to maintaining and enhancing biodiversity

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.**

(*) 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.

Socio-economic benefits of reaching this target: *Some studies indicate that the potential value of the services delivered by healthy forest ecosystems significantly exceeds that of timber production. The total value of marketed non-wood goods from European forests was over 2.75 billion EUR in 2010, including products such as cork, wild mushrooms, game, fruit and nuts, raw materials for medicines, colorants and aromatic products, wild honey and bee wax, to name just a few*[60]*. The same report underlines that forests are a major source of benefits for society: almost 4 million people in Europe earn their living in forestry and forest-based industries; forests protect settlements and infrastructure against natural and human-induced hazards; offer recreation opportunities, spiritual and cultural values and innumerable physical and mental health benefits . A recent study*[61] *of an urban forest in Germany found that it delivered multiple ecosystem services worth some €27 million per year – or just under €12,000/ha/year, related to local climate regulation, recreation, water retention and flood protection, erosion control, carbon sequestration and air quality improvement.. The UK Natural Capital Committee Report*[62] *(2015) finds that an increase of 750 000ha of woodlands would deliver net economic benefits of nearly GBP 550m per annum across Great-*

[60] FOREST EUROPE, UNECE and FAO 2011: State of Europe's Forests 2011. Status and Trends in Sustainable Forest Management in Europe. http://www.foresteurope.org/full_SoEF
[61] Lukas Sieberth (2014) Inwertsetzung von Ökosystemdienstleistungen - Eine objektive Bewertung auf lokaler Ebene – Remscheid
[62] The State of Natural Capital: Third Report to the Economic Affairs Committee (2015)

Britain; including market and non-market values from timber, recreation and impacts on greenhouse gases, with a benefit-cost ratio ranging from 5:1 to 6:1.

This target aims to use EAFRD funding to encourage the systematic use of forest management plans (or equivalent) with biodiversity measures that contribute to the targets in the EU Biodiversity Strategy.

Box 4 - The EU Forest Strategy

In 2013 the Commission adopted the New EU Forest Strategy[63] in response to new challenges facing forests and the forest sectors, to the increasing demands put on forests, and to the significant societal and political changes that have affected them over the last 15 years. The Strategy has three guiding principles:

- *Sustainable forest management* and the multifunctional role of forests, delivering multiple goods and services in a balanced way and ensuring forest protection;
- *Resource efficiency*, optimising the contribution of forests and the forest sector to rural development, growth and job creation; and
- *Global forest responsibility*, promoting sustainable production and consumption of forest products.

The strategy defines sustainable forest management as '**using forests and forest land in a way, and at a rate, that maintains their biodiversity**, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, **and that does not cause damage to other ecosystems**'.

The State of Nature in the EU brings together a wealth of information on the assessment of conservation status of species and habitats protected under EU nature legislation. However, European-wide harmonised data is widely lacking or not available at EU level for other habitats and species, and in particular for forest areas outside Natura 2000 sites. It has to be noted that while there is not a common forest policy, the EU has, while fully respecting the principle of subsidiarity, a long history of contributing through its policies to implementing sustainable forest management and to Member States' decisions regarding forests.

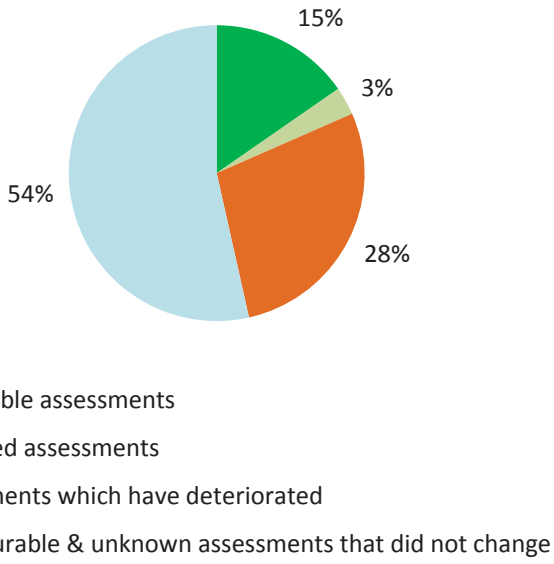
Measurable improvement in the conservation status of species and habitats that depend on or are affected by forestry and in the provision of ecosystem services as compared to the EU2010 Baseline

When using the information reported under the Habitats and Birds Directives (see target 1 for further explanation of the reporting process) a comparison is made between the status of species and habitats of

[63] http://ec.europa.eu/agriculture/forest/strategy/index_en.htm

Community interest associated with woodland/forest in the period 2001-2006 and the status of the same species and habitats in the period 2007-2012, there is no significant improvement. In relation to Annex I habitats from the Habitats Directive, favourable conservation assessments have decreased from nearly 17% to about 15% and the vast majority of individual assessments – about 80 per cent - remain unfavourable/unknown or have deteriorated. There is considerable variation across Europe's biogeographical regions: whereas in the Atlantic, Boreal and Steppic regions no woodland/forest habitats were found to be in a 'favourable' state over 30% in the Mediterranean and over 20% in the Alpine regions achieved favourable status.

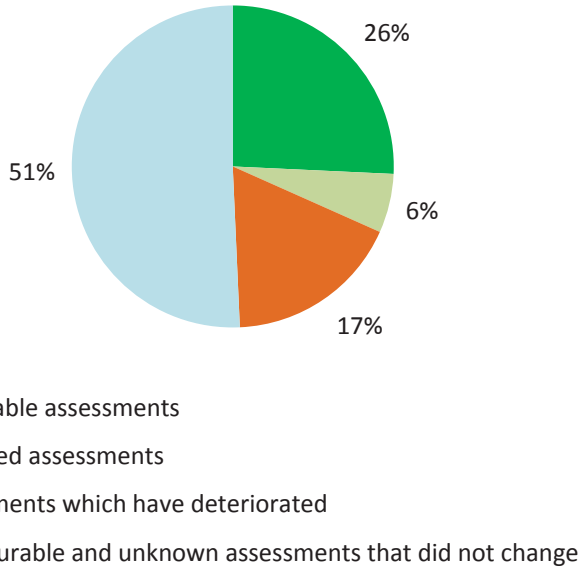
Figure 11 - Change (2007-2012 vs 2001-2006) in conservation status for Annex I habitats associated with woodland and forest ecosystem at EU 27 level



Source: EEA 2015

The conservation status of 26% of species associated with woodland/forest is favourable but around 70% are unfavourable/unknown or have deteriorated. The overall picture is therefore mixed.

Figure 12 – Changes in conservation status for non-bird species associated with woodland and forest ecosystems (2007-12)



Box 5: The importance of Europe's forests

From a historical low point about 200 years ago, Europe's forests have been recovering to cover some 40% of the EU territory today. A variety of different forest types cover the various geographical regions of Europe. They are remarkable ecosystems and a precious natural resource in many different ways. Among other things, they are home to many animals and plants; they protect us from floods and landslides; they remove carbon from the atmosphere and lock it away in their soils and biomass; they provide us with wood and other forest products; they are a source of employment; and they offer us a place for leisure and recreation. More than a quarter (26%) of EU forest and woodland are protected under Natura 2000.

In a global context, forest ecosystems in the EU are relatively young, uniform, intensely managed and fragmented. Very few natural, untouched forest ecosystems are left. Forest area increased by around 0.4% per year in recent decades but the rate of growth is currently slowing is down in several countries. Similarly, wood harvests were below annual growth and hence the wood volume in forests has increased for many years. Yet global competition for resources sharpens up, including for wood[64] and current EU policies to grow the bio-economy and the use of renewable energy sources[65] are likely to reinforce this global megatrend, driving the demand for timber and wood further up in the years to come.

European forests are largest reservoir of biodiversity compared to other terrestrial ecosystems. Nearly a quarter of the EU forest area is protected under Natura 2000 and 50% of the Natura 2000 network is covered by forest ecosystems.

[64] http://www.eea.europa.eu/soer
[65] http://ec.europa.eu/energy/en/topics/renewable-energy

Forests are also an important source of income both for many of the estimated 16 million private forests owners (some 60% of the EU forest area) but also for publicly owned forests. They contribute to rural development and provide some three million jobs. Wood is still the main source of financial revenue from forests, and an important raw material for bio-based industries.

PROGRESS IN IMPLEMENTING ACTIONS

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.

With 90% of total EU funding for forestry measures, the Rural Development Regulation is also the key financial resource to implement the EU Biodiversity Strategy in forest ecosystems.

The estimated annual cost for managing the Natura 2000 network is around € 6 billion and approximately half of the network is comprised of forested land. During the period 2007-2013, €5.4 billion was available for forestry measures under EAFRD: a similar level of funding is foreseen for the period 2014-2020[66]. Under the Rural Development Regulation, the receipt of support for holdings above a certain size threshold (to be determined by the Member State) shall be conditional upon the existence of a forest management plan or equivalent During the negotiations of the 2014-20 Rural Development Programmes EU Member States and regions were therefore encouraged to draw up new forest management plans where they do not exist yet, and to include in them a number ofbiodiversity-positive measures.
At the moment it is too early to assess to what extent Member States will include forestry related measures, including biodiversity positive measures, under the Rural Development Regulation.

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.

As mentioned under Target 2, action 5 the EU initiative on **Mapping and Assessment of Ecosystems and their Services** (MAES) will provide spatially referenced information on ecosystem condition and related ecosystem services. This information will facilitate spatial planning and other decision processes. Under this initiative, a dedicated pilot study on forest aiming to identify available knowledge that can be used to map forest ecosystems and assess their condition and the services they provide was set up. On 2nd December 2014, a dedicated workshop on "Mapping and Assessment of Ecosystems and their Services (MAES) in forest environment" was held with the participation of representatives from Member States, relevant

[66] http://ec.europa.eu/agriculture/forest/strategy/index_en.htm

stakeholders and international organizations. In this workshop, it was agreed to test the MAES framework and indicators with real forest data and maps and to develop a guidance document to map and assess forest ecosystems and their services in EU. The final report of this work, planned for end-2015, will illustrate by means of a series of case-studies the implementation of mapping and assessment of forest ecosystem services in different contexts and at three geographical levels i.e. regional, national and European-wide. The results of this work will be published on the Biodiversity Information System for Europe (BISE)[67].

As indicated in the section on horizontal measures - mobilising resources to support biodiversity, the new EU financial instrument on **Natural Capital Financing Facility** (NCFF) will provide financing opportunities in the form of loans or equity investments for revenue-generating or cost-saving pilot projects promoting the preservation of natural capital, including climate change adaptation projects. Projects involving payments for the flows of benefits resulting from forest ecosystems (PES) are potentially eligible for funding. They are based on the beneficiary pays principle: the beneficiary of an ecosystem service pays the provider for securing that service. In addition to the NCFF, the European Investment Bank also provides support for forestry through priority lending streams-smaller enterprises, climate action and innovation/skills. Projects such as afforestation, renewable energy can be supported under this mechanism[68].

European Member States have been developing a variety of financing mechanisms to maintain and restore forest ecosystems and their services, and they are piloting new schemes, too. Examples include PES in public forests such as the Southern Finland Forest Biodiversity Programme (METSO), the KOMET Programme for forest conservation in Finland and Sweden, or the 'Woodland Carbon Code' in the UK.

Box 6: Examples of Payment for Ecosystem Services from forests

Southern Finland Forest Biodiversity Programme (METSO)

This programme was launched in 2002 to protect forest land in Southern Finland, where most forests are in commercial use by small scale non-industrial private landowners. The pilot programme introduced new voluntary conservation measures, under which landowners could:

- Contract their land for a fixed period;
- Establish a private protected area; and
- Sell the land to the state.

This ‘nature values trading’ mostly led to 10-year contracts and became the flagship instrument of the

[67] http://biodiversity.europa.eu

[68] http://www.eib.org/attachments/general/events/20150323_brussels_agriculture_rural_development_financing_a_growing_forest_sector_en.pdf

METSO pilot. Implementation emphasized nature values, which the compensation incentivized protecting. After the successful pilot, it was extended across the country in 2008 through the METSO II programme, excluding only the northernmost parts of the country, where conservation was already good. The criteria for eligible sites were defined in more detail, and administrators were trained in standardized interpretation of them. Compensation was based on lost timber income only ('opportunity cost') and nature values became simply eligibility criteria, not influencing the payments. In Finland, landowners have the right, and sometimes even responsibility, to produce timber and the compensation is for giving up a part of this.[69]

KOMET Programme, Sweden

This voluntary scheme, initiated by the Swedish Government and introduced in spring 2010 was a partnership of three government bodies with a budget of 11 million SEK in 2011for administrative costs and covering 9% of Sweden's forest land. It aimed to raise owners' awareness of the conservation value of biologically important forest, and encouraged them to enter nature conservation agreements or other forms of protection for them. Agreements may last for between 1 to 50 years, depending on the site's significance. Owners receive fixed-rate payments to compensate for limitations placed on their management in the interests of nature conservation. For habitat protection sites and nature reserves, owners receive full compensation plus an additional 25%.[70]

Mature Forest Reserves, France[71]

The focus is on water and forest fire prevention in the Massif des Maures. The service providers are the forests managed by the Office of National Forests. The mechanism consists of the water provider paying for maintaining a fuel break network, limiting the risk of wildfires, which can have negative impact on dam siltation and water quality. A study was conducted to assess the risks in case of fire. Funding comes from the Union for drinkable water distribution of the Corniche des Maures (SIDECM). The agreement duration is 4 years.

Romagna Acque S.p.a., Italy[72]

The aim is investing in water quality in water catchment (forest) area by a public company controlled by the local administrations (Province and Municipalities). The Dam was built in the 1982 with a capacity of 33M m3; more than 100M m3of high quality drinking water provided/year. The funding mechanisms is 25 years of constant investments in the catchment basin area (mainly forest area): an almost fixed amount of 4% of the total company revenues from water tariff, equal to an annual PES of 500,000 - 600,000 €. The cost of

[69] Primmer et al. (2010) cited by United Nations (2014) The Value of Forests: Payments for Ecosystem Services in a Green Economy. Available at: http://www.unece.org/fileadmin/DAM/timber/publications/SP-34Xsmall.pdf
[70] United Nations (2014) The Value of Forests: Payments for Ecosystem Services in a Green Economy. Available at: http://www.unece.org/fileadmin/DAM/timber/publications/SP-34Xsmall.pdf
[71] http://ec.europa.eu/environment/archives/ecoinnovation2012/2nd_forum/presentations/session2/2-4.pdf
[72] http://www.efi.int/files/attachments/publications/efi_policy_brief_7_eng_net.pdf

removing the soil from the dam-bed could have been 10 times higher in the same period

In public payment schemes, a public body is responsible for implementation, so there is a need to show public demand for the service and the cost-effectiveness of the mechanism.[73]

For example, in the water sector, public schemes are used to pay for the maintenance of forest areas and afforestation or reforestation to ensure high quality drinking water supply for municipalities.

Box 7: Example of Payment for Ecosystem Services for water from forest catchment

Copenhagen Energy PES scheme

During the last 20 years, Copenhagen Energy Corporation, which delivers drinking water to around one million consumers around Copenhagen, has seen a reduction in supply of about 14 million m³ of groundwater per year. One of the largest groundwater bodies used by Copenhagen Energy is the Vigersted Well Field from which also 5 million m³ per year are taken, equal to a year's consumption by 100,000 Copenhageners. Copenhagen Energy has therefore needed to protect this groundwater body through afforestation measures and the designation of well-head protection zones with no pesticides. Two forest-groundwater PES schemes have been developed to have two main effects:

- A change from agriculture to forests through afforestation of mainly broadleaf species.
- Restrictions on the use of fertilizers or pesticides in existing forest areas, and in some cases also replacing conifer stands with broadleaf tree species, to increase groundwater recharge.

To maintain quality of groundwater in the privately-owned forest adjacent to the Vigersted Well Field, Copenhagen Energy pays the private owner not to use pesticides on 95 hectares of the forest. In addition, Copenhagen Energy was able to buy 530 hectares of farm land on which broadleaf trees were then planted. Afforestation activities were implemented and managed by the state and local municipalities.[74]

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;

[73] United Nations (2014) The Value of Forests: Payments for Ecosystem Services in a Green Economy. Available at: http://www.unece.org/fileadmin/DAM/timber/publications/SP-34Xsmall.pdf
[74] Standing Forestry Committee, November (2008) cited by United Nations (2014) The Value of Forests: Payments for Ecosystem Services in a Green Economy. Available at: http://www.unece.org/fileadmin/DAM/timber/publications/SP-34Xsmall.pdf

– 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[75], in particular as regards the diversity of species, and climate change adaptation needs.

A Commission survey of Member States on Forest Management Plans [76] provides an overview of both the official requirements and the current practice 'on the ground' in many Member States. The survey shows that there are differences in the conception and use of Forest Management Plans between countries and, in some cases, regions. From the responses received, it appears that take-up of the measures referred to in Action 12 of the EU Biodiversity Strategy is limited. However, the amounts of dead-wood left in forests are increasing and many countries do require detailed biodiversity measures e.g. biodiversity management programmes or additional guidelines in Forest Management Plans for forests in designed nature conservation areas, such as Natura 2000 sites.

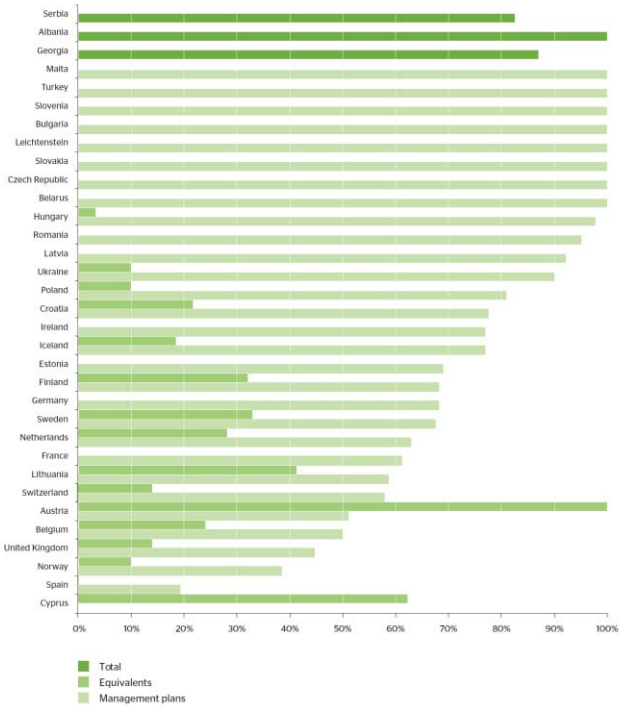
Woodland and forest represent nearly half of the Natura 2000 network[77] and more than one quarter of EU forests are part of Natura 2000 protected areas. Standard forest management practices apply to many of these forests, but many of them require also special measures to ensure a favourable conservation status of the forest species and habitat types covered under EU nature legislation. To help Member States determine and implement these measures, the Commission has been developing, together with Member States and stakeholders, a guide on 'Natura 2000 and Forests' which addresses some of these subjects.

The Commission has also published in June 2015, a call for tenders for a study on implementing sustainable forest management according to the EU biodiversity strategy and the EU bioeconomy strategy. This study will look, inter alia, how Forest Europe's Pan-European Operational Level Guidelines for SFM are being applied in today's forest planning, management and land-use operations in a number of EU Member States. The study will improve awareness and understanding of current practice, identify successful practices in a given regional context which may be considered 'good practice', and determine major gaps which should be addressed in the future[78].

[75] http://www.foresteurope.org/docs/MC/MC_lisbon_resolution_annex2.pdf
[76] http://ec.europa.eu/environment/forests/pdf/fmp_table.pdf
[77] http://www.eea.europa.eu/publications/state-of-nature-in-the-eu/annexes-a2013f
[78] https://etendering.ted.europa.eu/cft/cft-display.html?cftId=882

FOREST EUROPE's 2011 'State of Europe's Forests' report[79,80] identifies that for the 46 Forest Europe countries[81] with available data for 2010, around 90 percent of the forest area in these countries was under a Forest Management Plan or an equivalent. Countries such as Malta, Slovenia, Bulgaria, Slovakia, and Czech Republic reported that all forest area was covered by Forest Management Plans. In other Member States the figure is much lower. Data from Italy and Greece are not available.

Figure 13 - Percentage of forest area under management plans or equivalents, 2010



There has been a shift in forest management with an increase in the share of native tree species and steady decline of introduced tree species (e.g. in the Netherlands). Countries with a very low share, i.e. below 0.5 percent, of introduced tree species or no introduced tree species are Lithuania, Finland, Estonia, and Latvia. However, during the last ten years, an increase in introduced species has been observed for example in Bulgaria, France, Hungary, Iceland, Ireland, Portugal and Spain. The increase may be linked to the planting of introduced species for protective and wood production measures or expanding the forested area.[82]

[79] FOREST EUROPE, UNECE and FAO 2011: State of Europe's Forests 2011. Status and Trends in Sustainable Forest Management in Europe. Available at: http://www.foresteurope.org/documentos/State_of_Europes_Forests_2011_Report_Revised_November_2011.pdf?bcsi_scan_AB11CAA0E2721250=0&bcsi_scan_filename=State_of_Europes_Forests_2011_Report_Revised_November_2011.pdf

[80] The State of Europe's Forests 2015 report is due for publication later in 2015

[81] The State of Europe's Forests 2011 report covers the 46 FOREST EUROPE signatory countries and the European Union

[82] FOREST EUROPE, UNECE and FAO 2011: State of Europe's Forests 2011. Status and Trends in Sustainable Forest Management in Europe. Available at: http://www.foresteurope.org/documentos/State_of_Europes_Forests_2011_Report_Revised_November_2011.pdf?bcsi_scan_AB11CAA0E2721250=0&bcsi_scan_filename=State_of_Europes_Forests_2011_Report_Revised_November_2011.pdf

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PART 3/3

COMMISSION STAFF WORKING DOCUMENT

EU ASSESSMENT OF PROGRESS IN IMPLEMENTING THE EU BIODIVERSITY STRATEGY TO 2020

Accompanying the document

Report from the Commission to the European Parliament and the Council

The Mid-Term Review of the EU Biodiversity Strategy to 2020

{COM(2015) 478 final}

MID-TERM REVIEW OF THE EU BIODIVERSITY STRATEGY TO 2020

EU ASSESSMENT OF PROGRESS IN IMPLEMENTING THE EU BIODIVERSITY STRATEGY TO 2020

PART 3/3

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Target 4 – Ensure the sustainable use of fisheries resources and good environmental status

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.

