Preserving and restoring biodiversity

A Policy Brief from the Policy Learning Platform on Environment and resource efficiency

March 2022

Interreg Europe

European Union | European Regional Development Fund

Table of Contents

Summary

Nature is declining rapidly, at an unprecedented rate. One million species are at risk of extinction, and the degradation of ecosystems severely affects all life on Earth, including humans.[1] In addition to previously adopted European legislation and biodiversity strategy, the EU came up with even more ambitious targets in the Biodiversity strategy for 2030, paired with increased funding opportunities in biodiversity research and conservation efforts. This is an opportunity for policy makers, scientists, citizens and landowners to act in the areas of nature protection and restoration.

The present policy brief provides an outlook on EU initiatives that local and regional authorities can refer to for improving their management of protection and restoration of biodiversity, ecosystem services and natural areas, in compliance with the EU Directives. It also presents a selection of Interreg Europe good practices and EU-funded projects of particular interest and a high degree of replicability and adaptability to different territorial contexts.

Why do we need biodiversity and what is its current state?

Biodiversity is a term used to describe the enormous variety of life on Earth. It refers to every living organism, or more specifically to all species that belong to a specific ecosystem. Biodiversity includes plants, bacteria, animals, and humans. "*Scientists have estimated that there are around 8.7 million species of plants and animals in existence*"[2] most of which remain unidentified. All species in an ecosystem work together and are co-dependent.

Ecosystem services are the conditions and processes through which natural ecosystems, and the species that comprise them, sustain and fulfil human life. Europe's ecosystems, on which we depend for food, timber, clean air, clean water, climate regulation and recreation, suffer from unrelenting pressures caused by intensive land and sea use, climate change, pollution, overexploitation and invasive alien species. As a result, wildlife populations are in a crisis, with many species at the edge of extinction. In the last four decades alone, **global wildlife populations have fallen by 60%**[3] and nature is declining rapidly in almost every corner of the planet.

At the EU level, "*only 27% of species assessments have a good conservation status,*" with significant differences across territories. Cyprus, Ireland, Estonia and Malta reported the largest proportions (over 50 %) of species assessments showing a good conservation status. Belgium, Denmark, Estonia and Luxembourg report the highest proportions (over 20 %) of species with improving trends.

European policy as a driver for protection and restoration

A number of European policies and strategies aiming to improve the state of biodiversity already exist. So far, these have only proven successful to some extent, which is why the EU has been developing a set of binding targets and timelines set to be introduced in the near future. Many complementary targets will have to be implemented and respected by local, regional and national authorities all over the continent to allow for progress to be made in nature restoration.

---

[1] IPBES, Summary for policymakers of the IPBES global assessment report on biodiversity and ecosystem services
[2] National Geographic, Biodiversity
[3] WWF, Living Planet Report 2018

EU Biodiversity strategy for 2030

The EU has a relatively well-established biodiversity conservation policy framework, at the heart of which are the Habitats and Birds Directives. These include legislative measures that require Member States to conserve and restore threatened habitats and species. Based on the two directives, the **Natura 2000** network was created. It is the world's largest network of protected areas, currently covering over 18% of EU's land area and more than 6% of its sea territories. The EU also has several associated initiatives to strengthen the biodiversity protection. These include the EU initiative on pollinators, green infrastructure support to create corridors between natural areas, as well as specific regulation on invasive species. Despite this impressive framework, ecosystem degradation continues and biodiversity is still being lost.

NATURA 2000 - EUROPEAN UNION
- Birds Directive sites (SPA)
- Habitats Directive sites (pSCI, SCI, SAC)
- Sites - or parts of sites - belonging to both Directives

EU Natura 2000 sites, Source : European Environment Agency (2022)

To further enhance its efforts on biodiversity protection and nature restoration, the European Union has published the EU Biodiversity strategy for 2030, as part of the European Green Deal. Along with the EU Farm to Fork Strategy, it is considered a *"**potential game changer for EU nature, food and farming policies"**[4], according to WWF. It represents a long-term plan to protect nature and reverse the degradation of ecosystems through several objectives focused on areas such as climate change, forest fires, food insecurity and disease outbreaks. The strategy is divided into three main parts: protection, restoration and change enablement, done mainly through education, provision of funding, and better governance schemes for biodiversity protection. The EU hopes that the combination of ambitious targets and stronger implementation and monitoring will deliver positive results.

---

[4] WWF, Biodiversity

Protection and restoration as the key to biodiversity increase

Protection

The number of protected areas in the EU should increase to cover 30% of land and 30% of sea surface, most likely through **enlargement of Natura 2000 sites**. One third thereof (10% land-based and 10% marine) should be under strict protection. These would be, for example, areas of very high biodiversity, such as old growth forests. Due to dispersed distribution of habitats and species, their protection and conservation cannot be efficiently achieved solely through the designation and management of specific protected areas. To prevent genetic isolation, ecological corridors should be created as part of a Trans European Nature Network, to allow for species migration and to maintain and enhance healthy ecosystems.

