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The Guide to Multi-Benefit Cohesion Policy Investments in Nature and Green Infrastructure

Regional and Urban Policy

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THE GUIDE TO MULTI-BENEFIT COHESION POLICY INVESTMENTS IN NATURE AND GREEN INFRASTRUCTURE

June 2013

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STANDARD DISCLAIMER

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FOREWORD

As a major exit strategy of the current economic crisis, boosting sustainable development represents a real opportunity for Europe and its regions and cities. In the 2014-2020 programming period, cohesion policy will significantly increase its investments in bringing about the switch to a low-carbon and resource efficient economy.

We know that it is not an easy task to face the challenges of climate change, sustainable energy and the preservation of nature and biodiversity. Therefore our aim is to help authorities and stakeholders in the Member States and regions with practical support to enable an efficient and successful implementation of sustainable growth measures through cohesion policy. In this respect we have, over recent months, developed a number of guides and tools such as the guide on "Connecting Smart and Sustainable Growth through Smart Specialisation" or the IT tool "CO2MPARE" on carbon management of the Operational Programmes.

I now have the pleasure to introduce this new "Guide to Multi-Benefit Cohesion Policy Investments in Nature and Green Infrastructure". Cohesion policy has been an active partner in helping regions to preserve and ensure the sustainable management of their natural assets. All over the European Union we have co-funded projects in Natura 2000 areas, the restoration of wetlands and floodplains, the development of green corridors and information systems for the monitoring of biodiversity.

Similar investments will be carried out between 2014 and 2020. In this framework the objective of this guide is threefold. First, showing that investments in nature, biodiversity and green infrastructure are relevant for cohesion policy. Second, emphasising how investments of the ERDF and Cohesion Fund in nature and green infrastructure can actually contribute to several policy objectives and deliver multiple benefits, in particular socio-economic development. And third, assisting authorities and stakeholders with practical recommendations to improve the delivery of the co-funded programmes and projects.

This guide underlines the crucial interconnections which exist between nature, society and the economy. Adaptation to climate change, prevention of natural disasters such as floods, preservation of water quality and quantity and jobs in the tourism or agro-food sector are intimately linked. It is about ensuring this integrated approach is followed when working on investments in nature and green infrastructure.

Regional policy will be vital for mobilising the potential of EU regions and cities to decouple growth from resource overuse, in particular through the preservation and sustainable management of natural assets. That is why this guide sets out to help develop and implement the next programming period (2014-2020). This guide is not an academic publication but a practical document with clear and concrete recommendations and several examples of good practice that show potential ways forward in order to realise the full potential of cohesion policy investments in nature.

I would like to encourage all authorities and stakeholders involved in the preparation of the next programming period and the subsequent implementation of the related projects to make full use of this guide.

Walter DEFFAA
Director General for Regional and Urban Policy

1. INTRODUCTION TO THE GUIDE

This SMART Guide to multi-benefit Cohesion Policy investments in nature and green infrastructure is the initiative of European Commission's Directorate General (DG) for Regional and Urban Policy, in consultation with DG Environment, to help with the Cohesion Policy design and implementation across the EU. It was developed by the Institute for European Environmental Policy (IEEP) and Milieu Ltd.

The mounting evidence of the multiple benefits from nature and how these can help meet Cohesion Policy objectives has led to an increased interest in understanding how Cohesion Policy and its tools can be used to obtain synergies and multiple benefits. Key questions the Guide aims to answer:

- What are the values of nature and how are they important for Cohesion Policy objectives?
- How can Cohesion Policy tools and approaches be used to enable current and secure future multi-benefits from nature?
- What can we learn from practical experiences to inform regional development?

The Guide is directed at helping with on-going implementation of Cohesion Policy 2007-2013, as well as form a useful toolkit and information source for the development and implementation of Cohesion Policy 2014-2020.

THE TARGET AUDIENCE

This Guide is aimed at all the stakeholders engaged in Cohesion Policy and its implementation. Namely, the Guide is for those who are developing the partnership agreements and Operational Programmes, to those setting regional objectives, plans and processes and finally, those selecting, assessing and implementing major projects.

The Guide is for stakeholders who are interested in furthering the Cohesion Policy objectives of cohesion, solidarity, jobs and growth and seeing how working with nature can help these objectives. The Guide is also aimed at those stakeholders interested in seeing how to make use of Cohesion Policy funding for nature to realise conservation benefits and wider ecosystem service benefits.