** **The reformed Common Fisheries Policy (CFP) which entered into force in 2014 aims to ensure maximum sustainable yield (MSY) exploitation rates for all stocks by 2015 where possible and at the latest by 2020.***

Socio-economic benefits of reaching this target: *Maintaining healthy fisheries has important implications for fishing economies. E.g., the Eastern stock of adult bluefin tuna had fallen by 80% since the early 1970s. This is also reflected by evidence from a recent Spanish report on the "Evaluation of Ecosystem Services Applied to Fisheries Management"[1], stating that kg prices of Tuna have risen significantly: 1-2 € / kg in the mid-eighties to more than 10 € / kg in recent years. Bluefin tuna is showing signs of recovery for the first time in decades due to the implementation of a long-term recovery plan, which has allowed to increase catch quotas. This recovery has already translated into real economic benefits through better fishing prospects in 2015[2]. With respect to high seas fisheries, nearly 10 million tonnes of fish are caught annually on the high seas, constituting just over 12% of the global annual average marine fisheries catch of 80 million tonnes. The landed value of this catch is estimated at about US$16 billion annually, which makes up about 15% of the total global marine landed value of around US$109 billion. The World Bank estimates that mismanagement of fisheries represents an annual loss of US$50 billion to the global economy, in large part to the detriment of developing countries. The gain from sustainably managing global fisheries is estimated at total net present value of US$ 125 billion by 2020, even though the full benefits of rebuilding fish stocks would not be realized for several decades. The long-term (2013 – 2050) gain in resource rent is estimated to have a net present value of US $1,076.5 billion, yielding a long-term benefit-to-cost ratio of 4.3. WWF's report "Reviving The Ocean Economy The Case For Action – 2015" conservatively estimates that the annual "gross marine product" (GMP) – equivalent to a country's annual gross domestic product – is at least US$2.5 trillion; the total "asset" base of the ocean is at least US$24 trillion. The results illustrate the economic case for ocean conservation in stark terms. The economic benefits generated by the marine Natura*

[1] https://www.dropbox.com/s/heh2hmaynmfebcq/Informe%20EME%20Pesca.pdf?dl=0
[2] Bluefin tuna fishing season 2015: EU benefits from recovery of the stock (May 2015) http://europa.eu/rapid/press-release_IP-15-5034_en.htm

2000 network have been estimated at approximately 1.5 billion EUR per year in 2011 across the EU, and could increase to 3.2 billion EUR if the marine Natura 2000 coverage doubled[3].

Important progress has been made in the context of the EU's Common Fisheries Policy (CFP) since 2002 (linked in particular to the introduction of long-term management plans for several stocks) and since the adoption of the Marine Strategy Framework Directive (MSFD) in 2008, in particular in the northern waters where most stocks (for which total allowable catches (TACs) are in place) are managed under the MSY and the precautionary approach. However in the Mediterranean and the Black Seas 90% of assessed stocks remain overexploited[4].

EU policy aims to restore and maintain stocks above levels that can produce maximum sustainable yield (MSY) by achieving MSY exploitation rates by 2015 where possible and — on a progressive incremental basis — at the latest by 2020 for all stocks. It also aims to achieve good environmental status of Europe's seas by 2020, as required by the MSFD. Fishing at sustainable levels, improving the management of fish stocks and decreasing fisheries impacts on the ecosystem are considered as key aspects to reach the good environmental status target[5]. Therefore the most recent reform of the CFP, effective as of January 2014 and the implementation of which is well underway, will also play a crucial role in supporting the objectives and targets of the MSFD.

Box 1: Relation between Maximum Sustainable Yield and Good Environmental Status

The environmental objectives of the new CFP are[6]:

- to ensure that exploitation of living marine biological resources restores and maintains populations of harvested species above levels which can produce the maximum sustainable yield, while applying the precautionary approach. (This objective has been translated into a management target for the level of fishing pressure, namely that the maximum sustainable yield exploitation rate shall be achieved by 2015 where possible and at the latest by 2020 for all stocks.)
- to implement the ecosystem-based approach to fisheries management

The MSFD (2008) overall objective is to reach Good Environmental Status (GES) of the marine environment by 2020. For its descriptor D3 on commercial fish stocks, this means "Populations of all commercially

[3] ten Brink P., Badura T., Bassi S., Daly, E., Dickie, I., Ding H., Gantioler S., Gerdes, H., Hart, K., Kettunen M., Lago, M., Lang, S., Markandya A., Mazza, L., Nunes P.A.L.D., Pieterse, M., Rayment M., Tinch R., (2011). Estimating the Overall Economic Value of the Benefits provided by the Natura 2000 Network. Final Synthesis Report to the European Commission, DG Environment on Contract ENV.B.2/SER/2008/0038. Institute for European Environmental Policy / GHK / Ecologic, Brussels 2011
http://www.ieep.eu/assets/955/Economic_Benefits_of_Natura_2000_Network_Synthesis_report.pdf

[4] COM(2015) 239 final

[5] http://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index_en.htm.

[6] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013R1380

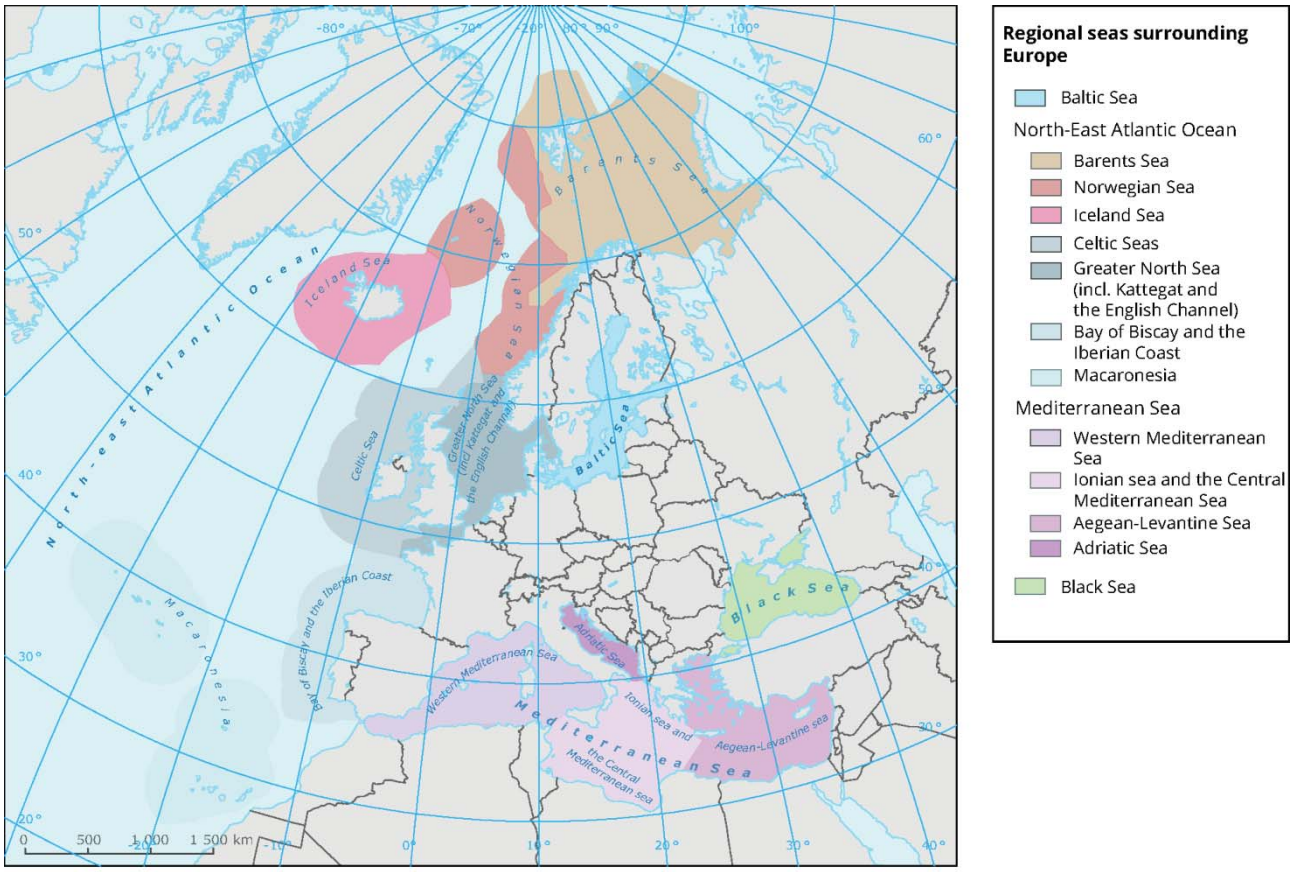
exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock". Concretely this means:

- Level of pressure of the fishing activity
- Reproductive capacity of the stock
- Population age and size distribution[7]

PROGRESS IN IMPLEMENTING ACTIONS

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.

Figure 1 – Regional seas surrounding Europe



[7] Commission Decision 2010/477/EU on criteria and methodological standards on good environmental status of marine waters.

Overfishing has been reduced in the European Atlantic waters, the North Sea and the Baltic Sea. For the stocks with MSY assessments, overfishing has gone down from 94% of the stocks in 2003, to 63% in 2009 and to 41% in 2012. An increasing proportion of the stocks have been assessed.

The number of stocks that, according to available estimates, are fished at levels corresponding to MSY has gone up from only 2 in 2003, to 13 in 2009 and to 26 in 2015. In the North East Atlantic 62 stocks have estimates of Fmsy (Fishing mortality consistent with achieving MSY), of those, 32 were found not to exceed Fmsy in 2015[8].

In the Mediterranean for the most recent assessment of 15 stocks among the demersal and small pelagic stocks, 13 are currently being exploited at rates not consistent with achieving MSY (overfishing is occurring) and 2 stocks were not assessed due to data deficiencies or poor model fits[9]. In the Black Sea, seven of the most recent stock assessments are considered to be of sufficient quality to provide analytical estimates of recent exploitation rates and stock status in relation to proposed biological reference points.[10] Of the seven carried out, six where found to be exceeding MSY. However, with the emphasis of the new CFP on achieving MSY for all commercial stocks, more significant reduction of overfishing also in these European waters is expected.

The EU 2020 Biodiversity Strategy and the new common fisheries policy aim to promote the sustainability of all stocks where the EU fleet operates, including those within external waters, such as the exclusive economic zones of other countries (accessed through bilateral fisheries agreements), or the high seas managed by regional fisheries management organisations.

13b) The Commission and Member States will develop and implement under the CFP long-term management plans by fixing fishing opportunities such as quotas in line with scientific advice 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.

As of April 2015 there are a total of 12 multiannual fisheries plans in place for EU waters[11] (8 within the north-east Atlantic; 2 in the Mediterranean and 2 in the Baltic Sea). Agreement of plans has been hindered in the past by a dispute between the European Council and the European Parliament, however in 2013 a task force was appointed and in April 2014 it produced an agreement on how to proceed with approving multi

[8] http://ec.europa.eu/dgs/maritimeaffairs_fisheries/consultations/fishing-opportunities-2016/index_en.htm See annex: http://ec.europa.eu/dgs/maritimeaffairs_fisheries/consultations/fishing-opportunities-2016/doc/com_2015_239_annex_en.pdf

[9] http://stecf.jrc.ec.europa.eu/documents/43805/823106/2014-12_STECF+14-17+-+Med+stocks+assessments+-+part+1_JRC93120.pdf

[10] http://stecf.jrc.ec.europa.eu/documents/43805/853348/2014-11_STECF+14-14+-+Black+Sea+assessments_JRC92536.pdf

[11] http://ec.europa.eu/fisheries/cfp/fishing_rules/multi_annual_plans/index_en.htm.

annual plans[12]. The new multi annual plan for the Baltic is the first since the agreement to be approved by the European Parliament in April 2015[13] and three more multi annual plans are expected to follow in the coming years. These multi-stock or mixed fisheries plans will replace the 12 single-stock plans, making further progress in relation to long-term management strategies in the harvesting of commercial stocks.

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.

The number of stocks with full MSY assessments (in the Atlantic, North Sea and Black Sea) increased from 34 in 2005 to 46 in 2014. Significant progress has been made in the number of stocks with quantitative advice from almost 100 in 2003 to over 120 in 2014, bringing down the number of data-poor stocks to less than 10 % of the total (in 2013)[14]. There are, however, data gaps, particularly in the Mediterranean and the Black Seas.

The JRC is engaged in the Assessment for All (a4a) initiative aimed at providing a comprehensive and versatile tool to assess all fish stocks harvested in European waters under the remit of the Common Fisheries Policy[15]. The model fills the gap of conventional stock assessment methods that are not able to cope with such large numbers of stocks such as the (300+ stocks) covered by the Data Collection Framework.

14a) The EU will design measures to gradually eliminate discards, to avoid the by-catch of unwanted species and to preserve vulnerable marine resources and marine ecosystems in accordance with EU legislation and international obligations.

Fisheries have been identified as one of the main pressures on marine species and habitats. In support of reducing the adverse impact of fishing on non-target species and marine ecosystems, the new Common Fisheries Policy includes a specific landing obligation to eliminate discards[16], aiming to reduce bycatch of non-target species. The landing obligation will be implemented fishery by fishery, either through multi annual plans, or specific discards plans[17]. This change in regime serves as a driver for more selectivity, and provides more reliable catch data.[18] Already in 2004 a Council Regulation[19] laid down measures concerning

[12] http://www.europarl.europa.eu/meetdocs/2009_2014/documents/pech/dv/taskfor/taskforce.pdf
[13] http://www.europarl.europa.eu/news/en/news-room/content/20150427IPR46519/html/MEPs-vote-for-sustainable-fishing-in-the-Baltic-Sea
[14] http://ec.europa.eu/dgs/maritimeaffairs_fisheries/consultations/fishing-opportunities-2015/doc/com-2014-388_en.pdf
[15] https://ec.europa.eu/jrc/en/news/stock-assessment-methods-sustainable-fisheries?search
[16] http://ec.europa.eu/fisheries/cfp/fishing_rules/landing-obligation/index_en.htm
[17] http://ec.europa.eu/fisheries/cfp/fishing_rules/discards/index_en.htm
[18] http://ec.europa.eu/fisheries/cfp/fishing_rules/discards/index_en.htm.

incidental catches of cetaceans. To reduce seabird bycatch the Commission has also developed an 'Action plan for reducing incidental catches of seabirds in fishing gears'.[20] However, the most recent review of information carried out by ICES in 2014 concluded that better quality data on bycatch rates and fishing effort from more fisheries is required from Member States[21]. .

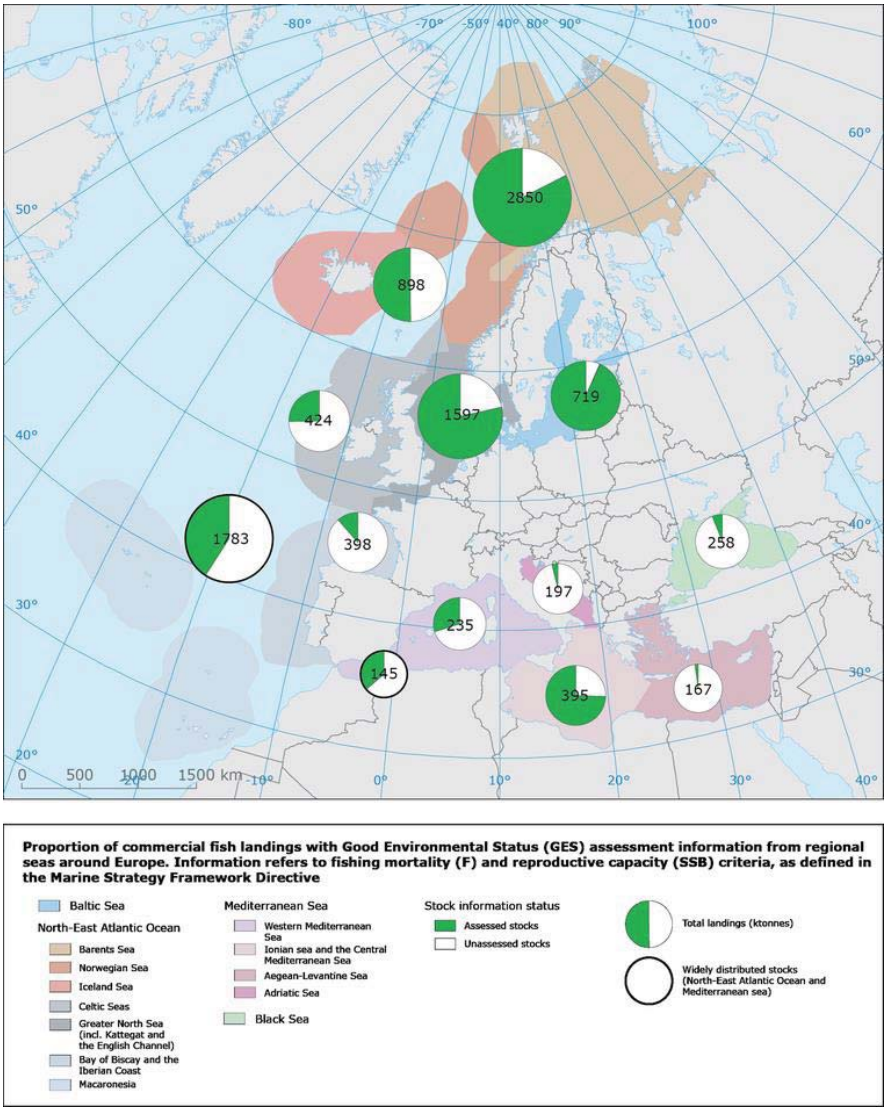
14b) The Commission and Member States will support the implementation of the Marine Strategy Framework Directive, including through providing financial incentives through the European Maritime and Fisheries Fund Regulation (EU) N° 508/2014 for marine protected areas (including Natura 2000 areas and those 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.

The new European Maritime and Fisheries Fund provides funding opportunities for various actions that can support the implementation of the Marine Strategy Framework Directive, e.g. projects limiting the adverse effect of fisheries on marine ecosystems, projects supporting MS efforts to increase Natura 2000 coverage and improve site management, projects improving marine knowledge etc. The operative programmes submitted by Member States are currently being adopted by the Commission.

The main goal of the MSFD is to achieve GES of EU marine waters by 2020. The type of indicators that can be used to assess the implementation of the MSFD includes the EEA status of marine fish stocks indicator (core set indicator CSI032) [22], which provides information on both the status of the stocks in relation to GES, and the availability of information to assess the stocks The text box titled "**Relation between Maximum Sustainable Yield and Good Environmental Status**" shows how this indicator is related to MSY. Most European landings of commercial fish and shellfish stocks come from the North-East Atlantic Ocean and Baltic Sea (86%) (see Figure 2). Approximately 60% of European landings come from stocks that are assessed - i.e. that have Good Environmental Status assessment information - although this is variable for the two analysed GES criteria on fishing mortality (F) and spawning stock biomass (SSB). There is, however, a clear trend from north to south, with most of the landings coming from assessed stocks in the north (more than 90% in the Baltic sea) and less than 10% of the landings in some of the southern (Mediterranean and Black sea) regions[23].

[19] Council Regulation (EC) No 812/2004 of 26.4.2004 laying down measures concerning incidental catches of cetaceans in fisheries and amending Regulation (EC) No 88/98.
[20] http://ec.europa.eu/fisheries/cfp/fishing_rules/seabirds/seabirds_communication_en.pdf.
[21] http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/2014/Bycatch_of_small_cetaceans_and_other_marine_animals.pdf
[22] http://www.eea.europa.eu/data-and-maps/indicators/status-of-marine-fish-stocks-2/assessment
[23] http://www.eea.europa.eu/data-and-maps/indicators/status-of-marine-fish-stocks-2/assessment

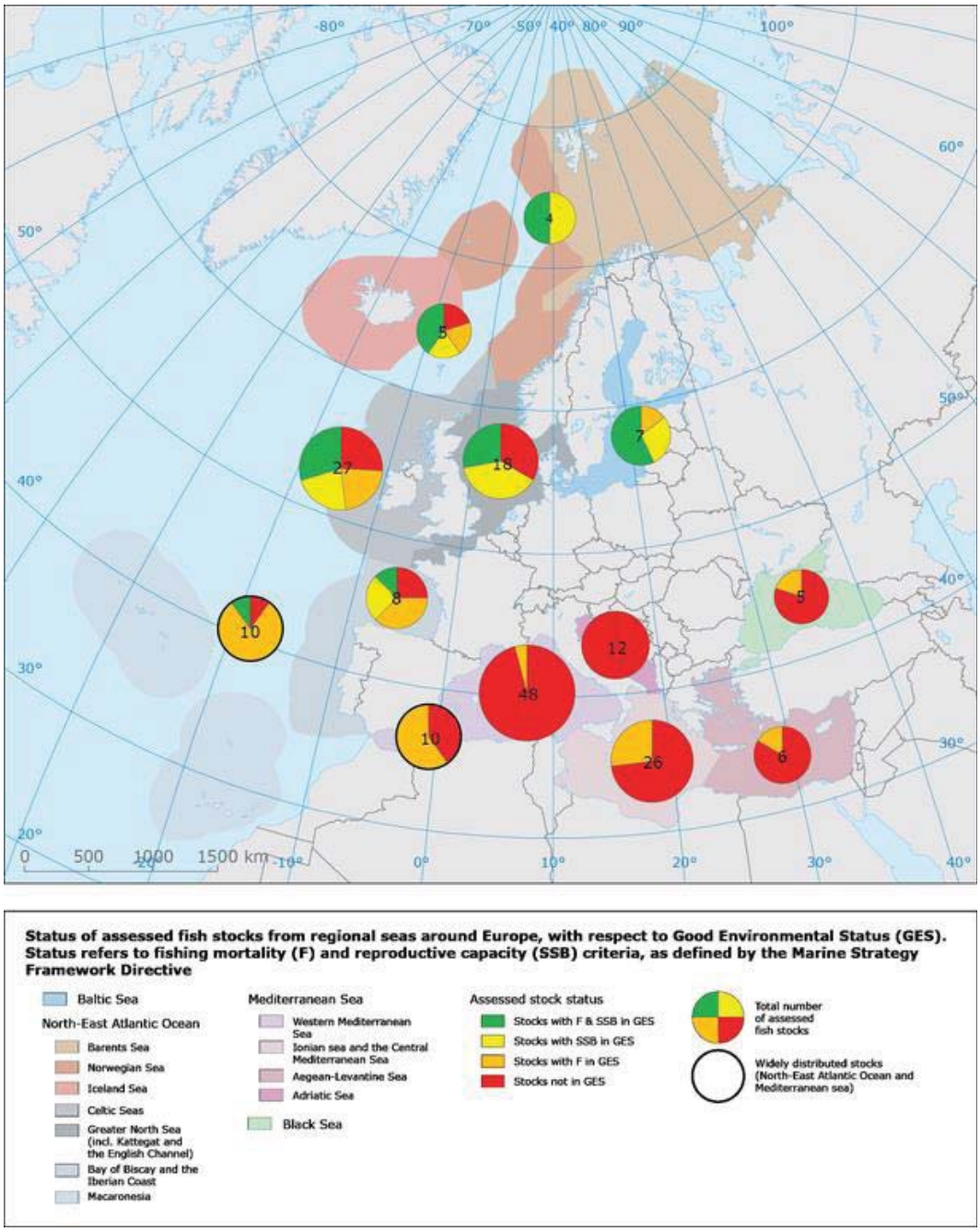
Figure 2 - Commercial fish landings with Good Environmental Status information



Currently, most of the assessed commercial stocks in European waters (58 %) are not in GES, with 19 % of the stocks exploited sustainably, 11 % with their reproductive capacity intact, and only 12 % considered in GES (i.e. fulfilling both F and SSB MSY criteria for GES) (core set indicator CSI032). These percentages vary considerably between regional seas. In North East Atlantic and Baltic waters, 22 % of the regionally assessed stocks are not in GES, 24 % are exploited sustainably, 25 % have their reproductive capacity intact, and 29 % are in GES. The situation is worse in the Mediterranean and Black Sea, with 84 % of the regionally assessed stocks not in GES and 16 % exploited sustainably. Estimates for status of reproductive capacity are not available for these stocks. Hence, no stocks can be considered in GES in these regional seas. [24]

[24] EEA Report No 2/2015 State of Europe´s seas. http://www.eea.europa.eu/publications/state-of-europes-seas

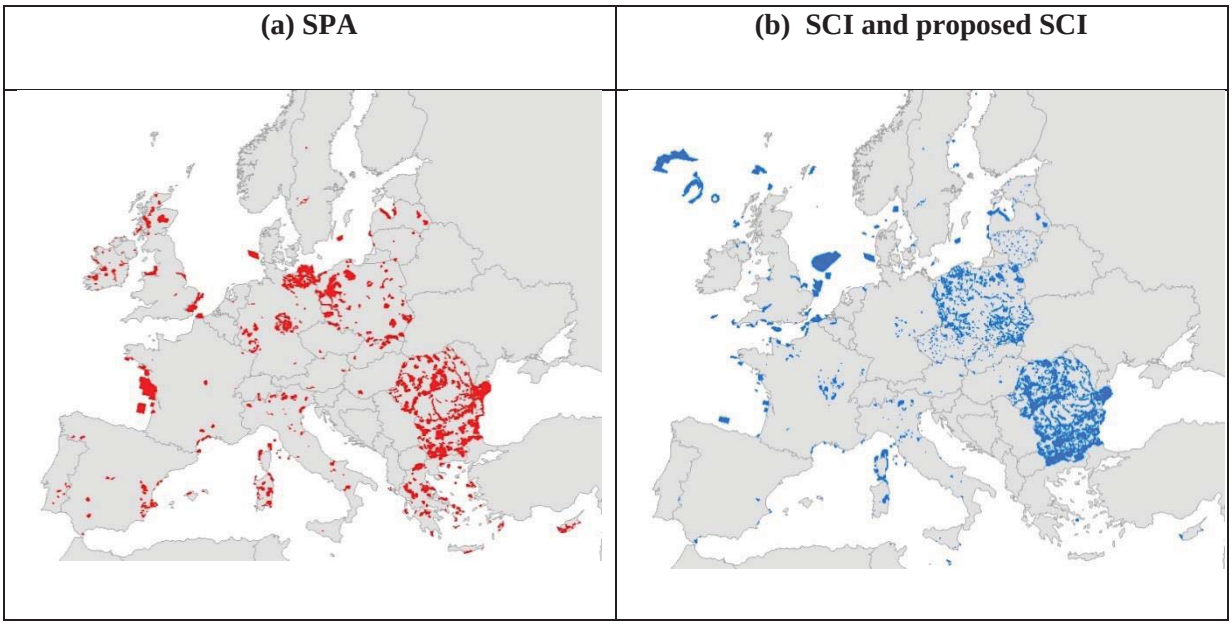
Figure 3 - Proportion of assessed stocks per regional sea that are in Good Environmental Status (GES), as described in the Marine Strategy Framework Directive.