> "Strong and coherent conservation governance, backed up by political support is a key ingredient in reaching genuine improvements in the status of habitats and species. … The participation and motivation of key stakeholders (e.g. landowners, farming organisations, foresters, hunters, fishers, and local communities) is also crucial, as is the wider recognition by society of the value of nature conservation."
> *Institute for European Environmental Policy IEEP, Drivers of successful implementation of the Birds and Habitats Directives*

> "Nature based solutions for climate and biodiversity, such as restoration of natural forests and rewetting of peatlands, could provide 37% of the climate change mitigation action needed before 2030, with clear benefits to biodiversity. Given the inextricable links between both the climate and biodiversity crises, it is imperative to consider solutions that resolve both."
> *Rewilding Europe, Europe needs large-scale restoration for nature and climate*

Restoration

The biodiversity strategy aims to **launch an EU-wide nature restoration plan**, to restore degraded ecosystems and sustainably manage them by 2030. Large scale restoration has many benefits for biodiversity recovery and climate change mitigation. It can improve the connectivity and conservation status of the Natura 2000 network, protect and restore carbon stocks and enhance the functionality of ecosystem services.

This should be achieved through various measures, including the soon-to-be-published binding nature restoration targets. Many of the targets will impact the way we manage farmland. The strategy calls for at least 25% of farmland to be cultivated organically, promoting the uptake of agro-ecological practices, aiming to establish biodiversity-rich landscape features on at least 10% of farmland, reduce the use of pesticides by 50%, reduce the use of fertilisers by 20% and the fertiliser related soil and water pollution by 50%, plant three billion additional trees, reverse the decline of pollinators and halve the number of "red" species threatened by invasive alien species. At least 25,000 km of rivers are to be restored into their original, free flowing state, contaminated soils remediated, urban areas greened, seabed damage and by-catch reduced.

Biodiversity footprint in policy and decision-making
The concept of biodiversity footprint can contribute to a better integration of biodiversity protection and restoration into public and business decision-making. Biodiversity footprint is defined as "*the impact of a commodity, company, person or community on global biodiversity, measured in terms of biodiversity change, as a result of production and consumption of particular goods and services*". Biodiversity footprint can be used in many ways: to inform and monitor biodiversity targets and policies, or to introduce biodiversity to relevant sectors such as land-use, trade, and the financial sector. It will help to address global impact on biodiversity, can be implemented in product certification schemes and help raise awareness.

There are three key dimensions of biodiversity footprint: driver of pressure (consumption/trade/production), type of footprint (species, ecosystems and ecosystem services) and method of analysis. A thorough data analysis is needed to assess biodiversity status and to link pressures to impact. Inspirational examples include The Ecological Footprint of Slovenia and TRASE: tool for calculating the impacts of trade.

Example of a biodiversity foot printing approach by ASN bank[5]
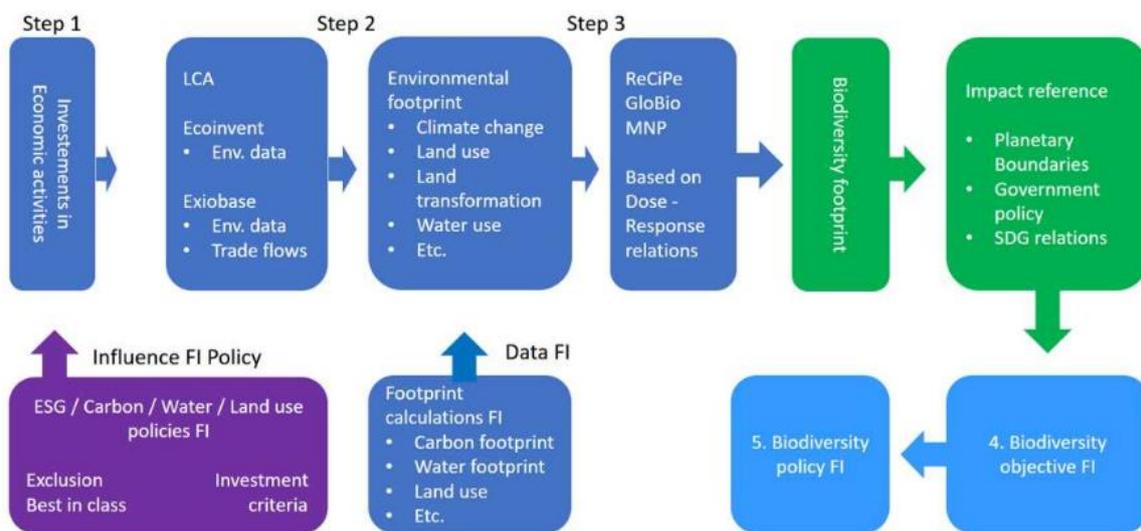
The message for local and regional policy makers is clear: there is a need to protect natural habitats, create ecological corridors connecting green areas, restore rivers, protect pollinators and native species, support organic farming and afforestation projects. The scope of the ecosystem services existing in healthy nature is immense and thriving biodiversity is closely linked to climate change mitigation and adaptation, the paramount challenge for our planet.

---

[5] Assessment of biodiversity accounting approaches for businesses, Arcadis

EU Financial Support

The Multiannual Financial Framework (MFF) adopted for the 2021–2027 programming period supports European regions in becoming greener and more circular. EU structural and investments funds (ESIFs) and direct funding instruments like the LIFE and Horizon Europe programmes will hence be accessible to projects aimed at nature restoration and biodiversity protection.

One of the five objectives of the European Regional Development Fund (ERDF) for the 2021–2027 period is a greener, low-carbon transitioning towards a net zero carbon economy and resilient Europe. ERDF supports many projects focused on biodiversity. One example is the MPA-ADAPT project that is helping Marine Protected Areas (MPAs) in the Mediterranean Sea develop ways to enhance the resilience of biodiversity, safeguard ecosystems and buffer coastal communities against the effects of climate change. Another example is the transnational AlpES project, which aims to provide a common framework for managing ecosystem services at different levels of governance throughout the Alpine Space region.

The European Commission has approved an investment package of more than €280 million from the EU budget for over 120 new LIFE programme projects. The new regulation governing the programme between 2021 and 2027 has allocated a budget of approximately €220 million out of the €280 million to a wide range of projects dealing with the environment and resource efficiency, nature and biodiversity, and environmental governance and information. This includes major investments aimed at protecting and enhancing Europe's biodiversity. The funding is expected to help the dissemination of best practices and solutions like those promoted by the Wadden Sea Birds, focused on restoration of bird habitats at the coasts of Denmark and Germany, or the SYSEL project in Slovakia, which aims to create a suitable habitat for a declining ground squirrel, to name a few.

Restoring Europe's ecosystems and biodiversity is one of the four "key strategic orientations" of Horizon Europe. As such, it was included in the first strategic plan that will guide the new EU research and innovation programme between 2021 and 2024. Horizon Europe Cluster 6 – concerning food, bioeconomy, natural resources, agriculture and environment – is expected to contribute to the aforementioned key strategic orientation and will be the major source of financial support for R&I projects in the area of nature restoration and conservation. Unlocking the potential of bio-economy and bio-based systems is indeed among the expected outcomes pursued by the programme under Cluster 6.

Such expectations have therefore been translated into various "destinations" – and related impact-driven packages of calls for proposals – that appear in the Horizon Europe work programme for 2021–2022. By way of example, in order to contribute to the 'Biodiversity and Ecosystem Services' destination, several calls for projects have been launched in 2021, with a total budget of €214.5 million. In 2022 the calls will provide funding of €161 million in total. These and other calls will enable projects like the Horizon 2020-funded Merlin project, focused on restoration of rivers, lakes, wetlands and streams across Europe. Supported projects should contribute to areas such as classification of European biodiversity via genome sequencing, identification and monitoring of endangered wildlife, evaluation of marine and coastal ecosystem services, economics of nature-based solutions and many more.

Eco-systems restoration – successful examples from Interreg Europe

According to UNEP, countries need to deliver on their existing commitments to restore one billion hectares of degraded land and make similar commitments for marine and coastal areas. Ecosystem restoration is one of the most important ways of delivering nature-based solutions to food insecurity, climate change mitigation and adaptation, and biodiversity loss.

Luckily, many local administrations in Europe have already made great progress in ecosystem restoration and biodiversity protection. In Interreg Europe, organisations create partnerships to learn from each other and apply successful measures towards these objectives. For example, the PROGRESS project aims to initiate a **process of policy change** towards the **conservation of biodiversity** and the maintenance of **nature's capacity** to produce the foodstuffs and services we all depend on. This chapter is dedicated to showcasing a selection of good practices from Interreg Europe projects that could inspire local and regional policymakers to take action. For better readability, the chapter is divided into sections on forests, pollinators and light pollution.

Afforestation and sustainable forestry

The European Union has close to 182 million hectares of forests, covering 43% of its land area, making it one of the most forest-rich regions in the world. Forests and trees have an irreplaceable function and provide a wide range of ecosystem services. They filter pollutants to provide clean air and water, regulate temperature, store carbon, stabilise soil and prevent erosion, provide medicine, food and materials. They are home to the majority of the planet's species, the main source of terrestrial biodiversity, as well as the primary carbon sink. Forests therefore play a vital role in the fight against climate change. That is why the EU has been increasingly focused on afforestation and sustainable forestry. EU's New Forest Strategy for 2030, published in 2021, has laid out a policy framework for thriving, healthy, diverse and resilient forests, which plays into our biodiversity and sustainable bioeconomy ambitions. A roadmap for planting an additional three billion trees by 2030 is also included in the strategy.