The network of marine protected areas (MPAs) is growing, made up of both Natura 2000 sites and other designations. Data on Natura 2000 sites is given by the Natura 2000 Barometer[25] and the European Environment Agency is working on a new MPA indicator.

[25] http://ec.europa.eu/environment/nature/natura2000/barometer.

Figure 4 - Sites added to the Natura 2000 network during the reporting period (2007-12)



Note: a site may be both SPAs & SCIs

Source: Natura 2000 database & associated spatial files for end 2012. Sites shown are those where SCI or SPA date is between 01/01/2007 and 31/12/2012

The **marine component of Natura 2000** grew slowly at first, partly due to lack of knowledge and partly as it was not until 2005 that it was agreed that the two nature directives apply offshore (EC 2007). By 2014 Natura 2000 covered some four percent of the EU marine areas within 200 nautical miles of the coast.

The MS reported 1 573 marine SCI with an area of 177 325 km^2, Although not shown by the Article 17 reports, it is clear from Map 4.2 that only in the Atlantic are there significant areas offshore (i.e. more than 12 nautical miles from the coast).

As with the Natura 2000 network as a whole, the area and number of marine sites has grown significantly over time. However, unlike the terrestrial sites, the majority of growth has taken place over this reporting period with the marine area of SCI and SPA sites increasing by 12.7 and 6.7 million ha, respectively, over the Article 17 and 12 reporting periods. This represents a massive 163.5 % and 113.2 % increase in total area relative to 2006 for SCI and 2007 for SPAs, respectively. The United Kingdom (with 7.3 million ha) and France (with 4.2 million ha), rank 1st and 2nd highest in total marine site area, followed by Germany, Denmark, the Netherlands, Spain and Sweden, which also have sizeable marine areas.

In 2012, there were 7725 MPA sites covering 338 600km^2. The Natura 2000 network covers 4 % of European waters and other protected areas account for 1.9 %, making a **total of 5.9 % of European waters as marine protected areas**. Currently only three regional seas (Western Mediterranean and Greater North Sea — including Kattegat & English Channel and Baltic Sea) have MPA coverage above 10 %. The EEA has calculated that another 230 000 km^2 will be required to have protected area status, and effective area-

based conservation measures in place to achieve Aichi Biodiversity Target 11, i.e. for there to be '10 % cover of both coastal and marine/offshore marine protected sites.'

In addition to MPA's Member States can uses the EMFF to protect and restore marine biodiversity and ecosystems, through initiatives such as the collection of waste by fishermen from the sea such as the removal of lost fishing gear and marine litter in the framework of sustainable fishing activities. In the context of the preparation of the Circular Economy Strategy, the Commission will examine how marine litter can be prevented efficiently through improved waste, in particular plastic waste, management, increased recycling, avoidance of single use products and product eco-design (e.g. to minimise release of microplastics in the marine environment)

In terms of the MSFD's objective of achieving GES, available information on EU marine biodiversity is scarce. 80% of habitats and species under the MSFD are categorised as unknown, and only 4% have achieved the target of good status. Observations show that many marine species across all Europe's regional seas continue to experience a decrease in population size as well as a loss of distribution range and habitat. Effects of climate change, in particular acidification, add to the cumulative impacts of overfishing, pollution, habitat destruction and invasive alien species. Marine biodiversity monitoring remains a major need to be addressed both at national and regional level to improve marine knowledge. Developing marine biodiversity indicators and ensuring funding for monitoring are therefore among the key challenges for the successful implementation of MSFD.

The mapping of seabed related ecosystem services will be displayed on the European atlas of the seas[26] in 2015. Compilation of the geospatial knowledge of the distribution seabed habitats covers 98% of the adjacent EU seas. In parallel, a matrix of the ecosystem services provided by each habitat was compiled based on published information. This is an expert-based presence-only matrix with services harmonized to CICES v. 4.3. Results of the analysis highlight the importance of continental shelves and slopes as well as oceanic elevations like seamounts, ridges and island flanks.

[26] http://ec.europa.eu/maritimeaffairs/atlas/index_en.htm

Target 5 – Combat Invasive Alien Species

By 2020, Invasive Alien Species 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.

***Socio-economic benefits of reaching this target**: Invasive Alien Species are causing damage to the EU economy estimated at least 12 billion Euros annually[27]. It is estimated that 10-15% of the alien species present cause damage which is borne by society at large as well as by businesses, including primary producers and landowners[28]. The most affected sectors include agriculture, fisheries and aquaculture, forestry and health. Reaching the target would significantly reduce these costs. For example, Zebra mussels can cause economic damage by blocking pipes, vents or holes for the passage of water: a major macrofoulant of power generating plants, industrial and municipal water systems. The yellow-legged hornet is a highly effective predator of native bees and other beneficial insects, causing damage to pollinators and apiculture. Killer shrimp can quickly dominate the invaded habitats directly affecting fisheries quality with consequent impacts on recreational use of water bodies[29].*

Invasive alien species have become one of the fastest growing threats to biodiversity in Europe, affecting human life and health as carriers of diseases or as allergens, and also causing significant damage to agriculture, forestry, fisheries, etc. to the value of at least EUR 12 billion a year in the EU[30]. Scenarios have shown that the increasing global movement of people and goods contributes to an increasing amount of IAS in Europe in the future. Furthermore, the impact of climate change could potentially provide for new opportunities for IAS to spread and proliferate.

The pressure of IAS is expected to be steadily increasing over the next decade if significant actions are not implemented (GBO-4)[31]. To adequately address this problem, Europe has been developing a number of tools over the years. For example, in 2003 the Bern Convention adopted the European Strategy on IAS (Genovesi & Shine 2004), on the basis of which the European Union (EU) has been working to develop a dedicated policy and legislation on the issue. This work eventually resulted in the adoption of the EU Regulation No 1143/2014, which entered into force on 1st January 2015 (herewith referred to as the EU Regulation on IAS).

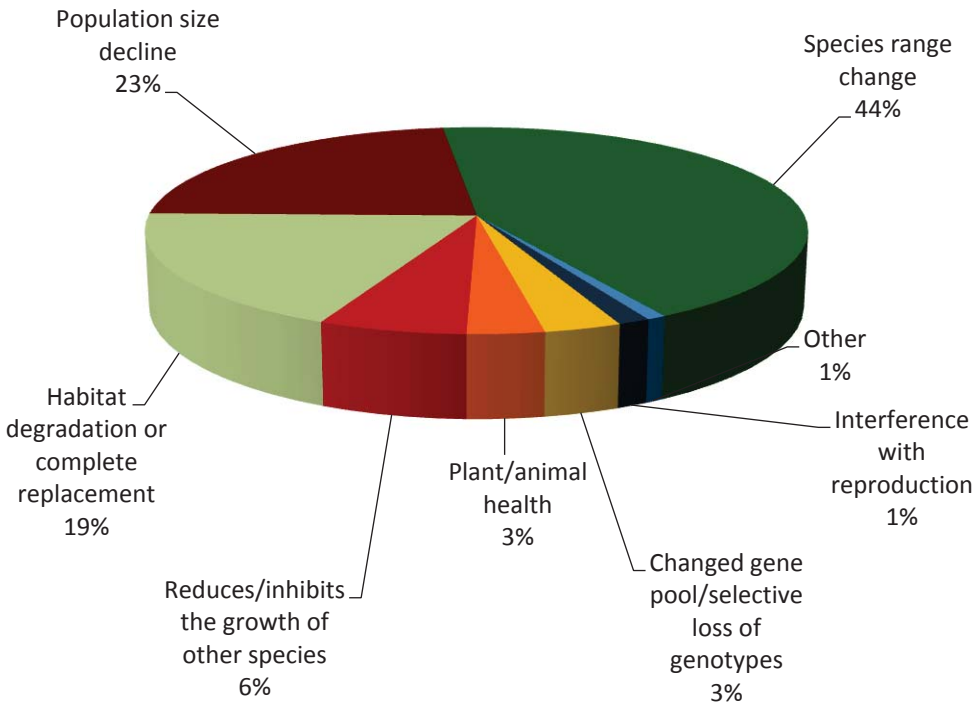
[27] Kettunen, M., Genovesi, P., Gollasch, S., Pagad, S., Starfinger, U. ten Brink, P. & Shine, C. 2008. Technical support to EU strategy on invasive species (IAS) - Assessment of the impacts of IAS in Europe and the EU (final module report for the European Commission). Institute for European Environmental Policy (IEEP), Brussels, Belgium. 44 pp. + Annexes. http://www.ieep.eu/assets/448/ias_assessments.pdf
[28] Vila *et al.*, 2010
[29] SFD (2013) 321 final
[30] Kettunen et al. 2009
[31] https://www.cbd.int/gbo4/

Priority species

Regarding the **number of alien species** in Europe, the European Alien Species information Network - EASIN[32] - catalogue includes 11,372 species with the status of alien to Europe. The number of invasive alien species is constantly increasing in Europe, with a rate of 76% in the 1970-2007 period[33].

According to a recent IUCN assessment of more than 9000 fauna and flora species encompassing all taxonomic groups (animals, plants, fungi, bacteria, chromista and protozoa) and environments (marine, terrestrial, freshwater), 20 % of them are threatened at European level and 19 % of these threatened species (229 animals, 124 plants and 1 fungus) are specifically affected by IAS.

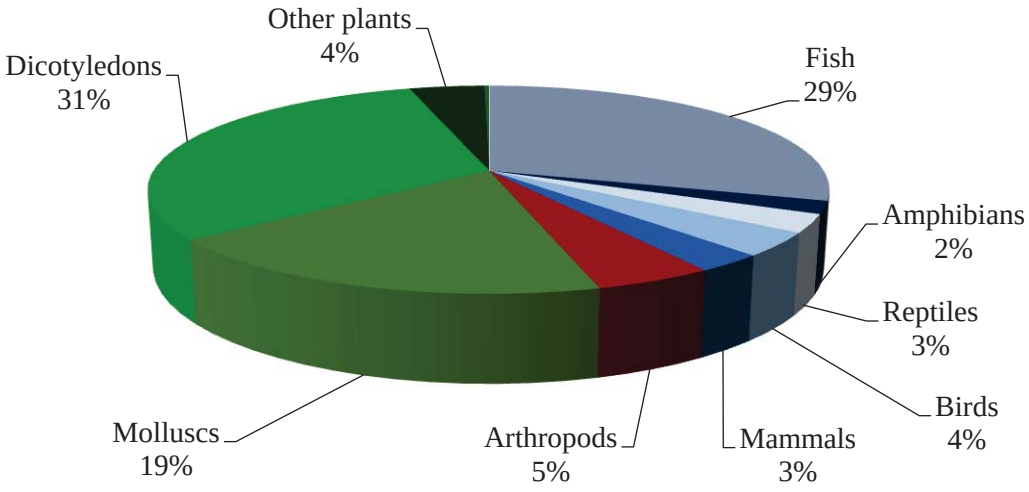
Figure 5 - Impact of invasive alien species on threatened species. The "Others" category includes soil erosion, indirect mortality, ecosystem change



Plants account for 35% of the total number of species particularly affected by invasive alien species,, followed by freshwater fish, molluscs and arthropods (see Figure 6).

[32] http://easin.jrc.ec.europa.eu/
[33] Butchart et al. 2010

Figure 6 - Percentage of species affected by IAS for the main taxonomic groups



Invasive alien species can also be the cause of habitat degradation or complete replacement/loss - with the local extinction of impacted species as in the case of the red squirrel (*Sciurus vulgaris*) in areas of expansion of the American grey squirrel (*Sciurus carolinensis*) (Bertolino et al. 2014) - that reached 19% of the impact outcomes.

Box 2: The success recovery of the Yelkouan shearwater (*Puffinus yelkouan*)

This "threatened" seabird has been recently object of a LIFE project aimed at the removal of black rats (*Rattus rattus*) from the island of Montecristo, where the shearwater nests with an estimated population of 400-750 pairs (3-10% of the known world population at the time). In this case the successful eradication of black rats allowed 93-95% of pairs to successfully fledge juveniles over two years. As a result, the number of breeding pairs is expected to increase over the next ten years, with an expansion of the breeding colonies in the Tuscan Archipelago[34].

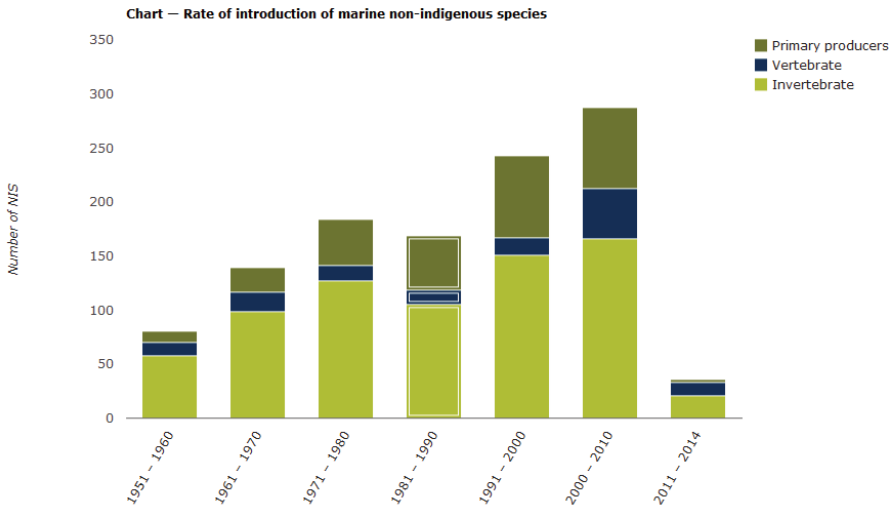
Latest findings on the 2015 State of Europe´s seas report on the **impact of invasive alien species on the environmental status of marine waters** show that invasive species are on the rise, hitting particularly hard the Mediterranean Sea through, for example, competition from invasive species like *Caulerpa racemosa* and *Caulerpa taxifolia*, which overgrows corals like *Cladora caespitose*. Pollution and overfishing facilitated the invasion of the alien combjelly *Mnemiopsis leidyi* and its significant impact on the Black sea and Sea of Azov ecosystems in the late 1980s, which led to fisheries collapse. But its predation by another alien

[34] http://www.montecristo2010.it/stealthV3_pubblica/0840425A0S1345033092.pdf

combjelly species, *Beroe ovata*, which arrived in 1999, has meant that the Black Sea ecosystem shows signs of recovery.

As shown in Figure 7, the current rate of introductions of NIS is unprecedented. Approximately 323 new species have been registered in European seas since 2000, although there are important regional differences. The Mediterranean is the European sea with the largest number of NIS. 63 % of these species are invertebrates – mostly crustaceans and molluscs. 25 % are primary producers such as marine plants and algae, while 12 % are vertebrates – mostly fish.

Figure 7 - Rate of introduction of marine non-indigenous species[35]



Source: EEA (2015) Trends in marine non-indigenous species (http://www.eea.europa.eu/data-and-maps/indicators/trends-in-marine-alien-species-mas-2/assessment)

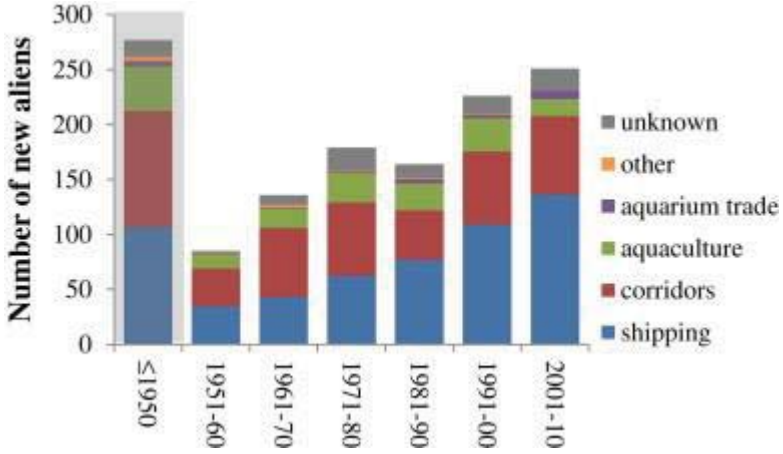
Priority pathways

According to the State of Europe´s seas report, available information shows that the main pathway of non-indigenous species introduction in European seas is shipping (51 %), followed by the Suez Canal (37 %), aquaculture-related activities (17 %), the aquarium trade (3 %), and inland canals (2 %). Large scale biodiversity patterns are modified causing entire shifts to the novel habitats, with substantially modified ecosystem functions.[36]

[35] http://www.eea.europa.eu/data-and-maps/indicators/trends-in-marine-alien-species-mas-2/assessment

[36] Katsanevakis S, Coll M, Piroddi C, Steenbeek J, Ben Rais Lasram F, Zenetos A and Cardoso AC (2014) Invading the Mediterranean Sea: biodiversity patterns shaped by human activities. Front. Mar. Sci. 1:32. doi: 10.3389/fmars.2014.00032.

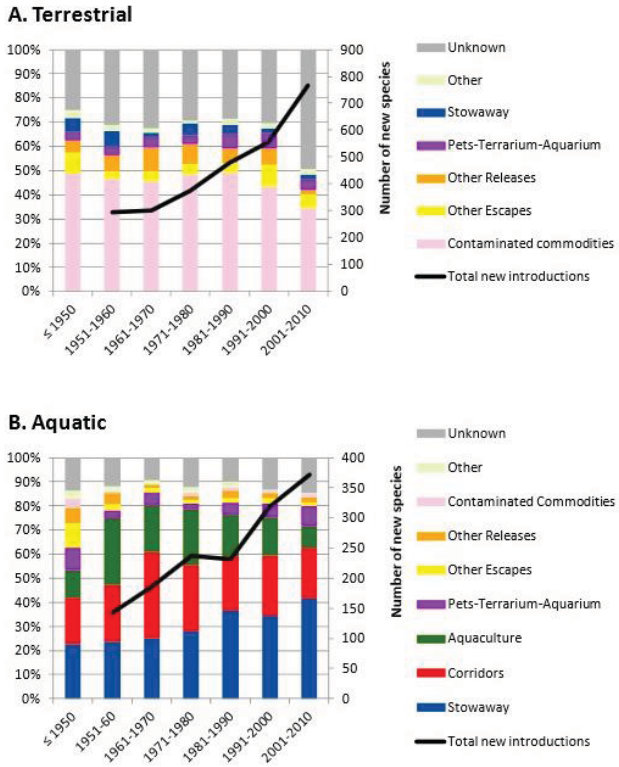
Figure 8 - Invading European Seas: Assessing pathways of introduction of marine aliens



Source: Katsanevakis et al. (2013)

Temporal trends in the numbers of new recorded marine aliens in Europe in relation to the pathways of introduction. Some species (n = 103) that were linked to more than one pathways were given a value of $1/k$ for each of the k associated pathways so that the overall contribution of each species to the total number of new aliens per decade was always 1.[37]

Figure 9 - Trends and temporal variation of the importance of main pathways of introduction in Europe, of terrestrial (A) and aquatic (B) alien species[38]



[37] Katsanevakis et al. (2013) Invading European Seas: Assessing pathways of introduction of marine aliens
[38] Katsanevakis et al. (2015) European Alien Species Information Network (EASIN): supporting European policies and scientific research

Source: Katsanevakis et al. (2015) European Alien Species Information Network (EASIN): supporting European policies and scientific research

Trends of new introductions (Figure 9) are valuable indicators for assessing the effectiveness of management measures, as the outcome of targeted measures for a specific pathway should be reflected in a decreasing trend.

Box 3: Important remaining gap: the EU ratification of the Ballast Water Management Convention

Since the introduction of steel-hulled vessels around 120 years ago, water has been used as ballast to stabilize vessels at sea. Ballast water is pumped in to maintain safe operating conditions throughout a voyage. While ballast water is essential for safe and efficient modern shipping operations, it may pose serious ecological, economic and health problems due to the multitude of marine species carried in ships' ballast water. As global response, the International Convention for the Control and Management (BWM) of Ships' Ballast Water and Sediments (BWM Convention) was adopted by consensus on 13 February 2004.

The Commission has 'strongly recommended' the ratification of the Convention and has participated in the development of interim measures to reduce the risk of non-indigenous species being introduced through the discharge of ship's ballast water in the four Regional Seas Organisations (HELCOM, the OSPAR Commission, REMPEC/Barcelona Convention and the Black Sea Commission)[39]. As of 10 April 2015, 7 EU Member States have ratified the Convention: Croatia, Denmark, France, Germany, the Netherlands, Spain and Sweden.[40]

PROGRESS IN IMPLEMENTING ACTIONS

2

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

Animal health - Emerging infectious diseases play an important role in causing species to become extinct. . It is under the competence of the Member States to prevent or control wildlife diseases including those affecting the biodiversity.

However, in the future, the new Animal Health Regulation[41] will, following an appropriate risk assessment, provide for a possibility to take actions also at the EU level for animal diseases that

[39] http://www.emsa.europa.eu/implementation-tasks/environment/ballast-water.html
[40] IMO (2015, May) Status of Conventions. http://www.imo.org/About/Conventions/StatusOfConventions/Pages/Default.aspx
[41] http://ec.europa.eu/food/animal/animal-health-proposal-2013_en.htm

affect wildlife and pose a threat to biodiversity. Wildlife diseases have been included in the Commission proposal for a new Animal Health Regulation and diseases of wild plants are being addressed through the plant health regime[42].