Urban Forestation Plan, Emilia-Romagna, Italy

The Urban Forestation Plan intends to plant 50,000 trees before 2030, in 100 different public green areas determined by the Municipality of Reggio Emilia. The project aims to protect the city of Reggio Emilia from pollution and climate change impacts, making urban parks more enjoyable and resilient. Forestation interventions are a part of a participatory co-designing process involving the residents of affected neighbourhoods, ensuring that both the territorial context and the needs of different communities are respected. As a result, shading, air quality and local microclimate are improved.

Incorporated in the forestation intervention, it is an experimental project in a peri-urban area that redevelops an integrated greenery. The project also includes newly built municipal gardens and an orchard area with a selection of fruits trees, helping revitalize sustainable agriculture and conserve biodiversity. The project is implemented through a public-private partnership involving different local actors, such as citizens, local associations, private enterprises and universities.

Further information on the practice is available here.

- **Community-supported afforestation (Hungary)**

The MyForest Foundation is a platform focused on tackling biodiversity loss and climate change through community-supported afforestation. It brings together environmentally conscious donors (private companies and individuals), tree planting businesses and landowners, whose property was used for the forest planting. Anyone wishing to contribute can simply get involved by buying tree seedlings on the MyForest website.

Trees are planted by volunteers as soon as there are enough purchases to afforest a specific area. In the period from 2019 to 2020, 75,226 trees were planted, resulting in three new forests on an area covering a total of 3.55 hectares. This was possible thanks to more than 1500 individuals and 150 companies who made the donations. Apart from ecosystem services restoration, the project raises awareness in the local community.

Further information about the practice is available here.

- **Forest ecosystem services mapping (Latvia)**

The aim of the Forest Ecosystem Services Mapping and Assessment Methodology (FEMAS) is to spatially map and evaluate various benefits provided by forests, as well as changes in the ecosystem services caused by different forest management operations. The Common International Classification of Ecosystem Services (CICES) was used to categorise the ecosystem services. The assessment can deliver comparable results on various spatial scales, depending on the geospatial units used in the model. Determined by the assessment scope and data availability, the indicator scales may be built on the basis of biophysical data or expert assessment.

During a research programme named 'Impact of Forest Management on Ecosystem Services From Forest and Related Ecosystems', 33 ecosystem service indicators of all three types of ecosystem services, provisioning, regulating and cultural, have been developed. The method has been used in a model area (3000 ha) representing a typical intensively managed forest to evaluate the short-term ecosystem service changes. The results have been used in the development of national indicators.

Further information about the practice is available here.

- **Protection of English Oak (Hungary)**

The project's aim was to stop the deterioration of indigenous tree species habitats (e.g. English oak) in the border region between Hungary and Croatia. Two main actions were taken to achieve that. The first was the creation of a monitoring system consisting of 60 measurement points to provide the data for subsoil water movement modelling. A network of automatic meteorological stations was created within the framework of the project, followed by the collection of precipitation data on both sides of the border. Based on the collected data, an analysis of forest conditions was carried out to examine water ecosystems, forecast development trends of oak ecosystems, and to explore the possibility of setting up an alarm system to forecast and detect malfunctions, and prepare for possible flooding and water retention.

Another project objective was to protect indigenous species from the invasive ones by using an assessment framework of invasive species, not only in Hungary, but also in Croatia. Additionally, an area of 155 hectares was cleared of invasive plants such as acacia, false indigo and tree of haven, on the Hungarian side of the border. An educational mobile app was developed as a part of the project, to demonstrate the importance of protecting indigenous plants.

Further information about the practice is available here.

Pollinators: indicators of biodiversity

Animal pollination is a vital regulating ecosystem service. In fact, 90% of wild flowering plant species depend on animal pollination, including more than three quarters of global food crops. Abundance and variety of **wild pollinator species,** as well as genetic diversity within their populations, are key indicators of **thriving biodiversity**, of ecosystems properly delivering their services and of climate change effects being under control. For many years now, it has been **scientifically** established that these indicators show negative trends, as evidenced by the declining **numbers of bees, butterflies, moths and many other insects**, birds and small mammals indispensable for plant pollination, and their genetic pool shrinking at an alarming rate. Beekeeping is also an important source of income in many rural areas.

According to the **IUCN European Red List**, the populations of one third of bee and butterfly species on our continent have been declining, and about **10% are threatened with extinction**. This is caused by the **unsustainable use of chemical pesticides, land use change, invasive alien species and climate change**, among others. In Europe many efforts are underway at all levels to reverse these worrying trends, which threaten the very survival of our environment, wellbeing as well as the economy.

The role of pollinators is directly linked to many areas and human-made products. Apart from the more obvious **provision of food,** these include medicine, production of natural fibres (cotton, linen), construction materials, arts and crafts or recreation, including musical instruments. They also serve as spiritual symbols and are an integral part of cultural and natural heritage worldwide. **Diversified farming systems** represent an important pollinator-friendly alternative to industrial agriculture. These include agroforestry, pollination increase through crop rotation, the promotion of habitat at different stages of succession, growing a wide variety of flora, home gardens and bee farming systems.

To **improve the conditions for pollinators** it is recommended to create uncultivated patches of vegetation such as field margins, to reward farmers for pollinator-friendly practices, to reduce pesticide use, to improve managed bee husbandry, to support diversified and organic farming systems, to restore natural habitats and protect heritage sites, to monitor the pollinators, and to create educational and awareness raising campaigns. Many public authorities around Europe are already taking action.

Increasing pollinator numbers and crop pollination levels (Netherlands)

The BEESPOKE project aims to increase the number of pollinators and levels of crop pollination to create more sustainable and resilient agroecosystems. The project brings a wide range of partners together – from policy makers, research Leeuwarden/Fryslan institutes, advisory and end users – to develop new products and approaches to increase the diversity of insect pollinators and crop yields by 10%.

The project develops bespoke seed mixes and habitat management guidelines to support the mixture of pollinators required for 14 crop types on 72 demonstration sites. BEESPOKE will enable land managers to adopt pollinator management as a routine practice, fostering a bottom-up, land manager approach, ensuring continuing improvement of crop pollination by insects.

Further information about the practice is available here.

Protecting farmland pollinators (Ireland)

The 'Protecting Farmland Pollinators' (PFP) scheme consists of a pollinator-scoring and results-based payment method that serves the purpose of disseminating agroecological practices beneficial to pollinators and biodiversity.

Under PFP, a score is calculated based on existing pollinator-friendly, farm-level management practice. Its long-term purpose is to help farmers understand how bee-friendly their agriculture is, and guide them to take up simple and affordable performance-improving solutions while maintaining high productivity levels. Farmers taking part in the PFP scheme receive an annual payment on the basis of their overall pollinator score. The score is calculated based on an assessment of agricultural landscape features (both qualitative and quantitative) and agroecological practices that are maintained and put in place with a view to establish favourable conditions for wild pollinators.

Further information about the practice is available here.

Tackling light pollution

Light pollution, or the presence of excessive artificial lighting, is a global issue that negatively impacts humans and animals alike. In humans, nocturnal light disrupts sleep patterns or melatonin production. Animals are suffering too, migration patterns, wake-sleep habits, and habitat formation are all affected. Sea turtles and birds use moonlight for guidance during migration. Because of light pollution, they get confused, lose sense of direction, and often die. Large numbers of insects are killed by artificial light to which they are drawn. This disrupts the food chain, since they are the primary food source for birds and other animals. The EU has published a series of recommendations to reduce light pollution, and many cities have adopted a "Lights Out" program to turn off building lights during bird migration.

Policy change in Luxembourg (Luxembourg)

"Nature Park Our" has joined the Night Light project to tackle the light pollution problem. The exchange with partner regions provided them with insight and new ideas on combining the fight against light pollution with nature conservation. The project gave birth to an idea integrating light pollution as an additional risk factor into Natura2000 management plans. At the core of the suggestion was prioritizing mitigation of light pollution's negative effects on the country's protected natural areas. The participation of governmental representatives, as well as the involvement of the responsible Secretary of State, eventually led to a successful modification of the ministerial orders for Natura2000 management plans to include light pollution.

Light pollution in Europe, source: lightpollutionmap.com

Night Light
Interreg Europe
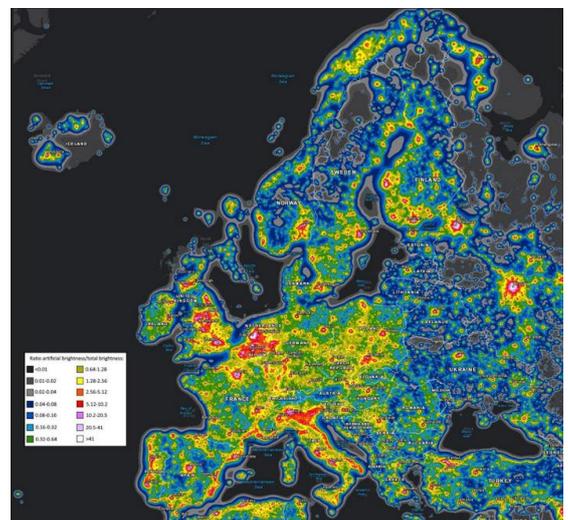
- **Guidelines for good lighting in outdoor spaces (Luxembourg)**