Box 4: An example of emerging infectious disease threatening wildlife

The cytric fungus *Batrachochytrium salamandrivorans* has already caused rapid declines in the European fire salamander populations, and research further confirms that the fungus is particularly lethal for Salamandridae family, with 41 out of 44 of the Western Palearctic salamanders rapidly dying after being exposed to *B. salamandrivorans*[43]. The detection of the *B. salamandrivorans'* DNA suggests that the fungus is long-term endemic to Asia, with a recent incursion to Europe, where the fungus has caused severe outbreaks in Belgium and the Netherlands. The cause behind the introduction of the fungus is suggested to be pet trade in Asian salamanders and newts, as they are traded in large numbers annually.

Plant health – Contrary to the animal health regime, the Council Directive 2000/29/EC has already been addressing pests affecting natural ecosystems, in particular forests. An analysis by a group of scientists[44] showed that from 276 species addressed through the EU plant health regime, 37 (or 13%) may have an important ecological impact.

Species addressed under plant health	invertebrates	pathogens	total
Ecological impact may be important	20	17	37
Ecological impact cannot be excluded	54	27	81
Ecological impact very unlikely	31	84	115
Not alien to Europe	14	9	23
Widely spread	15	5	20
Total	134	142	276

16) The Commission will fill policy gaps in combating IAS by developing a dedicated legislative instrument by 2012.

[42] http://ec.europa.eu/food/plant/plant_health_biosecurity/legislation/new_eu_rules/index_en.htm

[43] Martel et al. (2014) Recent introduction of a chytrid fungus endangers Western Palearctic salamanders, Science 31 October 2014: Vol. 346 no. 6209 pp. 630-631, DOI: 10.1126/science.1258268

[44] Invertebrates assessed by Dr. Marc Kenis (CABI Switzerland), Dr. Alain Roques (INRA Zoologie Forestière, Orléans, France) and Dr. Wolfgang Rabitsch (Environment Agency Austria, Vienna, Austria), pathogens assessed by Dr. Alberto Santini (Institute for Sustainable Plant Protection - C.N.R, Sesto Fiorentino (FI) Italy and Prof. Andrea Vannini (University of Tuscia, Viterbo Italy)

The EU adopted a regulation on the prevention and management of the introduction and spread of invasive alien species, which entered into force on 1 January 2015[45]. The objective of the Regulation is to establish a framework for action to prevent, minimise and mitigate the adverse impacts of invasive species on biodiversity and ecosystem services. Furthermore, it will seek to limit social and economic damage. This will be achieved through measures to ensure coordinated action on invasive alien species of Union concern, focusing resources on priority species and on increasing preventive measures, in accordance with the approach of the Convention and with the EU's plant and animal health regimes.

The core of the Regulation will be the list of IAS of Union concern. For those species, the Regulation provides for measures preventing the intentional introduction of invasive alien species into the EU and their intentional release into the environment; measures preventing the unintentional introduction into the EU and release into the environment (pathway management); requirements to set up a system of surveillance to support early detection and rapid eradication; and requirements to manage the species that are established in EU Member States.

The next step in the implementation of the EU IAS policy will be the adoption of the first list of IAS of Union concern. Beyond the list, the regulation is providing for emergency measures and for IAS of regional and of MS concern.

The regime will be underpinned by an information support mechanism: the European Alien Species Information Network (EASIN).[46] This network was launched in 2012 by the European Commission to assist the implementation of European policies on biological invasions. Building on the very relevant outcomes of the EU research project DAISIE (Delivering Alien Invasive Species Inventories for Europe[47]), the North European and Baltic Network on Invasive Alien Species (NOBANIS[48]) and AquaNIS (Aquatic Non-Indigenous Species, including the Baltic Sea Alien Species Database)[49], EASIN aims to enable easy access to data and information on alien species across Europe, for the terrestrial, freshwater and marine environments. At the core of EASIN, there is an inventory of all known alien and cryptogenic species in Europe (the EASIN Catalogue[50]), which includes relevant information, such as taxonomic classification, pathways of introduction, year and country of first introduction. The EASIN datasets have been used for pan-European or regional assessments of pathways and gateways of alien invasions. In support

[45] Regulation (EU) No 1143/2014 of the European Parliament and of the Council of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species; http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1417443504720&uri=CELEX:32014R1143 .
[46] See http://easin.jrc.ec.europa.eu/.
[47] www.europe-aliens.org
[48] www.nobanis.org
[49] www.corpi.ku.lt/nemo/mainnemo.html
[50] http://www.reabic.net/journals/mbi/2013/1/MBI_2013_1_Katsanevakis_etal.pdf

of the new EU Regulation on the prevention and management of the introduction and spread of invasive alien species in Europe, a notification system for a European Early Warning and Rapid Response System is being developed within EASIN.

Target 6 – Help avert global biodiversity loss

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

***Socio-economic benefits of reaching this target**: Biodiversity and ecosystem services form the fundamental natural capital of humanity. Balmford et al (2002) estimated that the failure to protect biodiversity leads to the loss of natural services worth US$140 billion a year. Policy inaction resulting in failure to halt the loss of biodiversity could result in annual losses in ecosystem services worth $14 trillion per annum by 2050, equivalent to 7% of world GDP[51]. This is especially important for the livelihoods and development potential of the poorest and most vulnerable people, who are highly dependent on biodiversity and ecosystem services - 'the GDP of the poor'[52]. A TEEB assessment suggested that ecosystem services contributed 10% of GDP in India, 16% in Indonesia and 21% in Brazil . As a percentage of the income of rural poor households however, these figures were 47% of GDP in India, 75% in Indonesia and 89% in Brazil[53]. Biodiversity-based industries such as tourism and fisheries account for more than half the gross domestic product of small island developing states. Coral reefs alone provide an estimated $375 billion annual return in goods and services. Many island species on land and sea are found nowhere else on Earth. Legacies of a unique evolutionary heritage, they hold the promise of future discoveries -- from medicines and foods to biofuels. According to the International Resource Panel[54], the ecosystem services provided by tropical forests - whether in terms of storing carbon, supporting the world's richest reservoir of terrestrial biodiversity, regulating water flows, reducing soil erosion, or providing a source of nutrition, timber and valuable genetic resources - are estimated to be worth an average of US$ 6,120 per hectare per year.*

The EU is fully committed to helping combat biodiversity loss across the globe and to fulfilling its global commitments under the Convention on Biological Diversity.

The European Union adopted the EU Biodiversity Strategy to 2020 that also provides the EU implementing measures of its commitment taken under the UN Convention on Biological Diversity to agree to the global Strategic Plan for Biodiversity to 2020. In 2010 the CBD Conference of the Parties adopted the Strategic Plan for Biodiversity 2011-2020, including the twenty Aichi Biodiversity Targets. This Strategic Plan

[51] Braat and ten Brink eds (2008) The Cost of Policy Inaction - The case of not meeting the 2010 biodiversity target.
[52] TEEB (2010) Mainstreaming the Economics of Nature: A synthesis of the approach, conclusions and recommendations of TEEB
[53] Sukhdev (2009) (with H. Gundimeda and P. Kumar)
[54] UNEP (2014) Building Natural Capital: How REDD+ can Support a Green Economy'. **www.unep.org/resourcepanel**

constitutes the relevant overarching framework for all biodiversity-related conventions, and should contribute to the achievement of the Millennium Development Goals and future Sustainable Development Goals. The EU 2020 biodiversity strategy responds to this mandate, setting the EU on the right track with a view to meeting its own biodiversity objectives and its global commitments.

In international cooperation and development, the EU recently launched a new flagship initiative, called "**Biodiversity for Life"** (B4Life). B4Life is an umbrella framework to ensure better coherence and coordination of EU external actions in the area of biodiversity, natural capital and ecosystems. The purpose of B4Life is to highlight the strong linkages between healthy ecosystems and sustainable livelihoods in view of contributing to poverty eradication. It aims at tackling biodiversity loss by promoting good governance of natural resources, securing ecosystem services for food security and supporting innovative ways to manage natural capital in the context of green economy. Besides, B4Life also seeks to enhance policy commitment and resources mobilisation to address the wildlife crisis.

Wildlife crime, including illegal trade of endangered species, has a major impact on biodiversity, but also represents a real threat to national security and economic development of many African countries. Unprecedented poaching levels and sophisticated smuggling capabilities are indicative of organised criminal activity. On the other hand, unsustainable use of important natural resources, such as bushmeat, fuel wood or arable land, is increasing the long-term poverty and is leading to biodiversity loss. Therefore, all the financial instruments of international cooperation are explored synergistically for reducing this pressure on ecosystems and species that finance the instability and preclude any human development.

Box 5: Sustainable Development Goals

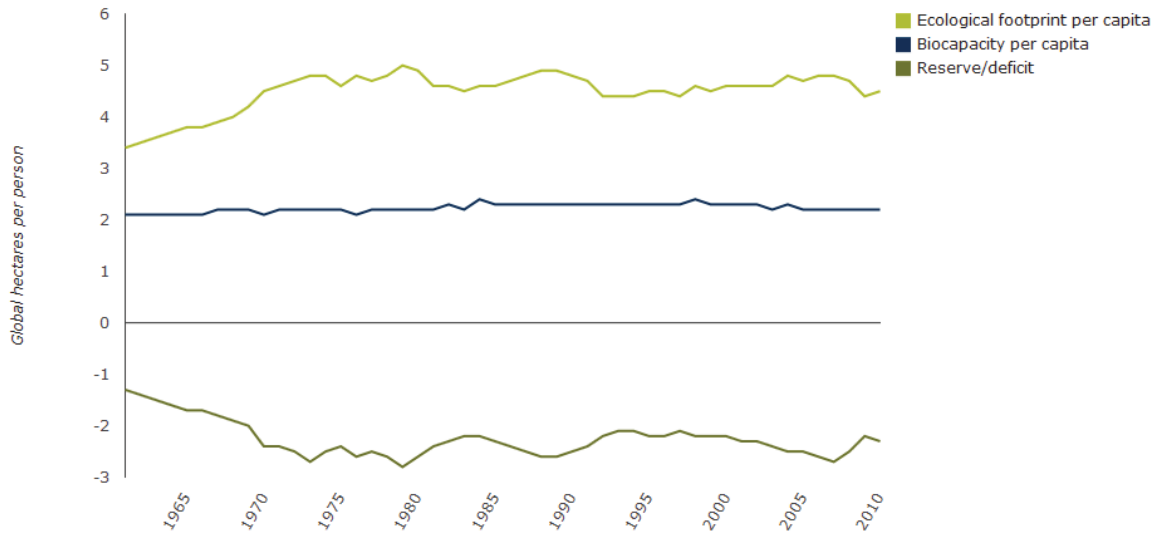
The EU has been working at global level through the UN system, with a view to reflect and mainstream the objective of averting global biodiversity loss in the proposed Sustainable Development Goals (SDGs) for the post -2015 period. Thanks to efforts from the EU and other Parties, biological diversity and ecosystems feature prominently in the proposal of a set of 17 Sustainable Development Goals[55] that the Open Working Group on Sustainable Development Goals agreed to be forwarded to the 68th session of the United Nations General Assembly. In particular, there are two goals directly related to biodiversity and ecosystems throughout the proposed SDGs: Goal 14 on oceans and coasts, and Goal 15 on terrestrial biodiversity. Furthermore, Goal 12 on sustainable consumption and production is also very relevant to CBD Strategic Plan 2011-2020. Language referring to biodiversity and ecosystems and/or natural resources is also included in many other goals, including Goal 2 on food security, Goal 6 on water and sanitation, and Goal 11 on cities and human settlements. Other goals which include “sustainability” considerations are also of

[55] https://sustainabledevelopment.un.org/content/documents/1579SDGs%20Proposal.pdf

relevance, as is Goal 17 on means of implementation. One of the most important achievements is the inclusion in Goal 15 of target 15.9 "by 2020, integrate ecosystems and biodiversity values into national and local planning, development processes and poverty reduction strategies, and accounts." This target is key as it makes a strong linkage between biodiversity, sustainable development and poverty eradication. Next steps will involve safeguarding a strong environmental dimension in the international Post-2015 negotiations and to ensure that biodiversity-related objectives are preserved. The Commission has started an internal reflection on how to implement and bring forward these objectives in the EU and internationally.

Since 2010, significant progress has been made in terms of resource mobilisation for biodiversity and regulation of access to genetic resources and the fair and equitable sharing of benefits arising from their utilization. But Europe's demand for natural resources generated by our present patterns of producing and consuming goods and services remains unsustainable and is causing direct and indirect pressures on biodiversity. Since the 1960s the EU's total biocapacity has changed very little and Europe's ecological deficit is considerable: the EU-28 region's ecological footprint is still twice the size of its biocapacity.

Figure 10 - Ecological footprint, biocapacity and reserve or deficit in EU28[56]

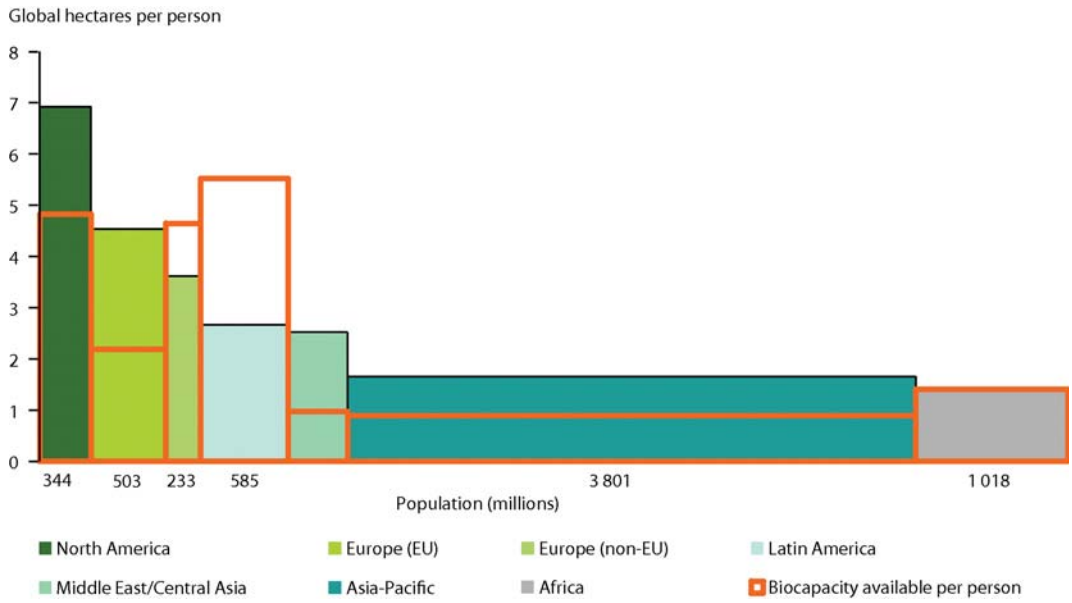


As the graph below demonstrates, Europe's own ecosystems do not have the capacity to meet the total demand of ecological goods and services, also known as natural resource-based products. This can have negative consequences for the environment and in particular for biodiversity, both within and outside Europe, such as degradation of ecological assets, loss of biodiversity and of ecosystem services, ecosystem

[56] See http://www.eea.europa.eu/data-and-maps/indicators/ecological-footprint-of-european-countries/ecological-footprint-of-european-countries-2

collapse and depletion of natural reserves.[57] Besides Europe, North America, Asia-Pacific and the Middle East/Central Asia regions also have ecological deficits[58].

Figure 11 – Ecological footprint variation per region



Note: Nations can operate with ecological deficits in different ways: import products and use the biocapacity of other nations; consume their own stocks of ecological capital; or exploit the global commons. Some nations overdraw their biocapacity in order to export goods, whilst importing additional biocapacity from other nations. However, all nations cannot be net importers, and nations relying on competition for scarce imports will be increasingly at risk.

Biodiversity in the EU overseas entities represents a unique and critical part of Europe's natural heritage. Together, they host much more biodiversity than on the European mainland (see Box). EU Outermost Regions and overseas countries and territories constitute an important part of global biodiversity for which the EU has a direct preservation responsibility.

Box 6: Biodiversity in EU ORs and OCTs

The European Union (EU) Outermost Regions (ORs) and Overseas Countries and Territories (OCTs) are home to an outstanding diversity of species, ecosystems and land and seascapes. These 34 regions and territories scattered worldwide host around 70 % of Europe's species, more than 20 % of the world's coral reefs and lagoons and are recognised as having biodiversity of global significance.

[57] http://www.eea.europa.eu/data-and-maps/indicators/ecological-footprint-of-european-countries/ecological-footprint-of-european-countries-2

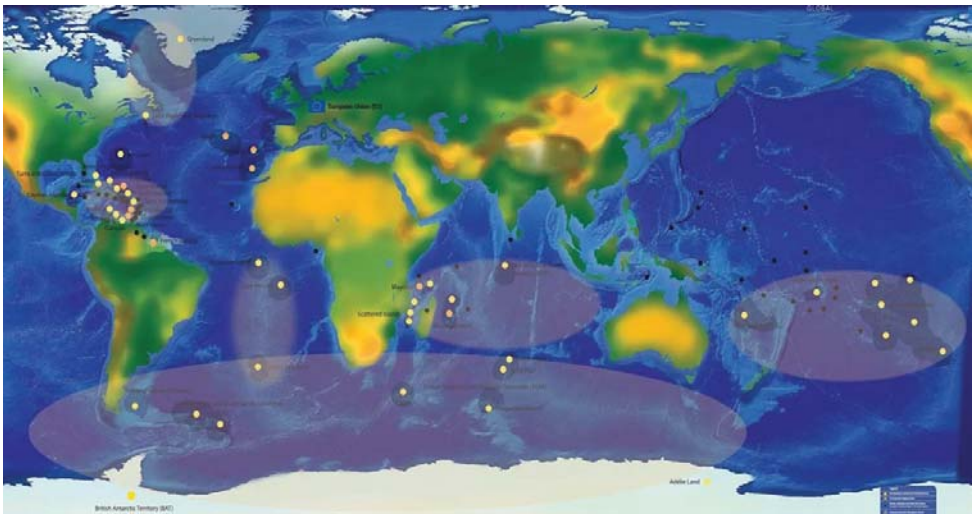
[58] http://www.eea.europa.eu/data-and-maps/indicators/ecological-footprint-of-european-countries/ecological-footprint-of-european-countries-2

This ‘natural capital’ supports the daily needs of local communities, their economies and plays a key role in both climate change mitigation and adaptation. In many places, ecosystems and their services are highly vulnerable given existing pressures. The management of these ecosystems is of the utmost importance in view of sustaining human well-being and models of development. However, much is still unknown about the natural capital in EU overseas entities. There is therefore a pressing need for an improved knowledge base. The ‘Message’ from the 2008 conference at Reunion Island underlined the critical need for establishing “long-term monitoring programmes as well as biological and socio-economic indicators adapted to the constraints specific to the ORs and OCTs”.

Examples of this unique natural capital…

The islands of New Caledonia (an OCT of France) have a similar number of endemic species if compared to the European Union mainland. Such diversity has led to France being included among the world’s 18 ‘mega diverse countries’- the only European country on the list. Greenland, an OCT of Denmark, has the largest terrestrial protected area on Earth (the Northeast Greenland National Park of 972 000 km2). French Guiana, an OR of France in northern South America, has one of the least disturbed areas of rain forest on Earth. Almost all European territories are located either in Biodiversity Hotspots or in High Biodiversity Wilderness Areas.

Figure 12 - Map indicating the geographic regions where the ORs and OCTs are situated



Source IUCN 2014

PROGRESS IN IMPLEMENTING ACTIONS[59]

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.

The **EU flagship initiative on resource efficiency** is one of seven initiatives that constitute the Europe 2020 Strategy, which is the EU's growth strategy for a smart, sustainable and inclusive economy. The strategy provides a long-term plan to integrate resource efficiency to achieve a resource-efficient low-carbon economy, which is based on sustainable growth. This involves a variety of sectors with implications to policies related to economy, energy, transport, industry, raw materials, agriculture, construction, fisheries and biodiversity. The EU Biodiversity Strategy to 2020 is one of the key proposals under the flagship initiative.

To turn the Union into a resource-efficient, green and competitive low-carbon economy is also one of the priority objectives of the **7th Environmental Action Programme** (EAP), which according to its paragraph 106, shall ensure amongst others that by 2020, the impact of consumption in the Union on the environment beyond the Union's borders is reduced. This requires assessing the environmental impact, in a global context, of the Union's consumption of food and non-food commodities and, if appropriate, developing policy proposals to address the findings of such assessments. The development of a Union action plan on deforestation and forest degradation also needs to be considered.

As illustrated by the ecological footprint, the EU's consumption and production are highly dependent on a wide range of goods imported from abroad, which increase the environmental pressures in exporting countries. Given the complexity that this issue entails, the European Commission has supported a study on the "Identification and mitigation of the negative impacts of EU demand for certain commodities on biodiversity in third countries"[60] with the aim of gaining a better understanding of possible ways to contribute to avoiding or minimising the loss of global biodiversity which is caused by certain production and consumption patterns in the EU. The study analysed the supply chains of the five selected commodities – namely soy, beef, cotton, fish, and gold – in order to determine the areas where EU policy intervention could be most effective.

[59] It is important to clarify that some of the actions in place for the achievement of Target 6 have recently been established and, as such, it is not yet possible to assess their progress.
[60] http://ec.europa.eu/environment/nature/pdf/study_third_countries.pdf

EU policies – such as the CAP - have a wide ranging influence. The increasing sophistication and scale of the production and consumption systems that meet European demand for goods and services create major challenges for policymaking and businesses, as well as opportunities for innovation. Driven by a combination of economic incentives, consumer preferences, environmental standards, technological innovation, development of transport infrastructure, and liberalisation of trade, production-consumption systems for many goods and services span the globe, engaging numerous actors.[61] The Commission is committed to promoting the sustainable production of agricultural commodities across the world. As an example, the EU has recently adopted **Ecolabel criteria** for rinse-off cosmetics[62] requiring the palm oil, palm kernel oil and their derivatives in the products to be sourced from plantations that meet criteria for sustainable management[63].

In response to **global deforestation**, the EU is committed to acting to halt it by 2030 at the latest and to reduce gross tropical deforestation by at least 50 % by 2020 compared to current levels[64]. Steps taken by the EU include the Forest law enforcement, governance and trade (FLEGT) action plan, the adoption of the EU Timber Regulation (TR), support for the successful implementation of 'Reducing Emissions from Deforestation and Forest Degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries' (REDD+) initiatives and conservation of key ecosystems in forested regions, in particular in protected areas.

Significant progress has been made in implementing the **EU FLEGT action plan**, which dates back to 2003. The action plan provides for a combination of supply and demand-side measures to exclude illegal timber from markets, improve the supply of legal timber and increase the demand for wood products from legal sources. Its ultimate goal is to encourage sustainable forest management by improving forest governance frameworks and ensuring the legality of forest operations is considered a vital first step. A key element of the FLEGT action plan is the possibility for the EU to conclude Voluntary Partnership Agreements (VPAs). These bilateral trade agreements with timber exporting countries help to prevent illegal timber from being placed on the European market. These trade agreements promote the strengthening of forest governance in partner countries and provide for the establishment, through a multi-stakeholder process, of timber legality assurance systems to certify the legality of exports of timber and timber products into the EU. Cameroon, Central African Republic, Congo (Brazzaville), Ghana, Indonesia and Liberia have ratified agreements.