In order to assist Luxembourgish municipalities with planning and implementing measures to avoid unnecessary light emissions, the Ministry of the Environment, Climate and Sustainable Development commissioned the formulation of guidelines for good outdoor lighting infrastructure. The guidelines explain the facts and provide specific recommendations for sustainable outdoor lighting without any loss of comfort. The guidelines were formulated in 2017 as a result of a national light emission study, thanks to which light pollution can now be better assessed at the municipal level. With the guidelines at their disposal and focal points singled out (such as public lighting at street junctions, sports fields, cultural monuments and churches), regional authorities are able to make informed decisions when developing and prioritising measures.

Further information about the practice is available here.

- **Dynamic lighting in a protected area (Slovenia)**

Jezersko, at once the highest and the smallest municipality in Slovenia's Carniola region, has invested in smart and dynamic lighting to increase energy efficiency and life quality in the protected area. To this end, the shapes of lamps and poles needed to be adapted to the requirements of Slovenia's Institute for the Protection of Cultural Heritage. Lights were set up on a road section and a cross-country skiing track parallel to it. The upgraded lighting infrastructure incorporates a system that separately controls the illumination of the road section and the ski tracks. When there is no traffic the lighting is dimmed to 10-20% of standard intensity. After 23.00, the lighting switches off until the next cycle. Recreational cross-country skiing tracks are only illuminated in winter, at locations along the road section. The dynamic lighting method can be integrated into existing public lighting infrastructure systems without modifying public lighting elements. Local communities thus get to benefit from both lower electricity bills and reduced light pollution.

Further information about the practice is available here.

- **Samsoe – a dark sky island (Denmark)**

Denmark's Samsoe island is known for the high quality of its natural environment, which is a considerable part of its touristic appeal. A team around the Municipality of Samsoe and the local Energy Academy kick-started 'Dark Sky Samsoe" at the Crows Marsh in the island's northern part. The location was chosen because of its easy accessibility, good infrastructure and well-developed tourism. Moreover, the protected, extraordinary area in question, dating to the ice age, is mainly owned by the government and the municipality of Samsoe, with no neighbouring private landowners. Finally, the Crows Marsh is one of the absolutely darkest spots on the island, located on the east coast, sheltered from the biggest light polluter: the city of Aarhus on mainland.

The project has expanded and is now implemented on the whole island. All public street lighting has been upgraded to LEDs and is switched off for six hours during the night. The island is trying to act as a role model, showing how to save energy and reduce light pollution to other villages throughout Denmark. The original investment of €380,000 (DKK 2.855.000) is repaid by energy savings. Besides the benefits of energy and money savings, a short payback period and a longer lifespan of the light infrastructure, the island can now boast better light quality, preventing light pollution and inspiring citizens to reassess the lighting in their homes.

Further information about the practice is available here and here.

Reducing the impacts from invasive alien species on biodiversity

Guest contribution from the European Commission, DG Environment

Author: Leonardo Mazza

Invasive Alien Species (IAS) are one of the five major causes of biodiversity loss in Europe and worldwide. What damage are they causing?

IAS can cause local extinction of indigenous species, for instance by competing for limited resources, such as food and habitat, inter-breeding, or the spread of disease. They can disrupt the functionality of entire ecosystems, compromising their ability to provide valuable services, such as pollination, water regulation or flood control.

The impact of IAS is often also economic, such as reduced agricultural, forestry and fishery yields. They can damage infrastructure, hinder transportation or decrease water availability by blocking waterways or clogging industrial water pipes. Additionally, IAS can be a major problem for human health, triggering serious allergies and skin problems, and also acting as vectors for dangerous pathogens and diseases. The estimated yearly cost of their negative impact on the European economy is at least €12 billion.

The EU Biodiversity Strategy aims to minimise the introduction and establishment of IAS in the environment and commits to decrease the number of Red List species they threaten by 50% by 2030. How is the EU planning to manage this process and to achieve these ambitious objectives?

Regulation (EU) No 1143/2014 on the prevention and management of the introduction and spread of invasive alien species (the IAS Regulation), which entered into force in 2015, is the main instrument through which we address this challenge at EU level. It aims to: (i) prevent, minimise and mitigate the adverse impacts of IAS on biodiversity and ecosystem services; and (ii) limit social and economic damage. The list of IAS of Union concern ("the Union list") is at the core of the IAS Regulation. It contains IAS whose adverse impact is deemed sufficiently severe to require concerted action at Union level. The list currently comprises 66 species, more specifically 36 plant species and 30 animal species. Beyond the full implementation of the IAS Regulation, the implementation of other relevant legislation and international agreements, such as the Ballast Water Management Convention, will have to be stepped up. The Commission is supporting Member States in achieving a coherent implementation of the IAS Regulation through a range of measures, such as the publication of codes of conduct, identification guides for customs officials and awareness-raising activities. In addition, in June 2021 the Commission initiated legal action against fifteen Member States that did not meet their obligations under the IAS Regulation.