[61] EEA (2014 f) cited by The European Environment State and Outlook 2015 Synthesis Report. Available at: http://www.eea.europa.eu/soer-2015/synthesis/report/6-systemchallenges
[62] 2014/893/EU: Commission Decision of 9 December 2014 establishing the ecological criteria for the award of the EU Ecolabel for rinse-off cosmetic products (notified under document C(2014) 9302) (OJ L 354, 11.12.2014, p. 47–61).
[63] Certifications accepted include those developed by the Roundtable on Sustainable Palm Oil (RSPO), a multi-stakeholder organisation that has a broad- based membership including NGOs, industry and government.
[64] COM 2008(645) http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52008DC0645

Negotiations are ongoing with Côte d'Ivoire, Gabon, Guyana, Democratic Republic of Congo (Kinshasa), Honduras, Laos, Malaysia, Thailand and Vietnam.[65]

To complement the FLEGT VPAs, the EU has legislation in place laying down the obligations of operators who place timber and timber products on the market,[66] also known as the **EU Timber Regulation (TR)**. The Regulation came into force on 3 March 2013. It prohibits operators in Europe from placing illegally harvested timber and products derived from illegal timber on the EU market. The European Commission is monitoring how Member States are implementing and enforcing the EU Timber Regulation. Reports on its effectiveness are being compiled by the European Commission from reports by Member States. The consolidated report will be sent to the European Parliament and the Council before December 2015. Only recently the Commission launched a public consultation process on the review of the TR. The consultation aimed to contribute to the TR 2015 review by encouraging stakeholders to share their experiences and views on the application of the TR over the first two years. The public consultation closed in the beginning of July 2015.

Under the framework of the FLEGT action plan, the EU has also been promoting **public procurement policies** as a means to encourage trade in sustainable and verified legal timber (eleven EU Member States have adopted timber public procurement policies), and private sector initiatives (voluntary codes of conduct, procurement policies, chain-of-custody/certification initiatives, etc.). In addition, development cooperation funding has been used to support efforts of timber producing countries to strengthen their legal and policy frameworks in the forest sector and building capacity to tackle the problem of illegal logging.

In addition to the above mentioned frameworks, EU's approach on combating tropical deforestation is also being pursued within the UNFCCC negotiations and builds on international initiatives aimed at implementing **REDD+** such as the REDD+ Partnership, the Forest Carbon Partnership Facility, the EU REDD Facility and the UN-REDD Programme. In particular, the European Commission commits approximately EUR 25 million a year to initiatives piloting REDD+ in Asia, Africa and Latin America. The European Commission is investigating ways to stimulate private sector in addressing drivers of deforestation and further increase the effectiveness of REDD+ financing.[67] Moreover, the EU is actively engaged in REDD+ discussions within the UNFCCC so that drivers of deforestation are adequately addressed at all levels.

[65] http://ec.europa.eu/environment/forests/flegt.htm.
[66] Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010 laying down the obligations of operators who place timber and timber products on the market.
[67] http://ec.europa.eu/clima/policies/forests/deforestation/index_en.htm

Finally, at operational level, the Commission supports the management and the conservation of many **protected areas** in tropical forest countries. These protected areas are often the last remnants of primary tropical forests that would disappear under the pressure of local and global drivers, inter alia mining, oil exploration, agro-industry, infrastructures, etc. Large forest ecosystems are protected with the support of EU investments in Africa, Asia and Latin America, with Central Africa as main region of concentration.

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.

All recent EU trade agreements with third countries include provisions aimed at strengthening the effective implementation of multilateral environmental agreements, as well as on the promotion of sustainable trade in areas such as forests and fisheries. This approach is also being followed in ongoing negotiations (e.g. Japan, USA). The Agreements with Colombia-Peru, Moldova and Georgia have specific articles on biodiversity. Ex-ante, Sustainability and ex-post impact assessments of trade agreements also cover impacts on biodiversity, in accordance with relevant Guidelines. Implementation of the trade and sustainable development provisions is, in most cases, at a relatively early stage, but as one example the EU is now the most important market for Peruvian organic products.

Box 7: Free Trade Agreements (FTAs)

At bilateral level, the EU has developed a well-established practice of including in its trade agreements, with both industrialised and developing countries, comprehensive provisions devoted to sustainable development. The chapters on trade and sustainable development in the free trade agreements (FTAs) the EU concluded so far (e.g. Korea, Colombia/Peru, Central America, Singapore, Georgia and Moldova) are based on the following key elements:

- International labour and environmental commitments: EU FTAs establish international principles and agreements as the basic set of common rules, and include commitments by the parties to ratification and effective implementation of core ILO standards and conventions and multilateral environmental agreements.
- Domestic levels of protection and implementation of domestic laws: EU FTAs recognise the regulatory autonomy ("right to regulate") of the EU and its partners, which can freely decide their domestic rules and set their levels of environmental and labour protection, provided they respect

international commitments in these areas. Trade and sustainable development provisions also include obligations on both Parties to prevent 'ad hoc' derogations from labour and environmental laws, or persistent situations of lax enforcement, which may affect trade or investment – in order to avoid a race to the bottom.

- Pursuing a comprehensive positive agenda on trade and investment as a means to support sustainable development objectives: Trade and sustainable development provisions support the conservation and sustainable use of natural resources, such as biodiversity, forestry, and fisheries. They also promote Corporate Social Responsibility (CSR) as well as public and private market-based policies and practices that pursue sustainability objectives, such as eco-labelling and fair and ethical trade initiatives.
- A dedicated institutional set-up, with a strong role for civil society: EU FTAs foster accountability of the parties, transparency, and dialogue with civil society. Each EU FTA establishes a dedicated governmental body, composed of officials of all parties, that oversees the implementation of their trade and sustainable development provisions. This body interacts with a specific forum, also set up by the FTA, comprised of civil society representatives from all parties.
- A tailored mechanism to solve disputes: In cases of disagreements over implementation issues, the trade and sustainable development chapters of EU FTAs provide for procedures for inter-governmental consultations, as well as for the possibility for any party to refer matters to an independent and impartial panel of experts. The reports produced in this context are public and their follow-up must be monitored, including with the involvement of the civil society bodies established under the trade and sustainable development chapters.

In order to ensure that trade and sustainable development provisions are effectively implemented, the EU regularly meets with the countries with which it has concluded agreements to discuss the implementation of trade and sustainable development provisions of the FTA; and establishes, EU "domestic advisory groups" for each FTA, in cooperation with the European Economic and Social Committee and including Trade and Sustainable Development representatives of EU trade unions, employers' organisations, business associations, and non-governmental organisations.

In addition, the EU provides additional trade preferences through its **Generalised Scheme of Preferences** special arrangement (GSP+) to vulnerable developing countries which ratify and implement international conventions on sustainable development and good governance, including the CBD.

In order to enhance the contribution of trade policy to conserving biodiversity and addressing potential negative impacts, the EU is also undertaking measures to tackle illegal trade in wildlife. In February 2014,

the EC adopted a **Communication on the EU approach against wildlife trafficking**[68], which takes stock of EU involvement in global efforts to combat the alarming rate of poaching and illegal trade in wildlife. It launched a stakeholder consultation and set out the areas on which the EU and its international partners should enhance their efforts.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) has been implemented throughout the EU by means of **EU Wildlife Trade Regulations**[69] that are directly applicable in the Member States. Four regulations constitute the legal framework for all Member States: they regulate international and internal trade in wild animals and plants in the EU. Those regulations are regularly amended to accommodate new measures agreed under CITES. In addition, the EU wildlife trade regulations contain measures that are stricter than the requirements adopted under the CITES framework. EU legislation has additional safeguards to ensure the sustainability and legality of trade in CITES listed species and provides the conditions under which wildlife products can enter the EU market. The EU Wildlife Trade Regulations require EU importing countries to make a Non-detriment-finding (NDF) for all species listed in Annexes A or B of the EU Wildlife Trade Regulations (approximately equivalent to CITES Appendix I and II species), which goes beyond the CITES requirement for an NDF for imports of Appendix I species. Through this process, individual EU Member States and the Commission are in dialogue with many authorities of EU trading partner countries to discuss concerns over the sustainability of specific trade and to ensure that there is awareness and transparency of steps taken within the EU regularity framework.

The EU WTR also enables the EU to introduce trade restrictions; there are currently 347 taxa in approximately 120 countries for which trade suspensions are in place. Measures are decided by the Commission based on inputs from EU scientific experts and are regularly adapted to changing species' status and trade patterns. The Commission is in regular contact with Member States, trading partner countries, trade operators and civil society to ensure a smooth application of the rules across the EU, avoid loopholes and provide guidance when necessary.

Between September 2011 and February 2013, UNEP-WCMC on behalf of the EC provided detailed reviews for 188 species/country combinations, and between March 2013 and September 2014 UNEP-WCMC provided detailed reviews for another 102 species/country combinations; a total of 290 species reviews were conducted for the period of 2011-2014. These reviews help the EU to ensure that trade in CITES-listed species into the EU does not threaten species.

In addition, a UNEP-WCMC report "Analysis of the impact of EU decisions on trade patterns – Report 4: Conclusions and Recommendations", commissioned by the EC and submitted on 9th of March 2015,

[68] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52014DC0064
[69] http://ec.europa.eu/environment/cites/home_en.htm.

investigate whether EU trade restrictions lead to shifts in trade patterns and explore potential implications. The reports highlight that more than 70% of EU trade restrictions successfully reduce pressure from global trade on populations. At the same time, the Commission and individual Member States also support capacity building in trading-partner countries, for example through support of CITES efforts to strengthen CITES implementation in developing countries, or cooperation with exporting countries on particular species. The EU also plays an active role in communicating EU concerns over trade levels to the CITES platform as appropriate, for example where species/country combinations warrant inclusion in the CITES Review of Significant Trade process.

The EU also monitors the implementation by Member States of the EU wildlife trade framework, notably through the work done at the wildlife trade enforcement group, which meets twice a year and is chaired by the Commission.

The EU officially became a Party to CITES on 8 July 2015.

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.

The European Commission ordered a study on reforming environmentally harmful subsidies for a resource efficient Europe.[70] The study aimed to support the Commission in implementing the call in the Roadmap to a Resource Efficient Europe to phase out harmful subsidies by 2020. The study, published in December 2012, identifies a number of existing harmful subsidies in EU Member States across a range of environmental sectors and issues, such as agriculture and land, climate change and energy, fisheries, food, forestry, materials, transport, waste, and water. The study identified obstacles to reform, as well as potential solutions. The reform of environmental harmful subsidies is also a regular item, for a number of EU countries, in the European Semester process, the annual governance process of the Europe 2020 strategy for smart, sustainable, and inclusive growth.

Also, considering the importance of advancing on this issue at the global level, at the CBD COP12, the EU and other Parties adopted "milestones" for the full implementation of Aichi Biodiversity Target 3 on phasing out incentives harmful to biodiversity, and developing and applying positive incentives for the conservation and sustainable use of biodiversity. The decision[71] includes a timetable and concrete activities for the

[70] http://www.ieep.eu/publications/2012/12/reforming-environmentally-harmful-subsidies-for-a-resource-efficient-europe
[71] https://www.cbd.int/doc/decisions/cop-12/cop-12-dec-03-en.pdf

elimination, phasing out or reform of incentive policies that are harmful to biodiversity, as well as the promotion of positive incentive policies.

Through the successive reforms of the main EU sectoral policies and corresponding funding instruments, the European Commission has sought to provide more positive incentives for biodiversity conservation and sustainable use, most notably through the latest reforms of the CAP and the CFP.

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 (as set out in CoP10 Decision X/3).

The EU remains the largest contributor to biodiversity-related Official Development Assistance (ODA). As a party to the CBD, the EU is committed toward the internationally agreed target of doubling biodiversity-related flows to developing countries by 2015, based on an average from 2006–2010, and to maintain this level until 2020. Average ODA spent by EU institutions for biodiversity in 2006-2010 was EUR 166.3 million. After a significant drop in 2011, commitments achieved in 2012 and 2013 show that the EU is making progress, while further efforts are required to deliver on this target.

	2006	2007	2008	2009	2010	2011	2012	2013
Direct	56	76	83	59	95	19	217	82
Indirect	76	53	47	141	151	107	180	237
Total	132	129	130	200	246	126	397	319

In the Council Conclusions of 12 December 2013[72] the EU and its Member States reaffirmed their resolve to contribute to the achievement of the Hyderabad commitments to double total biodiversity-related financial resource flows to developing countries by 2015, using as a reference level the average of annual biodiversity funding for the years 2006–2010. They committed to at least maintaining this level until 2020. The table below indicates international biodiversity funding commitments from the EU and the 23 Member States that reported data. As explained in the EU Accountability Report on Financing for Development 2015, only 16 Member States reported data on committed or disbursed funding in 2014 and 2015. Therefore, related figures of those years are not included in the table below.

International biodiversity funding, EU (commitments, EUR million)

	2006	2007	2008	2009	2010	**Average (2006-2010)**	2011	2012	2013
Member States (23)	639.2	685.8	848.1	917.6	1137.5	**845.5**	1240	1452.8	1584.9

[72] http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/EN/foraff/140060.pdf

EU	127.1	129.4	129.7	199.5	245.8	**166.3**	125.9	396.9	319.3
TOTAL	766.3	815.2	977.8	1117.1	1383.3	**1011.9**	1365.9	1849.7	1904.2

Source: Information extracted from EU Accountability Report on Financing for Development 2015[73]

At CBD COP12, a good and balanced agreement was reached on resource mobilisation[74], which reaffirmed all the elements of the Hyderabad package (CBD COP11), whilst also stressing the importance of domestic resource mobilization and the need for all CBD Parties to mobilise resources, and to increase efforts to mainstream biodiversity across their policy frameworks[75]. Parties including the EU also agreed to increase domestic financing for biodiversity and identified a set of actions to allow the increased mobilization of financial resources from all sources. These decisions echoed and responded to the conclusions of the fourth Global Biodiversity Outlook (GBO4), which indicated that while progress was being made in conserving biodiversity, governments needed to increase funding efforts if they were going to end the loss of biodiversity.

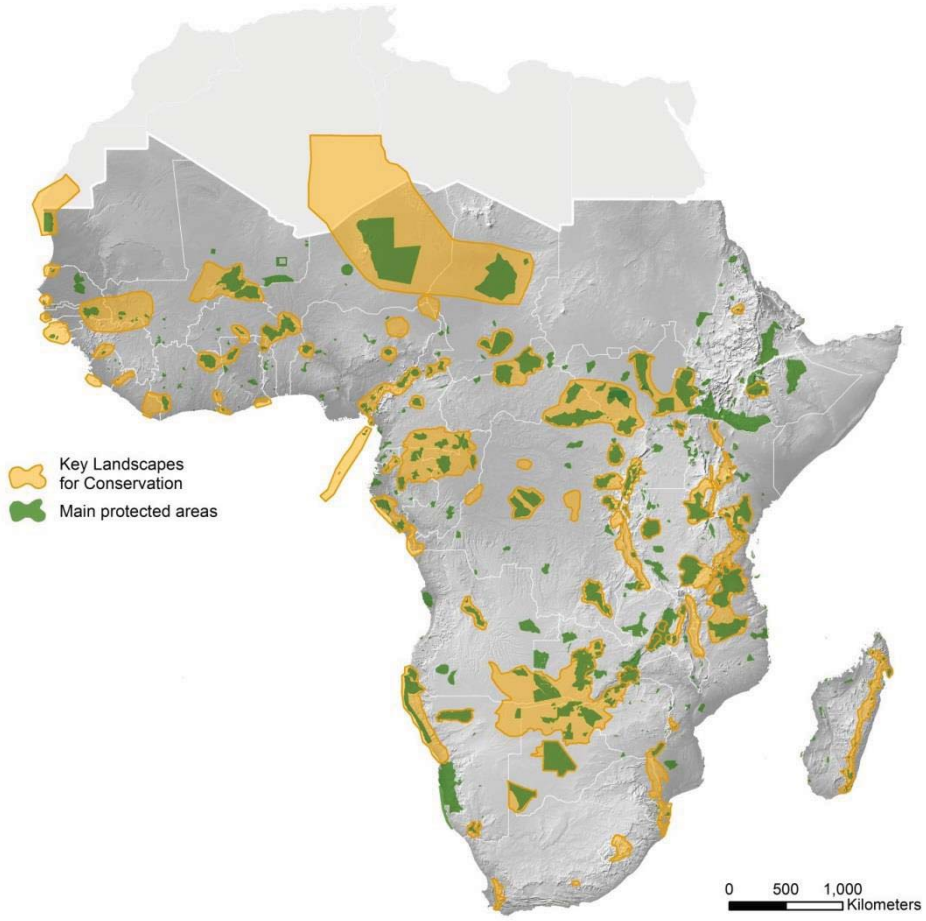
In response to the increasing challenges with regard to global environmental issues such as biodiversity loss, the EU under the 2014-2020 multiyear financial framework has allocated significant budgetary resources to the Thematic Programme on Global Public Goods and Challenges (GPGC) under the Development Cooperation Instruments (DCI) and increased the part dedicated to natural resources in the European Development Fund. The share of GPGC that has been earmarked to environment and climate change is EUR 1.3 billion, which is significantly bigger than the Environment and Natural Resources Thematic Programme (ENRTP) under the previous MFF (€ 804 M). Out of this, about € 250 million will target biodiversity specifically, i.e. roughly € 36 million per year, though the GPGC shares that are specifically allocated to other issues such as climate change and forest governance may also contain significant relevance for biodiversity. These investments are framed in the context of B4Life. It must be noted that many projects belonging to other main thematic domains (agriculture, climate change adaptation/mitigation, infrastructure, energy) have positive effects on biodiversity conservation and are taken into account in the reporting of resources dedicated to biodiversity.

[73] https://ec.europa.eu/europeaid/eu-accountability-report-financing-development-2015_en
[74] http://www.cbd.int/decision/cop/default.shtml?id=13366.
[75] The EU and its Member States, alongside other CBD Parties, reaffirmed that they commit, together, to contribute to doubling total biodiversity-related financial resource flows from a variety of sources to developing countries, in particular least developed countries and Small Island Developing States, as well as countries with economies in transition, by 2015, using as the reference level the average of annual biodiversity funding for the years 2006-2010, and at least maintaining this level until 2020.

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.

In order to tackle global issues in a consistent manner taking into account the transboundary aspects, the Commission has always privileged large conservation programs with a regional approach (such as ECOFAC or PAPE). More recently, the Commission has produced a study "Larger than elephants. Inputs for an EU strategic approach for African Wildlife Conservation" aiming at defining a consistent approach for the EU investments for the next 10 years. This work, supported by the broad conservation community, includes activities in 85 Key Landscapes for Conservation covering 300 National Parks (protection of key ecosystems and local development around the sites), institutional strengthening and capacity-building of national authorities, and global action against wildlife crime (fight against organised crime organisations, demand reduction, political dialogue). This work is now discussed with EU and non-EU donors in order to identify very concretely the priority actions, the gaps and the overlaps.

Figure 13 - Map of the Key Landscapes for Conservation identified by the study Lrger than elephants



Map of the Key Landscapes for Conservation identified by the study Lrger than elephants

An ongoing EU-funded project "Strengthening MEA synergies and indicators in National Biodiversity Strategies and Action Plans (NBSAPs) for the Pan-European region" aims to strengthen NBSAP implementation through improving synergies across various environmental agreements, enhancing the reporting process and developing effective indicators in pan-Europe, with a transboundary focus in the sub-regions of Eastern Europe, Southern Caucasus and Central Asia. Hence, this project will increase the capacity in the countries, develop accessible knowledge and skills through the production of practical outputs.

The Commission currently financially supports two projects directly related to the assessment of biodiversity values (TEEB and WAVES) and one project indirectly related to biodiversity valuation (BIOFIN), which support partner countries to develop comprehensive national resource mobilization strategies which help to strengthen the implementation of their NBSAPs. These projects will contribute to improving the effectiveness of EU funding for global biodiversity.

Regarding biodiversity actions in G20 countries, a €7 million project under the Partnership Instrument on Natural Capital Accounting will cover a number of strategic partners, including Brazil, China, India, South Africa and Mexico. The overall objective of the project is to engage at national level with the EU strategic partners where biodiversity is at stake, so as to enhance their knowledge of valuation of ecosystems and their services. Building on an EU-agreed (and internationally agreed) methodology (UN SEEA) and on the development of national competences, the project will initiate pilot testing in NCA in each country and help develop capacity in this area.

Box 8: World Bank WAVES (Wealth Accounting and the Valuation of Ecosystem Services)

WAVES is a global partnership with collaboration among different actors at global, national and sub national levels, all working towards accomplishing WAVES' four objectives: 1) help countries adopt and implement accounts that are relevant for policies and compile a body of experience;
2) develop an ecosystem accounting methodology; 3) establish a global platform for training and knowledge sharing; and 4) build international consensus around natural capital accounting.
Work considers looking beyond GDP by fully accounting for minerals and energy, fisheries, water, forests and ecosystems. Work centres on implementation in eight pilot countries (Guatemala, Botswana, Philippines, Colombia, Costa Rica, Madagascar, Indonesia, and Rwanda). Policy messages derived from accounts have guided policy making in countries. The EU and Member States (E.g. France, Germany, Italy, and UK) contribute financially to World Bank Multi-Donor Trust Fund on WAVES which has a total value over 33 million dollars. An expanded programme, WAVES+, with more partner countries is being considered.

TEEB (The Economics of Ecosystems and Biodiversity) at national level

The EU supports five developing countries in conducting TEEB country studies (Ecuador, Bhutan, the Philippines, Tanzania and Liberia) and Germany supports several partner countries, notably India and Brazil. Several other Member States have started their own TEEB-inspired initiatives including Belgium, Czech Republic, Poland and Slovakia Other countries with TEEB or TEEB-inspired assessments include Georgia, Japan, Norway, Republic of Korea and South Africa[76].The TEEB study has also encouraged business engagement with the biodiversity agenda recognising that the economic invisibility of nature poses significant risks to their business models and supply chains. The Natural Capital Coalition[77] (which evolved from TEEB) is a global platform which brings together the many different initiatives and organizations working in natural capital under a common vision. It aims to develop a harmonised framework for natural capital valuation and accounting in the private sector and apply it in business decision making to facilitate the development of more sustainable long term business models.

BIOFIN: The Biodiversity Finance Initiative

BIOFIN supports partner countries to develop comprehensive national resource mobilization strategies which help to strengthen the implementation of their NBSAPs. Launched in October 2012 by the United Nations Development Programme (UNDP), the initiative is managed by the UNDP Ecosystems and Biodiversity Programme, in partnership with the EU, and the Governments of Germany, Switzerland, Norway and Flanders. GEF is a further financing partner of in-country projects.[78] BIOFIN works along two main axes: the Globally-led development of a new methodological framework; and the Adaptation and implementation of this new methodological framework at national level. To help countries increase the importance attributed to biodiversity, and in consequence bridge the financing gap, the work at national level will be led by Ministries of Finance, Economics or Planning and the Ministry of Environment. It is articulated through the following components: 1) Analyse the integration of biodiversity and ecosystem services in sectoral and development policy, planning and budgeting; 2) Assess future financing flows, needs and gaps for managing and conserving biodiversity and ecosystem services; 3) Develop comprehensive national Resource Mobilisation Strategies to meet the biodiversity finance gap; 4) Initiate implementation of the Resource Mobilisation Strategy at national level. As of January 2015, there are a total of 29 core participating countries. While discussions are ongoing in several countries to formally join the Initiative, the following 19 countries are already fully engaged: Botswana, Chile, Colombia, Costa Rica, Ecuador, Fiji, Guatemala, India, Indonesia, Kazakhstan, Malaysia, Mexico, Peru, Philippines, Seychelles, South Africa, Thailand, Uganda and Zambia. Further countries can be supported as additional resources are

[76] http://www.teebweb.org/resources/teeb-country-studies/
[77] http://www.naturalcapitalcoalition.org/
[78] BIOFIN (2015) BIOFIN Factsheet [Online] Available from: http://www.biodiversityfinance.net/links-and-publications/biofin-factsheet [Accessed: 10 February 2015].

leverages. Tools developed through BIOFIN will also be applied in the 45 countries that are receiving UNDP-GEF support towards the development of new national biodiversity strategies, and will be made available to all CBD Parties through an ongoing collaboration with the CBD Secretariat and UNEP-WCMC, such as on regional workshops on resource mobilisation.