Regarding funding to support the implementation of the IAS Regulation, the Commission supports action on invasive alien species through its existing financing instruments, such as the EU Programme for the Environment and Climate Action (LIFE), Horizon Europe, European Agricultural Fund for Rural Development (EAFRD), European Maritime Fisheries and Aquaculture Fund and Cohesion funding. Measures to fight the IAS can be also supported under the Recovery and Resilience Facility (RRF).

In your view, what are the key barriers and policy problems with regard to tackling the threat of Invasive Alien Species?

The IAS Regulation requires Member States to take measures to prevent the introduction and spread of listed species which include, for example, identifying their introduction pathways (routes and mechanisms of the introduction and spread), carrying out official controls, setting up surveillance systems and managing the IAS widely present in their territory.

In October 2021 the Commission published the first report on the application of the IAS Regulation which identified a number of implementation challenges. For instance, most Member States have not yet implemented action plans to address priority pathways. Furthermore, there is room for improvement in both the comprehensiveness of surveillance systems' coverage and official control structures in many Member States.

Some Member States lack sufficient funding and the administrative capacity to address IAS. This contributes to a patchy implementation of the regulation's various provisions. Other remaining key challenges are linked to the projected increase in global trade and travel, which, together with climate change, increase the risk of the spread of invasive alien species.

Invasive Alien Species threatening biodiversity and eco-systems

The European Regulation on the Prevention and Management of the Introduction and Spread of Invasive Alien Species defines "alien species" as "*any live specimen of a species, subspecies or lower taxon of animals, plants, fungi or micro-organisms introduced outside its natural range*", whereby **"invasive alien species"** means an *"alien species whose introduction or spread has been found to threaten or adversely impact biodiversity and related ecosystem services".*

According to the European Commission, there are currently over 12,000 species present in Europe which are alien to the natural environment. About 15% of these are invasive and they are rapidly growing in number. **Invasive Alien Species (IAS) represent a major threat to native plants and animals in Europe and can cause severe ecological effects on the invaded environments,** as they might act as vectors for new diseases, cause native species' extinction, change ecosystem processes, and reduce the value of land and water for human activities.

In light of these issues, the EU Biodiversity Strategy reiterates the importance of tackling this threat by proposing to "*manage established invasive alien species and decrease the number of Red List species they threaten by 50%*" by 2030. To reach this objective, local and regional authorities in the Member States should increase their efforts to ensure full compliance with the IAS Regulation. To this end, the Interreg Europe project INVALIS, for example, enables the participating territorial authorities to address common challenges associated with biological invasions, such as knowledge gaps in ecosystems' vulnerability to biological invasions and species' distribution, lack of awareness about IAS environmental and socioeconomic risks, low level of cooperation between public authorities and key stakeholders for the implementation of IAS management measures and related conflicts of interests.

Source : Plants and Animals – IAS https://www.health.belgium.be/en/animals-and-plants/biodiversity/invasive-alien-species/ias-fight-against-invasive-alien-species

A guide to the alien plants of Greece

The guide to the alien plants of Greece with reference to the NATURA 2000 Protected Areas Network provides for the first time a catalogue of such species and is accompanied by a web-based platform, www.alienplants.gr, to help better understand the impacts of biological invasion, as well as the effects on natural ecosystems and the related human activities and economy. The web platform offers a checklist of the country's alien plants, a search function allowing sorting the results by functional and ecological characteristics of plant taxa (including families, flora, origin etc.), as well as dynamic graphical presentations and statistical reports. Modern visualisation tools are used for all alien plants, followed by reports that can be exported in different spatial scales (national, regional, local), so that interesting reports and analyses could be produced not only for research purposes, but also for policy planning. The National Guide is an excellent tool for policy planning across Europe to tackle one of the most important threats to biodiversity and functioning of natural ecosystems in Europe.

Further information about the practice is available here.