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.

In 2012, a Commission review of the opportunities for **biodiversity-proofing the EU budget**[79] found that numerous tools exist to facilitate the process. Biodiversity-proofing is a structured process to ensure the effective application of tools to avoid — or at least minimise — biodiversity-harmful spending and to act as a catalyst for biodiversity-friendly spending. In 2014, the Commission published a practical common framework for biodiversity-proofing the EU budget, which includes general and fund-specific guidelines[80] for national and regional authorities and for Commission services.

Regarding biodiversity-proofing of the EU development cooperation, actions over the last decade have been encompassed within a broader approach, meant to enhance the integration of environment and climate change into development cooperation strategies, programmes and projects (environmental mainstreaming). A specialised environment help-desk was set up in 2004 and provided the Commission with appropriate training, guidance and technical assistance. It also developed a 'EU handbook for the integration of environment into development cooperation", for which the latest version was released in 2009.

Among the key measures that have been introduced since the former multiyear financial framework (2007-2013), is a compulsory environmental screening that must be applied to any new development cooperation action to be committed under an EU financing decision, at its identification stage. From this screening, the action can be ranked as 'A' - potentially significant negative environmental impacts, always requiring an **Environmental Impact Assessment** - EIA (if it is a stand-alone project) or a **Strategic Environmental Assessment** - SEA (if it is a sector policy support programme) B' - potentially 'non-negligible' impacts → environmental aspects to be addressed during formulation, or 'C' - minor or no negative environmental impacts → no need for further assessment.

[79] http://ec.europa.eu/environment/nature/biodiversity/comm2006/pdf/BD%20Proofing%20Main%20Report.pdf.

[80] All guidance documents available on http://ec.europa.eu/environment/nature/biodiversity/comm2006/proofing.htm

Although biodiversity is not explicitly addressed in such screening, concepts that are relevant to it are: 'protected area'; 'area classified as vulnerable'; 'environmental services'; 'introduction of alien species'; 'use of fertilisers, pesticides or other chemicals', etc.

The information available so far (report covering years 2008 to 2010) is presented in the following table:

	2008	**2009**	**2010**
Number of 'A' type projects	13	20	4
number of EIA undertaken	11	13	4
Rate	85%	65%	100%

In parallel to the stand-alone project approach, a significant share of development cooperation is delivered through **Sector Policy Support Programmes** (SPSP). This enables more effective ownership and accountability of the beneficiary country, since it is designed so as to be fully aligned on the partner country's own policies. This approach is thus expected to generate more structural changes that may lead to more sustainable impacts. SPSP are also submitted to environmental screening and distinguished between environmental sensitive and non-sensitive sectors. The formers are subject to a Strategic Environmental Assessment (SEA). Data are available for 2009 and 2010 only and are displayed in the table below.

	2009	**2010**
Number of ENV-sensitive SPSP	21	13
SEA	3	6
no SEA	5	2
uncertain/no evidence found	13	5
rate	14%	46%

Information over more recent years is currently being compiled by a contracted technical assistance and is expected to be available by September 2015 at the soonest.

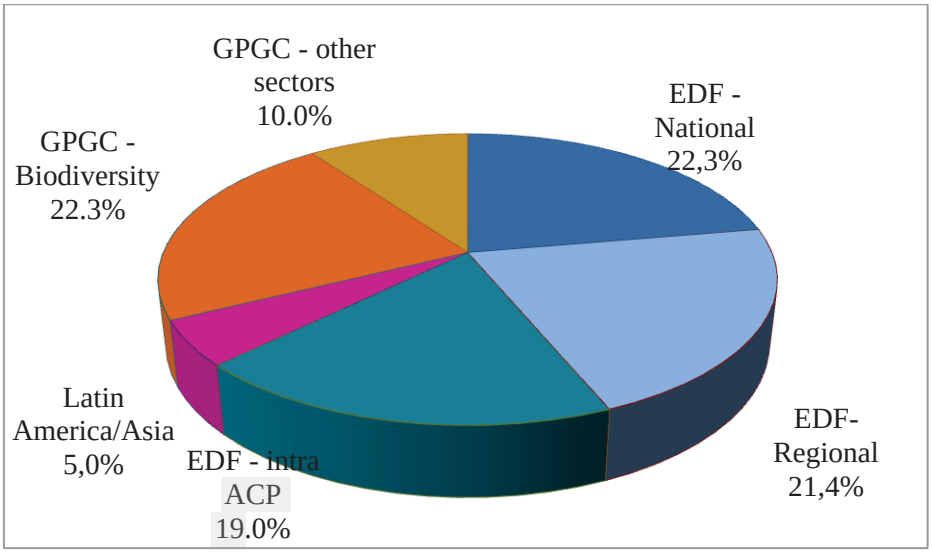
Number of Multiannual Indicative Programmes, National Indicative Programmes or Regional Indicative Programmes where the support per **sector section** or the **crosscutting issue section** or the **risk assessment section** explicitly and significantly address biodiversity/ecosystems:

Geographic area:	**Number of NIP/RIP**	**Number of NIP/RIP where biodiversity is a specific sector (RM2)**	**Number of NIP/RIP where a chosen sector is significant for biodiversity (RM1)**
Sub-Saharan Africa (NIP)	41	2	11

Geographic area:	Number of NIP/RIP	Number of NIP/RIP where biodiversity is a specific sector (RM2)	Number of NIP/RIP where a chosen sector is significant for biodiversity (RM1)
Latin-America & Caribbean (NIP)	24	1	6
Asia & Pacific (NIP)	33	0	5
North-Africa, Near-East, Eastern Europe (NIP)	13	0	3
Total country (NIP)	111	3	25
Regional or multi-country (RIP)	14	4	5
Global NIP+RIP	125	7	30

The adoption of the Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets in 2010 and the EU Biodiversity Strategy in 2011 boosted the need for increasingly singling biodiversity out as a specific matter to be looked at, among the general environmental agenda. Therefore, during the programming phase under the current 2014-2020 multiannual financial framework, the environmental mainstreaming exercise has paid attention to identifying where the future cooperation actions of the EU with its partners – either single developing countries or regional integration organisations – offers potential for biodiversity-relevant action according to the choice of concentration sectors (every partner is required to choose up to two sectors where EU resources from the bilateral cooperation will be concentrated). This programming phase, including negotiations rounds with partners, leads to the adoption of **National Indicative Programmes** (NIP) or **Regional Indicative Programme** (RIP). To date, nearly all NIP and RIP have been completed. The table above shows the numbers of NIPs and RIPs where one of the concentration sectors chosen is either specifically, or significantly, relevant to biodiversity. The NIPs and RIPs concerned are funded by the European Development Fund (EDF) for the Africa-Caribbean-Pacific countries (ACP) and by the geographic programmes of the Development Cooperation Instrument (DCI) for the Latin-American and Asian countries. When the amounts associated with these RIPs and NIPs are added to the funds allocated under the thematic programme of the DCI (Global Public Goods and Challenge - GPGC), this leads to an estimated €1-billion budgeted for the EU development aid for projects with biodiversity as principal objective for the 2014-2020 period. The chart below shows that NIP and RIP in the ACP (thus funded by the EDF) will provide for 62.7%.

Figure 14 – EU development aid with biodiversity as principal objective 2014-2020



An increasing share of Development Cooperation is delivered through budget support, in opposition to the traditional project/programme approach. Budget Support is expected to be more effective in terms of involving partner countries' ownership and accountability to deliver positive impacts on development. This has been largely developed and promoted since 2005 under the Aid Effectiveness process[81]. Budget support generally exists under two main approaches: 1) Sectorial Reform Contract (SRC). Up to 2012, 8 SRC interventions addressed the environmental sector; 2) General Budget Support (GBS).

The environment integration tool that is used for this type of approach is typically the Strategic Environment Approach. Nonetheless, effective environmental integration at budget support level has been rather poor. Data for 2009 and 2010 show that, out of, respectively, 6 and 16 GBS interventions assessed, no SEA has been actually carried out. On the other hand, the actual delivery of budget support (disbursements) is subject to a strict 'Risk Management Framework' – where macroeconomic aspects and public finance management issues are carefully looked after – and also need to respond to a set of indicators within a 'Performance Management Framework', where progress in toward the objectives of the policy or sector reform is assessed. Unfortunately, data with regard to these indicators were not available on time for this Mid-Term Review.

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.

[81] See e.g. in http://www.oecd.org/dac/effectiveness/

The Commission proposed in October 2012, and the co-legislators adopted in April 2014, **EU Regulation**[82] **implementing core elements of the 'Nagoya Protocol'**. In particular, the regulation implements at EU level the compliance "pillar" of the Nagoya Protocol. It puts in place measures to ensure that genetic resources from countries that are Parties to the Nagoya Protocol, accessed after the entry into force of the Protocol, are used in the EU in compliance with the Nagoya Protocol requirements. The EU Regulation will be complemented by measures taken at Member State level (e.g. designation of competent authorities, definition of systems of penalties for instances of non-compliance) and by a Commission implementing act on voluntary tools to facilitate compliance (registered collections, best practices) and on the monitoring of user compliance. The EU ratified the Nagoya Protocol on 16 May 2014.[83]

[82] 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 Utilisation in the Union (EU ABS regulation).
[83] http://ec.europa.eu/environment/biodiversity/international/abs/index_en.htm;.

IV. HORIZONTAL MEASURES

Mobilising resources to support biodiversity

Since 2010, biodiversity aspects have been integrated to different degrees into European Structural and Investment Funds (ESIF), notably the European Agricultural Fund for Rural Development (EAFRD), the Cohesion Policy Funds (i.e. the European Regional Development Fund, the European Social Fund, and the Cohesion Fund) as well as the European Maritime and Fisheries Funds (EMFF).

LIFE — the Financial Instrument for the Environment — is the only EU financial instrument fully dedicated to the environment. Previous evaluations have shown that LIFE is an effective instrument for protecting the environment, although it is limited in size[84]. Since 1992, LIFE has supported over 3100 projects. The new LIFE Regulation, published on 20 December 2013, sets a budget for the 2014–20 funding period of EUR 3.4 billion. The 2014-20 LIFE programme has two components: environment and climate action. It is the sub-programme for environment that provides the possibility to support projects addressing threats to biodiversity and contributing to the achievement of the targets of the EU Biodiversity Strategy to 2020. Two out of three priority areas of this sub-programme — LIFE Nature & Biodiversity in particular and LIFE Information & Governance — take into account biodiversity questions. The project topics under the nature & biodiversity priority area, defined in the LIFE multiannual work programme for 2014-17, prioritise projects contributing to Targets 1, 2, 3, 4 and 5 of the EU 2020 Biodiversity Strategy. Under the information & governance priority area, one of the project topics covers information and awareness-raising campaigns on the EU biodiversity strategy. LIFE also contributes to financial instruments, for instance the Natural Capital Financing Facility (NCFF - (see box).

Box 9: Natural Capital Financing Facility (NCFF)

The Commission and the European Investment Bank (EIB) have established the Natural Capital Financing Facility (NCFF), a new financial instrument which provides loans and investments to support projects in EU member states, which demonstrate that the preservation of natural capital can generate revenues or save costs, whilst delivering on biodiversity and climate adaptation objectives. Currently there are clear barriers to the uptake of many natural capital projects, including lack of experience, long investment and project payback periods, and uncertainties about target markets, revenue streams and profit margins. The NCFF is a pilot to establish a pipeline of replicable, bankable projects that will serve as a "proof of concept" and demonstrate the attractiveness of such projects to potential investors. Eligible projects will address payments for ecosystem services, green infrastructure, biodiversity offsets and investments for innovative pro-biodiversity and adaptation businesses. The final recipients for NCFF are public or private entities, including public authorities, land owners and businesses. The total budget for the Investment Facility amounts to € 100

[84] http://ec.europa.eu/environment/life/about/documents/COMM_PDF_SEC_2011_1542_annexes_en.pdf

– 125 million for 2014-2017. The European Commission contributes € 50 million as a guarantee for the investments and finances a € 10 million support facility."[85]

The **reforms of the common agricultural policy and the common fisheries policy** aim at reducing support that has a negative environmental impact, whilst rewarding practices that deliver public goods, including biodiversity. Under the common agricultural policy during the period 2007-13, progress has been made in conserving and restoring biodiversity and ecosystem services in the countryside as a whole. During this period, funding through rural development programmes under the policy's second pillar provided the principal means of supporting biodiversity protection, management and restoration measures in agricultural and forest habitats. The rural development policy gave Member States options to support measures that aim to preserve biodiversity through various means including advice, training and land management measures, and to draw up management plans related to Natura 2000 sites. Two new 'CAP reform' regulations — establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy,[86] and on support for rural development by the European Agricultural Fund for Rural Development[87] — apply from 1 January 2014 to 31 December 2020. A new direct payments system for farmers replaces the current Single Payment Scheme. A key change is that 30 % of the direct payment will be dependent on meeting certain 'greening' requirements relating to environmental measures that go beyond cross-compliance, namely: crop diversification; permanent grassland; and ecological focus areas.

EU funding for European fisheries covers measures in support of biodiversity or marine environmental protection. In the 2007-13 funding period, specific measures related to biodiversity accounted for about 6 % of total expenditure commitments, increasing to up to one third of the total funds if measures with indirect positive impacts are included. Under the 2014-20 European Maritime and Fisheries Fund, there will be built-in indicators to track biodiversity-related spending and to measure environmental impacts.

Cohesion policy funds will continue to support key biodiversity and Natura 2000 investments. The European Regional Development Fund (ERDF) and the Cohesion Fund both aim to redress the main regional and national imbalances by supporting the development and structural adjustment of Member States' economies. The major reform of the Cohesion policy means that the support for the 2014-2020 period is closely linked with the Europe 2020 objectives for smart, sustainable and inclusive growth. The integration of sustainable development, environmental protection is also introduced as a horizontal requirement for all projects supported by the funds. In this respect, the funds may support Member States in financing measures related to biodiversity, including green infrastructure and Natura 2000. Support is also available for a range of broader sustainable regional development measures, with possible indirect links to biodiversity and Natura

[85] http://ec.europa.eu/environment/life/funding/financial_instruments/ncff.htm.
[86] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32013R1307.
[87] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013R1305.

2000. These include supporting investment in adaptation to climate change and disaster risk reduction (e.g. through ecosystem-based solutions), protecting, promoting and developing cultural heritage (e.g. on Natura 2000 sites) and integrating nature conservation into broader plans to regenerate deprived urban and rural communities. In this context, it is worth highlighting that a Court of Auditors report assessed that in the 2007-2013 period, ERDF financing opportunities had not been exploited to their full potential by the Member States[88]. Funding provided under the European Social Fund could also contribute to the achievement of biodiversity objectives through supporting education and training, investments in skills and the creation of new jobs.

Other instruments relevant for biodiversity financing include **EU external financing instruments**, in particular to deliver on the Hyderabad commitments on biodiversity-related flows to developing countries. These instruments are key in delivering on international biodiversity commitments, in particular through the Development and Cooperation Instrument (DCI) and the European Development Fund (EDF), as well as the Partnership Instrument[89]. EU efforts to enhance resources mobilisation from these external instruments are enshrined in the 'Biodiversity for Life' (B4Life) flagship initiative. B4Life is an umbrella framework to ensure better coherence and coordination of EU actions in the area of biodiversity, natural capital and ecosystems. The purpose of B4Life is to highlight the strong linkages between healthy ecosystems and sustainable livelihoods in view of contributing to poverty eradication. In accordance with the EU's overall develop cooperation policy – An Agenda for Change – B4Life aims at tackling biodiversity loss by promoting good governance of natural resources, securing ecosystem services for food security, supporting innovative ways to manage natural capital in the context of green economy and enhancing policy commitments and stakeholders mobilisation to address the wildlife crisis.

To further identify gaps and overlaps in funding conservation activities, the Joint Research Centre of the European Commission is developing a web-based information system (eConservation), mapping past, current and planned biodiversity conservation projects funded by the major donors[90].

The EU is also investing significant resources in research and innovation related to biodiversity through its **Horizon 2020 Work Programme** relating to climate change and food security, sustainable agriculture and forestry, bioeconomy, and marine and inland water.

To better assess the contribution of the EU budget to biodiversity objectives, the Commission has started **tracking biodiversity-related expenditure** across all relevant policy areas (such as agriculture, fisheries,

[88] Special Report No 12 / 2014: "Is the ERDF effective in funding projects that directly promote biodiversity under the EU biodiversity strategy to 2020?" http://www.eca.europa.eu/Lists/ECADocuments/SR14_12/QJAB14012ENC.pdf
[89] Regulation (EU) No 234/2014 of the European Parliament and of the Council of 11 March 2014 establishing a Partnership Instrument for cooperation with third countries
[90] http://econservation.jrc.ec.europa.eu/

transport, regional policy, and environmental protection)[91]. This methodology was applied ex post to report to the Convention on Biological Diversity on EU domestic and international financing flows for biodiversity[92]. Although it is too early to provide a comprehensive assessment of how much the new 2014-2020 budget is contributing to biodiversity objectives, preliminary estimates of how much relevant EU instruments are expected to contribute have been published as part of the communication on the draft annual EU budget at the beginning of each year[93].

In addition, the role of the private sector in the funding of biodiversity protection is being strengthened, including through setting up of the NCFF (see box 9), which will contribute to implementing EU policy and legislation by demonstrating the financial viability of natural capital projects and attracting funding from the private sector. Potentially, the European Fund for Strategic Investments can also provide complementary funding.

Partnerships for Biodiversity

The EU 2020 Biodiversity targets cannot be achieved without strong partnerships and the full engagement and efforts from key actors at all levels. Soon after the adoption of the strategy, a **common implementation framework (CIF)[94]** was adopted, involving the European Commission and Member States in partnership with key stakeholders and civil society.

Specifically, the implementation framework aims to:

i. facilitate implementation of the EU Biodiversity Strategy to 2020 by putting in place a clear and logical EU-level governance framework that is as efficient and effective as possible;
ii. create ownership for the implementation of the strategy across all relevant policy areas by involving representatives from a wide range of services, ministries and institutions in its implementation;
iii. ensure the involvement of all interested stakeholders beyond the traditional 'biodiversity community' at the appropriate level of policymaking; and
iv. minimise duplication of work and maximise synergies between efforts undertaken at different levels by various actors and stakeholders; share information and best practice; and address common challenges.

The CIF also serves the purposes of monitoring, assessing and reporting on progress in implementing the strategy. Most of the factual information used in this mid-term review is drawn from the consultation process that took place within this context (cf. meetings of the Nature Directors and the Coordination Group for

[91] http://ec.europa.eu/environment/nature/biodiversity/financing_en.htm
[92] https://www.cbd.int/financial/reporting.shtml
[93] See biodiversity financing table in annex V of political presentation documents: http://ec.europa.eu/budget/annual/index_en.cfm#statementEstimates
[94] http://biodiversity.europa.eu/policy

Biodiversity and Nature, involving Member States and key stakeholder groups). Representatives of various European Commission services also provided updates on specific actions and targets.

Local and regional authorities[95] have a key role in the sustainable management of biodiversity and ecosystem restoration on the ground. To this end, they need to be equipped with the necessary human and financial resources, supported by appropriate legal and policy tools, and their capacities built through decentralized cooperation, partnerships and experience exchange.

There has been considerable progress in establishing partnerships and engaging stakeholders and civil society. Amongst others, the **EU Business and Biodiversity Platform** (B@B platform) was successfully re-launched and ensures the active involvement of businesses in the implementation of the Strategy.
The Platform has over 250 Members today including +20 multinationals, +100 SMEs, +10 Member State Representatives and numerous NGOs. Most importantly, many of the multinationals and SMEs are actively working with the Commission on delivering on the Platform's work streams, which focus on natural capital accounting; innovation for biodiversity and business; and access to finance and innovative finance mechanisms. B@B is a member of the Global Platform on Business and Biodiversity under the Convention on Biological Diversity representing the EU region.[96] It takes part in the international network of business and biodiversity initiatives hosted by the Convention and ensures that the B@B Platform objectives are in line with the Convention targets, e.g. with respect to resource mobilisation and innovative financial mechanisms. The EU B@B Platform also helps raise awareness of numerous Member State business and biodiversity platforms (including in Central and Eastern Europe, France, Germany, Netherlands, Poland, Portugal, Spain, Portugal and the UK)[97] and other international initiatives besides the Global Platform.[98]

Since 2000, the European Commission organises each year a major communication event focusing on environmental policy, known as "**Green Week**". In 2015, Green Week's theme was on biodiversity and nature. As the biggest annual conference on European environmental policy, it attracted more than 2000 participants from government, business and industry, non-governmental organisations, academia and the media, and the webstreaming was watched by about 4000 people in more than 30 countries. Green Week offers a unique opportunity for stakeholders' debate and exchange of experiences and best practices.

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[95] See Opinion of the Committee of the Regions on "Multilevel governance of our natural capital: the role of local and regional authorities in promoting the EU Biodiversity Strategy 2020 and implementing the Aichi targets" http://www.toad.cor.europa.eu/corwipdetail.aspx?folderpath=ENVE-V/045&id=22633

[96] http://www.cbd.int/business/nri/eu.shtml.

[97] http://ec.europa.eu/environment/biodiversity/business/links-to-platforms/national-platforms-in-europe/index_en.html.

[98] http://ec.europa.eu/environment/biodiversity/business/links-to-platforms/global-initiatives-and-platform-outside-europe/index_en.html.

The Economics of Ecosystems and Biodiversity (TEEB) is a global initiative drawing attention to the economic benefits of biodiversity including the growing cost of biodiversity loss and ecosystem degradation. TEEB can help decision-makers recognize, demonstrate and capture the values of ecosystem services & biodiversity. The TEEB study was launched by Germany and the European Commission in response to a proposal by the G8+5 Environment Ministers in Potsdam, in 2007, to develop a global study on the economics of biodiversity loss. The study and its reports have gained recognition by environmental experts and beyond, including in the economics community, thanks to its objective analysis of the economic benefits and externalities associated with biodiversity. Over the years, TEEB's popularity has developed into a TEEB "brand" and new TEEB studies[99] have/are been published during the so called "TEEB Implementation" stage. The Commission continues to support the TEEB initiative through the ENRTP-financed TEEB National Implementation Project "Reflecting the Value of Ecosystems and Biodiversity in Policy-Making"[100] and through TEEB for Agriculture and Food[101]. Additionally, the Commission published a TEEB-inspired study on ecosystem accounting and valuation, "A synthesis of approaches to assess and value ecosystem services in the EU in the context of TEEB"[102] and is working on follow-up actions in the EU and its Member States.

The TEEB initiative has attracted many additional partner organisations and donors including the UK and Japan. Most notably, Brazil and India announced to conduct their own TEEB studies at national level. They were soon followed by several European countries including Germany who has launched several TEEB reports[103] for the period 2012-2017 to raise awareness of the diverse natural services and assets in Germany (including TEEB for Business, TEEB for Cities, and TEEB for Rural Areas and a report on Natural Capital and Climate Policy) and France who has launched the same year its national assessment of the French ecosystems and ecosystem services (*Évaluation française des écosystèmes et des services écosystémiques* – EFESE). Similar to France, the UK National Ecosystem Assessment[104] is another TEEB-inspired assessment although it does not carry the TEEB name. Spain also published a TEEB-inspired initiative in September 2014 called the Spanish Ecosystem Assessment[105], followed by further reports in 2015 on "Ecosystems and Biodiversity for Human Wellbeing" [106] and on an "Evaluation of Aquatic Ecosystems Applied to Fisheries Management"[107].TEEB Netherlands produced six TEEB reports[108] between 2012-2014 including on Regional cases, TEEB for Business, Health, TEEB for Cities, TEEB for Bonaire, and TEEB for Land Use

[99] For more information see the box on TEEB under the section "Progress Towards Actions".
[100] http://www.teebweb.org/areas-of-work/teeb-country-studies/
[101] http://www.teebweb.org/agriculture-and-food/
[102] http://ec.europa.eu/environment/nature/biodiversity/economics/pdf/EU%20Valuation.pdf
[103] http://www.teebweb.org/countryprofile/germany/
[104] http://uknea.unep-wcmc.org/
[105] http://www.ecomilenio.es/wp-content/uploads/2015/04/34.EMEC_con-portada_web.pdf
[106] http://www.ecomilenio.es/ecosystems-and-biodiversity-for-human-wellbeing-snea-synthesis-of-key-findings-download/3661
[107] http://www.ecomilenio.es/nuevo-informe-eme-evaluacion-de-los-servicios-de-los-ecosistemas-aplicada-a-la-gestion-pesquera/3785
[108] http://www.teebweb.org/countryprofile/netherlands/

Management. In 2013 a TEEB Nordic[109] report was also published analysing the socio-economic importance of ecosystem services in the Nordic Countries. In 2015 Finland published a TEEB for Finland[110] report analysing the value and social significance of ecosystem services in Finland. Portugal launched a TEEB for Portugal[111] in 2011 planned to be implemented over a period of five years. The Portuguese TEEB for business was finished, commissioned by EDP, *Energias de Portugal*.

To empower civil society around the world to protect and benefit from the conservation of critical ecosystems, the European Commission contributes to an amount of € 20 million in the **Critical Ecosystem Partnership Fund** (CEPF). CEPF is a multi-donor initiative that aims. CEPF targets the richest yet most threatened areas of the world, the Biodiversity Hotspots, and supports local, regional, national and international civil society organizations to strengthen the conservation of these unique ecosystems, while alleviating poverty of local communities. CEPF's approach is bottom up, with wide participation of stakeholders. A detailed Ecosystem Profile is prepared as a basis for investment strategies. In each region, CEPF appoints a Regional Implementation Team to provide grants to civil society in line with the Ecosystem Profile. Results include the creation of network of protected areas, green jobs, sustainable agriculture, provision of (other) vital eco-system services, networks to share information and solidifying conservation communities and mainstreaming conservation of biodiversity in development decisions. Since it was set up in 2000, CEPF invested some USD 178 million. CEPF is unique: it is the only global initiative for biodiversity and ecosystems that focuses directly on civil society. CEPF shows what cooperation between donors can achieve. The other donors are France, Japan, the World Bank, the Global Environmental Fund, Conservation International, the MacArthur Foundation and the Margaret Cargill Foundation & Mava Foundation.

In 2016, the Commission will take over the facilitation of the **Congo Basin Forest Partnership**[112] (CBFP). The Congo Basin Forest Partnership (CBFP) brings together some 70 partners, including African countries, donor agencies and governments, international organizations, NGOs, scientific institutions and the private sector, working to coordinate efforts to protect and sustainably manage forest resources in Central Africa. The partnership aims to enhance natural resource management and improve the standard of living in the Congo Basin. CBFP works in close relationship with the Central African Forests Commission (COMIFAC), the regional body in charge of forest and environmental policy, coordination and harmonisation. Launched at the 2002 World Summit on Sustainable Development in Johannesburg, the CBFP was successively facilitated by the U.S., France, Germany, Canada, US again and now European Commission in 2016. Members of the partnership meet biannually to coordinate priority activities, to propose action on emerging

[109] http://www.teebweb.org/countryprofile/nordic-countries/
[110] https://helda.helsinki.fi/bitstream/handle/10138/152815/FE_1_2015.pdf?sequence=1
[111] http://www.teebweb.org/countryprofile/portugal/
[112] http://pfbc-cbfp.org/home.html

issues and to share information with partners and networks active in the region. CBFP Activities include training for capacity- building, workshops, working committees, consultation groups and information sharing. The State of the Congo Basin Forest Report,[113], coordinated by the EU-funded Observatory for Central African Forests, present the latest research data on the Congo Basin region's biodiversity, resources and development issues.

The need for setting up a partnership among the **EU overseas entities**, which represent a unique and critical part of Europe's natural heritage, was conveyed at a high-level conference on "The European Union and its Overseas Entities: Strategies to counter Climate Change and Biodiversity Loss" under the French Presidency of the European Union in the "Message from Reunion Island". The initiative on Biodiversity and Ecosystem Services in the EU's outermost regions and Territories - BEST - is a follow-up of that meeting's outcomes. The objective of the EU's BEST Initiative[114] is to promote conservation and sustainable use of biodiversity and ecosystem services including ecosystem-based approaches to climate change adaptation and mitigation in European Outermost Regions and European Overseas Countries and Territories.

The European Parliament's BEST Preparatory Action provided seed money of a total of € 6 million for the initiative. The first two years were implemented through 2 open calls for proposals BEST-2011 and BEST-2012 and allowed the funding of 16 projects in in the regions of the South Pacific, Indian Ocean, Caribbean Region, French Guyana, Greenland, Antarctic and Macaronesia, addressing issues such as activities for designation and management of terrestrial and marine protected areas; activities for combatting invasive alien species, synergies using ecosystem services for climate change adaptation and mitigation; valuation of ecosystem services; increasing knowledge; networking, education, capacity building and outreach activities and involving organisations in the Outermost Regions, in the Overseas Countries Territories, in Member States, NGOs, regional organisations and International Organisations. A first partnership with the French Development Aid Agency (AfD) provided an additional support of € 800 000 supporting 2 reserve list proposals and supporting the work towards a sustainable scheme. The third and last year of the BEST Preparatory Action is being implemented through BEST III which shall create the critical mass to achieve the transition towards a sustainable partnership, which will allow swift and easy access for funding activities to achieve the BEST objectives. The BEST III central team and the 7 regional knowledge hubs are developing regional ecosystem profiles using CEPF methodology and BEST strategies which shall inform regional investment strategies, attract financing and trigger implementation.

In 2014 the Message from Guadeloupe called for a sustainable partnership dedicated to biodiversity building on the BEST Preparatory Action. A group should be convened utilising the support of the political leaders of

[113] http://observatoire-comifac.net/edf.php?l=en
[114] http://ec.europa.eu/best

the ORs and OCTs with the mandate to set up this voluntary partnership, including representatives of ORs, OCTS, Member States, the European Commission, European Parliament, European investment and development banks and civil society.

In the meantime and from 2015 onwards the BEST 2.0 Programme (total budget 8 million €), which is part of the EU Biodiversity for Life (B4Life) flagship, will provide capacity building and funding for small-scale and medium-scale field actions in EU Overseas Countries and Territories (OCTs). It aims supporting the BEST preparatory action objectives as well as the priority areas of actions set out in the Overseas Association Decision (OAD), particularly its Article 16.

Building on the biodiversity knowledge

Since 2010, much effort has been made at international, EU and Member States' level to improve the knowledge and evidence base for biodiversity policy. The **EU 2010 Biodiversity Baseline** is providing a reference against which the changes resulting from the implementation of the EU 2010 Biodiversity Strategy are being measured. The 2015 State of the Environment and Outlook Report and supporting assessments of the River Basin Management Plans (2012), Air Quality (2014), State of Nature (2015) and State of the Seas (2015) are built on robust factual information from Member States, and also support knowledge of ecosystems and their services in the EU in the framework of the initiative on **Mapping and Assessment of Ecosystems and their Services (MAES)**. MAES is growing into a powerful, reliable and integrated tool to assist and inform policy and decision making to fully capture ecosystem wealth and the provision of ecosystem services in support of sustaining the EU's natural capital and associated socio-economic benefits. MAES is now recognised as the most advanced regional assessment scheme under the Intergovernmental science-policy Platform on Biodiversity and Ecosystem Services (IPBES) and together with the Horizon 2020 Support and Coordination Action – ESMERALDA - will ensure a strong contribution from EU and its Member States to the regional assessment for Europe and Central Asia to be delivered by 2018 in this context.

In line with the 7th Environmental Action Programme, steps are taken at EU level to further strengthen and improve the **science-policy interface and citizen engagement**, such as through the appointment of Chief Scientific Advisors, as already done by some Member States and recently by the Commission with the setting up of a new system for scientific advice to the Commission, and by making better use of institutions or bodies specialising in adapting scientific knowledge for public policy, such as the European Environment Agency and its European Environment Information and Observation Network (EIONET), and the European Parliamentary Research Service[115]. Science-policy support mechanisms should be enhanced in the EU with the publication under Horizon 2020 of a call for "An EU support mechanism for evidence-based policy on

[115] See http://www.europarl.europa.eu/RegData/etudes/IDAN/2015/554175/EPRS_IDA(2015)554175_EN.pdf

biodiversity and ecosystems services" under the overall topic: "SC5-10-2015: Coordinating and supporting research and innovation for the management of natural resources" in 2015.

The accessibility and transparency of data and information used for decision-making is another important issue. The **Biodiversity Information System for Europe (BISE)** has been set up as single entry point for published data and information supporting the implementation and monitoring of the EU 2020 Biodiversity Strategy. Bringing together data on biodiversity and ecosystem services, it links to related policies, environmental data centres, assessments and research findings from various sources. Further developments also include the contribution of stakeholders and citizen science to strengthen the knowledge base and to support decision-making on biodiversity. BISE has integrated within its structure the European Biodiversity Clearing House Mechanism in support of the Convention on Biological Diversity. BISE is a partnership between the European Commission and the European Environment Agency.

To further support efforts associated to the global issues addressed by Target 6 of the EU 2020 Biodiversity strategy, the Joint Research Centre (JRC) of the European Commission developed the **Digital Observatory for Protected Areas (DOPA[116])**. This web based biodiversity information system is designed to assess, monitor and forecast biodiversity in protected areas globally. DOPA has been recognized by the CBD as a reference information system to assess progress towards Aichi Target 11[117] and contributed to key statistics of the 2014 Protected Planet Report[118]**.**

The provision of sound and updated biodiversity information to decision-makers is also the objective of regional observatories promoted by EU-funded projects, such as BIOPAMA, OFAC or BID. The BIOPAMA project, run by the JRC and IUCN, is setting up four regional observatories[119] of biodiversity and protected areas in ACP countries (West/Central Africa, East/Southern Africa, Caribbean, Pacific). The observatories, hosted by regional organisations such as SPREP in Pacific, combine and analyse information coming from DOPA and local providers in order help national and local decision-makers to better invest and manage protected areas. The Observatory for Central African Forests (OFAC)[120] has the same role in Central Africa, but with a broader thematic scope, including the Congo Basin forests under production. The Biodiversity Information for sustainable Development (BID)[121] project coordinated by the GBIF secretariat (Global Biodiversity Information Facility) aims at improving the quality and the use of scientific information related to biodiversity for decision-making by repatriation of existing information into structured and usable

[116] See http://dopa.jrc.ec.europa.eu/
[117] CBD notification SCBD/SAM/DC/SBG/LJ/84384 of 9 March 2015
[118] Juffe-Bignoli, D., et al.. (2014). Protected Planet Report 2014. UNEP-WCMC: Cambridge, UK
[119] http://biopama.org/observatories/
[120] http://observatoire-comifac.net/
[121] http://www.gbif.org/bid

databases, capacity-building of information providers and decision-makers and creation of national platforms dedicated to biodiversity information

Further implementation of the principle of 'produce once, use often' and the common approaches and standards on acquisition and collation of spatial information under the **INSPIRE Directive**[122] and the **Copernicus programme**[123] will help avoid duplication of effort and eliminate unnecessary administrative burdens on public authorities, as will efforts to streamline reporting obligations under different pieces of legislation. Member States gather information to assess environmental impacts of plans, programmes and projects (e.g. through environmental or strategic impact assessments) and should make this information more accessible to the public. The INSPIRE Directive is an important tool to enable the sharing of environmental spatial information among public sector organisations. It will also facilitate public access to environmental spatial information across Europe thus contributing to the implementation of the Aarhus Convention[124].

The **Science for Environment Policy service**[125] from the European Commission is providing weekly News Alert, which summarises scientific studies in easy-to-read language with policy implications clearly highlighted - the studies are carefully selected for quality and European policy relevance. They include Thematic Issues, which take an in-depth look at a key area of environmental research with policy relevance, providing a guide to the latest research in the field; and In-depth Reports, which take a comprehensive look at the latest science for key policy topics.

The **Horizon 2020 programme** provides opportunities to focus on research efforts and to deploy Europe's innovation potential by bringing together resources and knowledge across different fields and disciplines within the EU and internationally. It is supporting relevant research and innovation, notably on innovative nature-based solutions. Work is under way on assessing the contribution technical standards and innovation could make to 'growing the market' of green infrastructure solutions, and on cost-benefit analysis for opportunities in promoting EU-scale projects through a trans-European network green infrastructure initiative. Under Horizon 2020, actions will be launched to support earth observation and GEOSS (Global Earth Observation System of Systems), in particular (including filling data gaps for ecosystems, oceans and developing further citizens' observatories, etc.). It is also worth noting the significant number of ongoing research projects financed under the 7th Framework Programme for Research 2007-13 focusing specifically on biodiversity as ecosystem services, and now at different stages in their implementation (e.g. BESAFE, BIOFRESH, BIOMOT, EU BON, FUNDIVEUROPE, GENESIS, GLOBAQUA, KNEU, KNOWSEAS, LIBERATION, MARS, MIDAS, NEWFOREX, OpenNESS, OPERAs, Policymix, QUESSA, ROBIN,

[122] Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE).
[123] Copernicus is the European earth observation programme.
[124] http://www.unece.org/env/pp/treatytext.html
[125] See http://ec.europa.eu/environment/integration/research/newsalert/index_en.htm

SCALES, SPIRAL, STEP, TURAS, VOLANTE).[126] BiodivERsA[127] is a network of 31 national research-funding organisations across 18 European countries, supporting and promoting excellence in pan-European research that offers innovative opportunities for the conservation and sustainable management of biodiversity. It was initially funded under FP7 ERA-NET scheme and from 2015 under HORIZON 2020 ERA-Net COFUND scheme. The projects cover a wide range of issues. For more details on relevant research projects supporting the implementation of the strategy, see list in annex.

However, there are still significant **gaps in knowledge**, some of them relevant to the priority objectives of the 7th EAP. Investing in further data collection and research to fill those gaps is therefore essential to ensure that public authorities and businesses have a sound basis for taking decisions which fully reflect true social, economic and environmental benefits and costs. Some gaps merit particular attention.

There is a **major knowledge gap in the marine environment**: the status of most marine habitats and species is classified as "unknown". The status of fish stocks, as well as the knowledge base itself vary considerably between regional seas. Significant efforts are still needed to enhance coordination of marine biodiversity information across all regions of the EU in order to improve the knowledge base and to strengthen the analytical capacity at the EU level. An improvement of the knowledge base is a key issue for the Commission in the context of Ocean Governance.

Investment is needed to fill the research and knowledge gaps concerning in particular the **status of species and habitats,** the **contribution of the Natura 2000 network to conservation status**, the **assessment of the health and condition of ecosystems**, as well as the **links to ecosystem services**, and the **role of biodiversity as key component for resilient ecosystems, human well-being and health**. The integration and open access of biodiversity monitoring and reporting data into relevant EU legislation (including related to agriculture, fisheries, and regional policy) also needs to be further improved. This should be a priority for all knowledge partners for the remainder of the implementation period

Much is still unknown when it comes to the **status and trends of Europe's overseas biodiversity** and its relationship to the functioning of ecosystems and the long-term delivery of ecosystem services. In 2008, the 'Message' from the conference at Reunion Island underlined the critical need for establishing "long-term

[126] http://www.besafe-project.net/, http://www.freshwaterbiodiversity.eu/, http://www.biomotivation.eu/, http://www.eubon.eu/, http://www.fundiveurope.eu/, http://www.bioforsk.no/ikbViewer/page/prosjekt/hovedtema?p_dimension_id=16858&p_menu_id=16904&p_sub_id=16859&p_dim2=16860 http://www.globaqua-project.eu/ , http://www.biodiversityknowledge.eu/, http://www.knowseas.com/, http://www.fp7liberation.eu/Participants, http://www.mars-project.eu/, http://www.eu-midas.net/, http://www.newforex.org/, http://www.openness-project.eu/, http://operas-project.eu/, http://policymix.nina.no/, http://www.quessa.eu/, http://robinproject.info/home/, http://www.scales-project.net/, http://www.spiral-project.eu/, http://www.steproject.eu/, http://www.turas-cities.org/, http://www.volante-project.eu/

[127] http://www.biodiversa.org/

monitoring programmes as well as biological and socio-economic indicators adapted to the constraints specific to the outermost regions and overseas countries and territories". The current situation shows how it is difficult to analyse to what extent conservation action is sufficient to protect EU overseas biodiversity and the impact of EU policies and funds in this regard. A dedicated common set of indicators to monitor status and trends of EU overseas natural capital will be important to ensure sustainable development. Such an effort should build on ongoing activities and initiatives and should contribute to improve the effectiveness of the European policies and programmes.

Finally, the EU needs to adopt a systematic and integrated approach to risk management, particularly in relation to the evaluation and management of **new and emerging policy areas and related risks** as well as the adequacy and coherence of regulatory responses.

Horizon 2020 is contributing to meeting identified knowledge needs and supporting policy development and transition to an inclusive green economy and the interplay between socioeconomic and environmental factors. Improving our understanding of sustainable consumption and production patterns, how the costs and benefits of action and the costs of inaction can be considered more accurately, how changes in individual and societal behaviour contribute to environmental outcomes and how Europe's environment is affected by global megatrends can help to better target policy initiatives towards improving resource efficiency and relieving pressure on the environment.

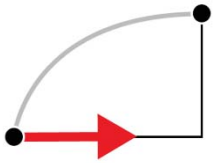
Annex I: 'Dashboard' – a summary of progress towards the targets and actions of the EU Biodiversity Strategy to 2020

The table below provides an assessment of progress made towards individual components of each of the EU biodiversity targets and actions, based on the available evidence. It aims to provide summary information on whether or not we are on track.

Progress towards targets:

On track to achieve target (if we continue on our current trajectory we expect to achieve the target by 2020)

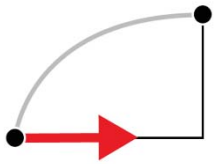
Progress towards the target but at an insufficient rate (increased efforts are needed to meet the target by its deadline)



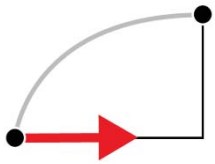
No significant overall progress (much stronger efforts are needed to meet the target by its deadline)

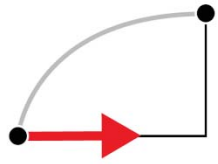
Progress on implementing actions:

☺	Fully implemented
😐+	Significant progress on implementation
😐-	Implementation lagging behind
☹	No implementation

EU Biodiversity Strategy to 2020: Targets and Actions	Progress
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.	 No significant overall progress (much stronger efforts are needed to meet the target by its deadline)
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.	 Progress towards the target but at an insufficient rate (increased efforts are needed to meet the target by its deadline)

EU Biodiversity Strategy to 2020: Targets and Actions	Progress
Action 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.	😐+
Action 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.	😐-
Action 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.	😐-
Action 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.	☺
Action 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	😐 +
Action 3a) The Commission, together with Member States, will develop and launch a major communication campaign on Natura 2000 by 2013.	☺
Action 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.	☺
Action 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	😐+
Action 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	☺
Action 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	😐+

EU Biodiversity Strategy to 2020: Targets and Actions	Progress
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.	 Progress towards the target but at an insufficient rate (increased efforts are needed to meet the target by its deadline)
Action 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.	😐+
Action 6 a) By 2014, MS, with the assistance of the Commission, will develop a strategic framework to set priorities for ecosystem restoration at sub-national, national and EU level.	😐-
Action 6b) The Commission will develop a GI 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 GI projects and maintenance of ecosystem services, for examples through better targeted use of EU funding streams and Public Private Partnerships.	☺
Action 7a) In collaboration with the MS, the Commission will develop a methodology for assessing the impact of EU funded projects, plans and programmes on biodiversity by 2014.	😐+
Action 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).	😐-
Target 3 - Increase the contribution of agriculture and forestry to maintaining and enhancing biodiversity **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. (*) Improvement is to be measured against the quantified enhancement	 No significant overall progress (much stronger efforts are needed to meet the target by its deadline)

EU Biodiversity Strategy to 2020: Targets and Actions	Progress
targets for the conservation status of species and habitats of EU interest in Target 1 and the restoration of degraded ecosystems under target 2	
Action 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).	😐+
Action 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.	😐+
Action 9a) The Commission and Member States will integrate quantified biodiversity targets into Rural Development strategies and programmes, tailoring action to regional and local needs.	😐-
Action 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.	😐-
Action 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.	😐+
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 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 importance 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	 No significant overall progress (much stronger efforts are needed to meet the target by its deadline)

EU Biodiversity Strategy to 2020: Targets and Actions	Progress
Action 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.	😐-
Action 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.	😐-
Action 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.	😐-
Target 4 - Ensure the sustainable use of fisheries resources and achieve GES 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. * *The reformed Common Fisheries Policy (CFP) which entered into force in 2014 aims to ensure MSY exploitation rates for all stocks by 2015 where possible, and at the latest by 2020.*	 Progress towards the target but at an insufficient rate (increased efforts are needed to meet the target by its deadline)
Action 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.	😐+ (NE Atlantic, Baltic) 😐- (Black Sea, Mediterranean)
Action 13b) The Commission and Member States will develop and implement under the CFP long-term management plans by fixing fishing opportunities such as quotas in line with scientific advice 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	😐+

EU Biodiversity Strategy to 2020: Targets and Actions	Progress
and sustainability principles.	
Action 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.	😐+ (NE Atlantic, Baltic) 😐- (Black Sea, Mediterranean)
Action 14a) The EU will design measures to gradually eliminate discards, to avoid the by-catch of unwanted species and to preserve vulnerable marine resources and marine ecosystems in accordance with EU legislation and international obligations.	😐+
Action 14b) The Commission and Member States will support the implementation of the Marine Strategy Framework Directive, including through providing financial incentives through the European Maritime and Fisheries Fund Regulation (EU) N° 508/2014 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.	😐+
Target 5 - Help 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.	 On track to achieve target (if we continue on our current trajectory we expect to achieve the target by 2020)
Action 15) The Commission will integrate additional biodiversity concerns into the Plant and Animal Health regimes by 2012.	🙂 (Plant) 😐+ (Animal)
Target 16) The Commission will fill policy gaps in combating IAS by developing a dedicated legislative instrument by 2012.	🙂
Target 6 – Help avert global biodiversity loss By 2020, the EU has stepped up its contribution to averting global biodiversity loss	

EU Biodiversity Strategy to 2020: Targets and Actions	Progress
	Progress towards the target but at an insufficient rate (increased efforts are needed to meet the target by its deadline)
Action 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.	😐+
Action 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.	😐+
Action 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.	😐+
Action 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 (as set out in CoP10 Decision X/3).	☺
Action 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.	☺
Action 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.	😐+

EU Biodiversity Strategy to 2020: Targets and Actions	Progress
Action 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.	