Recommendations and key learnings

This brief shows many policy solutions implemented on the ground to successfully tackle biodiversity protection and restoration. Policy makers at all administrative level can take inspiration and start now working on their own territories, following some of the recommendations Interreg Europe projects can suggest:

- **Include biodiversity in local policies**, develop local biodiversity strategies and action plans. Use the biodiversity footprint concept to integrate nature protection and restoration into local, regional and national policies. For inspiration see The Ecological Footprint of Slovenia.
- **Raise citizen and stakeholder awareness** on the topics of biodiversity, nature restoration, conservation and ecosystem services. Offer clear guidance to citizens on how to support native species and local biodiversity. Explain the essential role of biodiversity and why we have to protect it. Flyers for households with tips for individual action, special information days, stands on markets, school seminars etc. are all valuable ways to bring people on board. For inspiration see the French Biodiver'high school program.
- **Plant more trees.** Introduce afforestation programs and increase the number of green spaces in your municipality or region. Develop an urban forestation plan like the city of Reggio Emilia (Italy) or implement a community supported afforestation model like the MyForest Foundation (Hungary).
- **Improve the conditions for pollinators and monitor the results.** Create uncultivated patches of vegetation, such as field margins, reward farmers for pollinator-friendly practices as in Ireland, reduce pesticide use, improve managed bee husbandry, support diversified and organic farming systems, and introduce special seed mixes and habitat management guidelines as in Frysland (Netherlands).
- **Tackle light pollution** and raise energy efficiency. Develop guidelines for good lighting in outdoor spaces as in Luxembourg, identify and develop dark sky areas as on the Samsoe island in Denmark and develop dynamic public lighting in protected areas as they did in Jezersko in Slovenia.
- Support and **protect native species and natural habitats**, for instance when creating new green areas. Make guidelines and lists of invasive alien species available to public and private institutions as in Greece. Management strategies can include preventive actions towards new invasions, regulation of population numbers using various methods, impact mitigation and/or landscape modification. This requires a targeted approach considering the species- and the area-specific context.
- **Create ecological corridors** connecting green areas to make nature and wildlife more resilient.
- **Restore rivers and wetlands**. Include river restoration, freshwater biodiversity and flood protection in strategic plans of the city. For inspiration see example of restoration of river Cagne in France, or the revitalisation of Lobzy park in Czech Republic.

Interreg Europe Policy Learning Platform support to regions in biodiversity conservation and restoration

Interreg Europe, through its Policy Learning Platform, provides a number of services to both ongoing projects and the wider regional policy Community. As well as operating the Good Practice Database, drawing together the best of the good practices, and providing a Knowledge Hub of policy briefs and articles, the Policy Learning Platform offers on-demand Expert Support, including a helpdesk, matchmaking service and peer reviews to assist regions in their transition:

- Via the Policy Helpdesk, policy-makers may submit their questions to receive a set of resources ranging from inspiring good practices across Europe, policy briefs, webinar recordings, information about upcoming events, available European support and contacts for relevant people, as well as matchmaking recommendations and peer review opportunities.
- Matchmaking sessions are thematic discussions hosted and moderated by the Policy Learning Platform and designed around the policy needs and questions put forward by the requesting public authority or agency. It brings together peers from other regions in Europe to present their experiences and success stories to provide inspiration for overcoming regional challenges.
- Peer Reviews are the deepest and most intensive of the on-demand services, bringing together peers from a number of regions for a two-day working session to examine the specific territorial and thematic context region in question, discuss with stakeholders, and devise recommendations for the region.

Other sources of information can be found here:
- Policy Brief on biodiversity governance
- Policy Brief on urban ecosystems
- Policy Brief on biodiversity and natural heritage
- Policy Brief on ecosystem services: Interregional cooperation for sustaining the European natural capital
- Policy Brief on Rivers and wetlands: drivers of sustainable regional development
- Webinar recording on 'Living rivers: a driver for sustainable regional development'
- Workshop recording on 'Preserving and restoring ecosystems and biodiversity'

Other sources
- The European Green Deal
- All-Ireland Pollinator Plan (National Biodiversity Data Centre, Ireland)
- Protecting Farmland Pollinators (National Biodiversity Data Centre, Ireland)
- EU Pollinator Information Hive (European Commission)
- LIFE projects relevant for pollinators (European Commission)
- Horizon 2020 projects relevant for pollinators (European Commission)
- Video on the EU Pollinators Initiative (European Commission)
- Video on the All-Ireland Pollinators Plan (PROGRESS)
- ICLEI, A guide for pollinator-friendly cities
- IEEP, Key recommendations for supporting pollinator-friendly farming in the EU
- IPBES, Pollinators, pollination and food production
- UNEP, Ecosystem restoration for people, nature and climate
- GPP-Stream project Good Practice: Energy Efficient Street Lightening in Zlatohrad, Bulgaria
- European Commission, Revised GPP criteria for road lighting
- National Geographic article: Nights are getting brighter, earth is paying the price
- European dark sky projects
- The International Dark Sky Association website
- Research Institute for Nature and Forest, Guidance for drafting best management practices for invasive alien species

Interreg Europe Policy Learning Platform on Environment and Resource Efficiency

Thematic experts:
Astrid Severin – Magda Michaliková
a.severin@policylearning.eu m.michalikova@policylearning.eu

Contact us to share your views on this policy brief!

Environment and resource efficiency

www.interregeurope.eu
March 2022

Image credit cover page: Pexels

Interreg Europe

European Union | European Regional Development Fund