Annex II: Indicative list of research projects focusing specifically on biodiversity and ecosystem services funded under EU's seventh Framework Programme for Research (FP7) and EU research programme Horizon 2020, as well as projects from former EU Research Framework programmes FP5 and FP6

BIOTA Cluster[128]

Biodiversity rests on a vastly complex nexus of social, economic, cultural, and ecological dimensions that embrace huge scales in terms of space and time. The threat to biodiversity's richness is global but many of its pressures and drivers are local, which means that potential solutions often require detailed local or regional knowledge.

This scientific and intellectual challenge is borne out by the wide range of research projects in the Commission's last two Framework Programmes. Together FP5 and FP6 have devoted € 170 million to research regarding biodiversity and ecosystems.

Research carried out within the BIOTA cluster is the **European scientific response to the Convention on Biological Diversity and the EU 2020 Biodiversity Strategy**, and aims to determine and promote strategic approaches to the conservation of biodiversity and the management of ecosystem services in Europe.

Projects in the BIOTA Cluster:

- Assess and predict the impact of major drivers of biodiversity
- Are developing tools, such as biodiversity indicators, to promote the conservation and sustainable use of biodiversity
- Seek to identify and resolve conflicts between society, economy and biodiversity
- Support the conservation of biodiversity by creating databases on the taxonomy, biology and ecology of Europe's plants and animals.
- Strengthen scientific and technological excellence on biodiversity research through the durable integration of research capacities across Europe

All projects are co-funded by the European Community, most of them under the FP7 Biodiversity values, sustainable use and livelihoods, FP6 Global Change and Ecosystems and under the FP5 Global Change, Climate and Biodiversity Key Action of the Energy, Environment and Sustainable Development Programme.

For links to the projects see BIOTA https://wiki.ceh.ac.uk/display/biota/Home

[128] http://ec.europa.eu/research/environment/newsanddoc/article_3906_en.htm

ERA-nets seek better structuring and promoting collaboration

- BiodivERsA http://www.biodiversa.org/ is a network of national funding organisations promoting pan-European research that offers innovative opportunities for the conservation and sustainable management of biodiversity. It was initially funded under FP7 ERA-NET scheme and from 2015 under HORIZON 2020 ERA-Net COFUND scheme.
- NETBIOME http://www.netbiome.org/ and NETBIOME-CSA is a project funded by the EU FP7 CSA Scheme. NetBiome-CSA will extend and strengthen research partnerships and cooperation for smart and sustainable management of tropical and subtropical biodiversity in outermost regions (ORs) and overseas countries and territories (OCTs).

List of projects under 7th Framework Programme for Research 2007-13 relevant for biodiversity[129]:

- BESAFE (Biodiversity and Ecosystem Services: Arguments for our Future Environment) http://www.besafe-project.net/
- BIOFRESH (The network for global freshwater biodiversity) http://www.freshwaterbiodiversity.eu/
- BIOMOT (Motivational strength of ecosystem services and alternative ways to express the value of biodiversity) http://www.biomotivation.eu/
- EU BON (Building the European Biodiversity Observation Network) http://www.eubon.eu/
- FUNDIVEUROPE (Functional significance of forest biodiversity) http://www.fundiveurope.eu/
- GLOBAQUA (Managing the effects of multiple stressors on aquatic ecosystems under water scarcity) http://www.globaqua-project.eu/
- KNEU (Developing a Knowledge Network for EUropean expertise on biodiversity and ecosystem services) http://www.biodiversityknowledge.eu/
- KNOWSEAS (Knowledge-based sustainable Management for Europe's seas) http://www.knowseas.com/
- LIBERATION (Linking farmland Biodiversity to Ecosystem services for effective ecological intensification) http://www.fp7liberation.eu/Participants
- MARS (Managing Aquatic ecosystems and water resources under multiple stress) http://www.mars-project.eu/

[129] not yet included in the BIOTA cluster

- MIDAS (Managing Impacts of Deep seA reSource exploitation)
  http://www.eu-midas.net/
- NEWFOREX (New Ways to Value and Market Forest Externalities)
  http://www.newforex.org/
- OpenNESS (Operationalisation of Natural Capital and Ecosystem Services)
  http://www.openness-project.eu/
- OPERAs (Operational Potential of Ecosystem Research Applications)
  http://operas-project.eu/
- Policymix (Assessing the role of economic instruments in policy mixes for biodiversity conservation and ecosystem services provision)
  http://policymix.nina.no/
- QUESSA (Quantification of ecological services for sustainable agriculture)
  http://www.quessa.eu/
- ROBIN (Role of Biodiversity in Climate Change Mitigation)
  http://robinproject.info/home/
- SCALES (Securing the Conservation of biodiversity across Administrative Levels and spatial, temporal and Ecological Scales)
  http://www.scales-project.net/,
- SPIRAL (Interfacing Biodiversity and Policy)
  http://www.spiral-project.eu/
- TURAS (Transitioning towards Urban Resilience and Sustainability)
  http://www.turas-cities.org/
- VOLANTE (Visions of Land Use Transitions in Europa)
  http://www.volante-project.eu/
- LAGOONS (Integrated water resources and coastal zone management in European lagoons in the context of climate change)
  http://lagoons.biologiaatua.net/
- HERCULES (Sustainable Futures for Europe's Heritage in Cultural landscapes)
  http://www.hercules-landscapes.eu
- STAR-FLOOD (Towards more resilient flood risk governance)
  http://www.starflood.eu/
- MedSeA project on Mediterranean Sea Acidification in a changing climate
  http://medsea-project.eu

Outlook on HORIZON 2020 research programme 2014-2020

Under Horizon 2020, actions will be launched to support earth observation and GEOSS (Global Earth Observation System of Systems), in particular (including filling data gaps for ecosystems, oceans and developing further citizens' observatories, etc.).

- EU Horizon 2020 Coordination and support action ESMERALDA – Enhancing ecosystem sERvices mApping for poLicy and Decision mAking http://www.esmeralda-project.eu/showpage.php?storyid=11754
- "An EU support mechanism for evidence-based policy on biodiversity and ecosystem services" under the overall topic: "SC5-10-2015: Coordinating and supporting research and innovation for the management of natural resources" published in 2015

List of BIOTA cluster projects

OPERAs

OPERAs (Operational Potential of Ecosystems Research Applications) aims to improve understanding of how applying ES/NC concepts in managing ecosystems contributes to human well-being in different social-ecological systems in inland and coastal zones, in rural and urban areas, related to different ecosystems including forests and fresh water resources.

PERSEUS

Policy-orientated marine Environmental Research for the Southern European Seas (PERSEUS) is a research project that assesses the dual impact of human activity and natural pressures on the Mediterranean and Black Seas. PERSEUS merges natural and socio-economic sciences to predict the long-term effects of these pressures on marine ecosystems. The project aims to design an effective and innovative research governance framework, which will provide the basis for policymakers to turn back the tide on

VECTORS

VECTORS aims to improve our understanding of how environmental and man-made factors are impacting marine ecosystems now and how they will do so in the future. The project will also examine how these changes will affect the range of goods and services provided by the oceans, the ensuing socio-economic impacts and some of the measures that could be developed to mitigate or adapt to these changes.

SPIRAL

The overall aim of SPIRAL is to enhance the connectivity between biodiversity research and policy making in order to improve the conservation and sustainable use of biodiversity.

ALTER-Net

ALTER-Net's main objective is to achieve lasting integration amongst its 24 partner institutes, and others, all of whom are involved in biodiversity research, monitoring and/or communication. By the end of the project, ALTER-Net should have brought about sufficient change to the way these organisations work, so that they operate in a far more integrated fashion than before the start of the project.

ROBIN

ROBIN is an EU-funded project running for four years from November 2011. It will provide information for policy, together with resource use options, under scenarios of socio-economic and climate change.

CASCADE

CASCADE: (CAtastrophic Shifts in drylands: how CAn we prevent ecosystem DEgradation?) project will investigate and analyze a range of dryland ecosystems in southern Europe to obtain a better understanding of sudden shifts in drylands that may lead to major losses in biodiversity and concomitant ecosystem services.

BIOMOT

Can economic methods to assess the value of biodiversity be improved such that they reach out to what really motivates action? Can alternative approaches be developed that lie closer to what connects people to nature and can appeal to their actions instead of only to their feelings?

STEP

The project Status and Trends in European Pollinators (STEP) will document the nature and extent of these declines, examine functional traits associated with particular risk, develop a Red List of some European pollinator groups, in particular bees and lay the groundwork for future pollinator monitoring programmes.

SCALES

SCALES will seek ways to build the issue of scale into policy and decision-making and biodiversity management. It will advance our knowledge of how anthropogenic and natural processes interact across scales and affect biodiversity.

PALMS

The general scientific objectives of PALMS, supported by the European Commission under FP7 Use of natural resources: the impact on biodiversity, ecosystem, goods and services, are to study the effect of extraction and trade of palms on forest in the western Amazon, the Andes and the Pacific lowlands.

HighArcs

HighARCS has completed a detailed multidisciplinary situation analysis of highland aquatic resources, focused on values, livelihoods, conservation issues and wise-use options at five sites in Asia.

REFRESH

REFRESH is concerned with the development of a system that will enable water managers to design cost-effective restoration programmes for freshwater ecosystems at the local and catchment scales that account for the expected future impacts of climate change and land-use change in the context of the WFD and Habitats Directive.

HERMIONE

From the polar waters of the Arctic to the warm seas of the Mediterranean, Europe has almost 90,000 km of coastline. Underneath the waves our seas are home to some of the most spectacular ecosystems on Earth. Ecosystems such as cold-water coral reefs and hydrothermal vents support a huge diversity of life that is both beautiful and alien, but also vulnerable to the impacts of climate change and human activities. The HERMIONE project is focused on investigating these and other ecosystems.

CoralFISH

CoralFISH is assessing the interaction between corals, fish and fisheries, in order to develop monitoring and predictive modelling tools for ecosystem based management in the deep waters of Europe and beyond.

ConGRESS

ConGRESS (Conservation Genetic Resources for Effective Species Survival) is an EU consortium dedicated to transferring current knowledge in conservation genetics and in the analysis of genetic variation data to management professionals and policy makers.

BioFresh

A major challenge is to complement the existing databases on freshwater biodiversity and distribution patterns, along with strict quality controls, to consent the continuous integration of new data. Within BioFresh, these data will be linked with geographical and socio-economic information. By developing just such a universally accessible information platform, BioFresh will foster our understanding of present freshwater biodiversity and changes expected for the future.

BiodivERsA2

The loss of biodiversity and the degradation of ecosystems are major scientific and societal challenges. Addressing them and providing scientific support to policy requires a coherent research framework, with coordinated strategies and programmes at the regional and international levels, which are the relevant scales for many biodiversity issues.

BioScore

BioScore offers you a European biodiversity impact assessment tool. The tool contains indicator values on the ecological preferences of more than 1000 species of birds, mammals, amphibians, reptiles, fish, butterflies, dragonflies, aquatic macro-invertebrates and vascular plants. These values are linked to policy-related pressures and environmental variables.

BioScene

For centuries agriculture has played a multifunctional role in sustaining mountain biodiversity in Europe through the management of habitats, species and landscapes. With significant agricultural adjustment and contraction now in prospect, there is potential for major impacts on mountain biodiversity.

BioPlatform

BioPlatform is a network of scientists and policy makers that aims at improving the effectiveness and relevance of European biodiversity research, fulfilling functions that provide significant components of a European Research Area.

BIOMAN

The BIOMAN project looked at how biodiversity in shallow lakes, a habitat threatened throughout Europe, is affected by environmental conditions and human impacts. We wanted to develop an index that could track how biodiversity and nature value of shallow lakes respond to management.

BioHab

The key achievement of the BioHab project is the development of a standardised field recording system for Europe, involving about 100 habitat categories, that transcends the need for specialist knowledge. It will be able to provide valid, statistical estimates of habitats and link these with other habitat classifications and biodiversity.

BIOFORUM

The purpose of the BIOFORUM project is to reduce the conflict between the conservation of biodiversity and economic development

BIOECON

The main focus of BIOECON was to promote research that (a) furthers our understanding of the anthropocentric causes of biodiversity depletion and b) provides policy prescriptions on how the conservation of biodiversity can be reconciled with economic development. In particular the project was directed to the better understanding of the interface between human societies and biological resources, and how this interface might be better managed and directed to the purpose of conserving biological di

BioCASE

The Biological Collection Access Service for Europe, BioCASE, is a transnational network of biological collections of all kinds. BioCASE enables widespread unified access to distributed and heterogeneous European collection and observational databases using open-source, system-independent software and open data standards and protocols.

BioAssess

The main purpose of BioAssess- the Biodiversity Assessment Tools Project- was to develop biodiversity indicators- or "biodiversity assessment tools" - that could be used to rapidly assess biodiversity. In addition, the BioAssess project aimed to measure the impacts on biodiversity of major land use changes in eight European countries.

MIDTAL

The purpose of MIDTAL is to support the common fisheries policy to aid the national monitoring agencies by providing new rapid tools for the identification of toxic algae and their toxins so that they can comply

with ECC directive 91/1491/CEE that can be converted to cell numbers and reduce the need for the mouse bioassay.

SALSEA-Merge

SALSEA-Merge will deliver innovation in the areas of: genetic stock identification techniques; new genetic marker development; fine scale estimates of growth on a weekly and monthly basis; the use of novel high seas pelagic trawling technology; individual stock-linked estimates of food and feeding patterns; and novel stock specific migration and distribution models.

BABE

A major first objective of the BABE project will be to make a genetic inventory of the European honeybees to identify native honeybee populations by their differences in DNA. This will show the regional variation that exists in European bees. This base line data will help beekeepers to focus on and improve their native subspecies rather than rely on the importation of mated queen bees from other areas, since this would hinder improvement of native bees.

ALARM

ALARM provides coherent scenarios of socio-economic, climate, land-use and other biodiversity-relevant trends, exploring the framework conditions for biodiversity pressures. An innovative element of the ALARM project is the combination of long term trend and short term shock scenarios, allowing a sensitivity analysis of currently predominating trend projections.

SESAME

The general scientific objectives of SESAME IP, supported by the European Commission, are to assess and predict changes in the Mediterranean and Black Sea ecosystems as well as changes in the ability of these ecosystems to provide goods and services.

SOILSERVICE

The general scientific objectives of SOILSERVICE, supported by the European Commission under FP7 Contribution of biodiversity to ecosystem services, are to value soil biodiversity through the impact on ecosystem services and propose how these values can be granted through payments.

LiveDiverse

The general scientific objectives of LiveDiverse, supported by the European Commission under FP7 Biodiversity values, sustainable use and livelihoods, are to develop new knowledge on the interactions between human livelihoods and biodiversity in riparian and aquatic contexts in four developing countries (Vietnam, India, South Africa and Costa Rica).

EBONE

The key challenge of EBONE, supported by the European Commission under FP7 Contribution to a global biodiversity observation system, is to is to develop a biodiversity observation system that is transmissible, cost effective and provides added value to the currently independent data sources of in situ data and EO.

HUNT

The general scientific objectives of HUNT, supported by the European Commission under FP7 Biodiversity values, sustainable use and livelihoods, are to use hunting as a lens through which to examine the wider issue of how people interact with biodiversity.

EcoChange

The final goal is to provide data, scenarios and associated confidence limits so that policy makers and land managers can use them for anticipating societal problems and for designing sustainable conservation strategies by accounting the most likely global change effects on biodiversity and ecosystems.

Annex III: Indicative list of development cooperation projects focusing specifically on biodiversity and ecosystem services, funded under the European Development Fund and the Global Public Good and Challenges thematic programme of the Development Cooperation Instrument, as well as the former Environment and Natural Resources Thematic Programmes of the DCI.

The EU has long supported biodiversity conservation and recognised the links between conserving biodiversity and promoting human development. Starting from the mid-1980s, the EU has helped developing countries manage biological resources in a sustainable way. It has provided long-standing support to biodiversity conservation in national parks and protected areas, especially in Africa, by increasing the capacity of local authorities and NGOs in management and finance, monitoring and evaluation, and in promoting income-generating activities compatible with conservation.

The following list displays some of the most significant biodiversity programmes which EuropeAid has supported.

- **BIOPAMA:** The Biodiversity and Protected Areas Management Programme (BIOPAMA) addresses threats to biodiversity in African, Caribbean and Pacific (ACP) countries. Specifically, the programme enhances existing institutions and networks by making the best available science and knowledge available for building capacity to improve policies and better decision-making on biodiversity conservation, protected areas management and access and benefit sharing. BIOPAMA is a four year-initiative (2012-2016) funded by resources from the intra-ACP envelope of the 10th European Development Fund (EDF).

- **BMP:** The Biodiversity Management Program in the Horn of Africa Region is a four year program implemented by IGAD (Inter-Governmental Authority for Development) at the regional level, and through grants to three Implementing Partners. The programme aims to contribute to reduction of poverty through capacity building in sustainable management of biodiversity resources and by promoting regional integration in the environment sector through harmonisation of IGAD Member States' activities in sustainable management of biodiversity resources.

- **PACSBIO:** The EU is funding in Bolivia a Sector Budget Support Program (18 M EUR) to support the enforcement of the National System of Protected Areas and through it, the preservation of the natural and cultural patrimony, Sustainable economic development, Social participation in PAs management and improvement of PAs management capacities. In this context, the Joint Research Centre of the EC has been asked to develop a Digital Observatory for Bolivian protected Areas (BOPA). PACSBio includes a specific training and capacity building component on Protected Areas Management.

- **ECOFAC-V:** The best-known action of this kind is the Conservation and Rational Use of Forest Ecosystems in Central Africa Programme (ECOFAC), which protects the habitats of elephants, great

apes and other emblematic species and ecosystems. The EU has invested nearly EUR 140 million in ECOFAC since 1992, supporting 16 major protected areas in eight Central African countries, covering an area of more than 13 million hectares. The program has initiated large-scale conservation activities in Central Africa and promoted the good governance of ecosystems by national and regional institutions, in particular the Réseau des Aires Protégées d'Afrique Centrale (RAPAC)

- **PAPE:** Projet d'Appui aux Parcs de l'Entente. The project aims at improving the management of the WAP complex of national parks (complex formed by the parks of W, Arly and Pendjari at the borders of Burkina Faso, Niger and Benin) and their animal and plant resources, by a more coordinated and efficient network of three national institutions.

- **OFAC:** the Observatory for Central African Forests. (The overall objective of the Observatory is in the context of the implementation of the COMIFAC Convergence Plan for better contribution of natural resources to the fight against poverty of local populations. The State of the Congo Basin Forest Report,[130], coordinated by OFAC, present the latest research data on the Congo Basin region's biodiversity, resources and development issues.

- Support to **National Parks of Democratic Republic of Congo**. Four key national parks (Virunga, Salonga, Garamba, Yangambi and Upemba) are supported in the national programme of the EDF (120 million EUR), with a focus on local development activities around protected areas (agriculture, energy), conservation of the core area, capacity-building at graduate level and land-use planning.

- Support to **National Parks of Chad**. This program supports the Zakouma National Park since 1987 and will extend the activities to Ennédi National Park for a total amount of 53 Million EUR for the period 2014-2020.

- **CEPF**: As already mentioned in Chapter I – Horizontal Measures/Partnerships for Biodiversity – the EU joined the Critical Ecosystem Partnership Fund (CEPF) as co-donor in 2012. CEPF is currently the biggest multi-donor fund for biodiversity that specifically aims at strengthening and empowering civil society organisations in nearly all biodiversity hot spots worldwide, showing a growing influence power and fund-leveraging capacity.

- **CAWHFI** (Central Africa World Heritage Forest Initiative): The management of the vast landscape around forested World Heritage sites (Odzala, Minkébé, Dja) is coordinated by UNESCO with key partners (World Wide Fund, Wildlife Conservation Society, African Parks Network with a particular focus on the territorial planning involving local communities, national authorities and economic stakeholders (mining, logging, agro-industry).

[130] http://observatoire-comifac.net/edf.php?l=en

- **BID** (Biodiversity Information for Sustainable Development). This project coordinated by the GBIF secretariat (Global Biodiversity Information Facility) aims at improving the quality and the use of scientific information related to biodiversity for decision-making by repatriation of existing information into structured and usable databases, capacity-building of information providers and decision-makers and creation of national platforms dedicated to biodiversity information.

- **Biodiversity Conservation and Protected Area Management in ASEAN**: The Objective of this project is to contribute to global sustainability by ensuring ASEAN's rich biological diversity is conserved and sustainably managed toward enhancing social, economic, and environmental well-being. The project includes field-level interventions in selected ASEAN Heritage Parks and capacity-building of national institutions in charge of wildlife management.

- **SUPA** (Sustainable Use of Peatland and Haze Mitigation in ASEAN). The objective of the project is to promote the sustainable management of peatlands in the ASEAN region through collective actions and to enhance cooperation to support and sustain local livelihoods, reduce the risk of fire and associated haze and contribute to global environmental management.

- **WaTER** Programme **(**Kenya's Water Tower Protection and Climate Change Mitigation and Adaptation**).** The WaTER programme targets the adverse effects of climate change, and seeks to address the root causes of depletion of water towers. It has for objective to improve the quality and quantity of ecosystem services provided by Kenya's water towers through increased forest cover, improved landscape and natural resource management, and waste management systems leading to increased benefits to rural communities from forest, agriculture and agro-forestry land use systems

- **PARAMOS** – biodiversity and water reserve in the Northern Andes. The páramo is the ecosystem of the regions above the continuous forest line, in the northern Andes of South America. It is of upmost importance in water regulation in downstream watershed. This project seeks to address the threats to the hydrological regulation capacity and biodiversity of páramo ecosystems in selected key areas in Colombia, Ecuador and Peru. The project will support institutions to: define and apply conservation and sustainable management strategies; develop financial instruments to support maintenance of ecosystem services, in particular hydrological regulation and strengthen capacities of indigenous and farmers organizations to develop sustainable activities. At regional level, a knowledge exchange network will be consolidated to develop a set of resources for the management and monitoring of páramos at the Andean level.

- **AMAZON VISION**: this project, coordinated by FAO, aims at strengthening national protected areas systems in the Amazon basin countries and enhancing their regional integration. It adopts a unique regional approach at the level of the Amazon biome and involves a diversity of key regional and national stakeholders, including local communities, local and public authorities, civil society organisations and

international organisations. The project pursues four key areas of action: (1) identify priority conservation areas from a regional point of view, particularly considering climate change vulnerability and connectivity in the biome; (2) enhanced participation of indigenous and local communities in order to improve the management and governance in and around protected areas; (3) develop and implement methodologies to improve management effectiveness of protected areas; (4) financial sustainability of protected areas in the Amazon biome with practical solutions and financing strategies.

- **Conservation of Iona National Park**. The project will support the establishment of the 'Department of Conservation Areas' will focus on developing and implementing a rehabilitation programme in the largest national park in Angola, Iona National Park (15,150km2) which has a great number of unique habitats and endemic species and forms a contiguous link with the extensive coastal conservation areas of Namibia. The Project is designed as the first phase of a more comprehensive national program to rehabilitate, strengthen and expand Angola's system of protected areas.

MIKES – Minimizing the Illegal Killing of Endangered Species: This EUR 12-million project builds on the highly successful MIKE Programme (Monitoring the Illegal Killing of Elephants), which has been implemented in African elephant range states by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) with the support of the European Commission from 2001 until the present. The MIKE Programme was designed to generate reliable and impartial data on the status and trends in African elephant populations, illegal killing and the illegal trade in ivory, as a basis for international and range state decision‑making and action concerning elephant conservation, according to the mandate established by the CITES Conference of the Parties. Following a recent evaluation of MIKE Phase II, this new project initiative evaluation of – has been developed to build on the lessons learnt from implementing MIKE in Africa and Asia, and specifically to respond to the growing threat to Africa and specifically to respond to the gr the escalating international illegal trade in their ivory, as well as similar threats faced by other CITES ‑listed flagship species.