Furthermore, the Guide will support regional and national authorities in meeting their legal obligations in respect to legislation on biodiversity conservation (notably the Bird and Habitats Directives), as well as compliance with a range of other commitments under the wider body of EU environmental law.

Finally, the Guide will also be useful for a wider set of stakeholders as it also addresses issues such as water security, climate change, health, wellbeing and culture where the nature-Cohesion Policy interface can help contribute to meeting their objectives.

STRUCTURE OF THE GUIDE

PART .01

of the Guide is an introduction to the multiple values and the rationale for investing in nature and biodiversity. It underlines the economic benefits, the importance for legislative compliance and the wider synergies between biodiversity and Cohesion Policy.

PART .02

focuses on investment choices. It provides insights and guidance on the opportunities for enhancing investments in nature (e.g. through green infrastructure) which can deliver multiple benefits for economic, social and territorial cohesion (section 4).

PART .03

of the Guide presents recommendations on how to plan, implement and follow-up programmes and projects to ensure maximum benefit to nature and synergy with Cohesion Policy. It presents the details of the different Cohesion Policy tools and instruments and how they can be used to realise the benefits of working with nature and avoid unnecessary trade-offs and inefficiencies. It focuses on: strategic planning and programming (section 5); information and support to project development (section 6); project eligibility, appraisal and selection (section 7) and implementation, monitoring and evaluation (section 8).

ANNEX

includes all case studies that illustrate the benefits of nature and the application of different tools and measures.

PART 01

RATIONALE FOR INVESTING IN NATURE AND BIODIVERSITY

2. BACKGROUND AND CONTEXT

Since the publication of the Millennium Ecosystem Assessment[01], there has been an ever increasing recognition of the multiple benefits from nature to society. The appreciation of the intrinsic values of biodiversity – in other terms the diversity of ecosystems, habitats, species and gene pools – is now complemented by an understanding of the importance of nature in supporting human and societal well-being, sustainable development and the economy.

The understanding of the socio-economic importance of nature has been developing rapidly, supported by, inter alia, the TEEB (The Economics of Ecosystems and Biodiversity) initiative (www.teebweb.org). There is a growing evidence base of the importance of nature for local and regional development and an increased recognition by public authorities, private businesses, communities and academia that working with nature can, and should be, an integral element in local and regional policy.

While the importance of nature and the benefits it provides is increasingly appreciated now, this has not always been the case. To date many of the benefits of nature are still not understood or taken into account in decision making processes. This 'invisibility of nature' has contributed to the on-going loss of biodiversity. Knowledge of the benefits of nature promotes an understanding of the trade-offs and impacts of our decisions.

01. MA (2005)

This Guide introduces the roles, the benefits and the related values of nature. Furthermore, it shows how nature contributes to multiple policy objectives, and why it is fundamentally relevant to Cohesion Policy and its implementation (see Box 1). It underlines the socio-economic benefits and the synergies that exist between biodiversity conservation objectives and cohesion policy, as well as climate mitigation and adaptation, water security, environment and health, and resource efficiency. The Guide explains why working with nature is integral to achieving a resource efficient green economy as well as EU and Cohesion Policies' sustainable growth objectives.

BOX .01

EVOLVING CONTEXT OF COHESION POLICY TOWARDS WORKING WITH NATURE AND OVERCOMING CHALLENGES

In line with objectives set in the EU Treaties, EU Cohesion Policy has mostly dealt with addressing regional disparities and bringing structural change to the economies of 'lagging European regions. Therefore, Cohesion Policy and its funding instruments have largely focused on economic and social objectives, in particular job creation and economic growth. Investment expenditure has focused on major infrastructure projects such as road and rail, as well as environmental infrastructure to comply with EU legislation and to ensure access to water, waste water and waste management infrastructure across the EU.

However, the political realities of the European Union are changing, as is the context for Cohesion Policy. Long term challenges, such as climate change, energy security, resource scarcity (raw materials, water), biodiversity loss, global competitiveness, an aging society, and the political stability of the EU's neighbours, have become key strategic priorities of the EU. Coupled with short-term threats, such as increasing sovereign debt and fiscal discipline, and the challenges posed by implementation of EU legislation, the result is a demand for intelligent, timely and forward-looking policy responses. These challenges to a degree have been reflected in the 2007-2013 Cohesion Policy, which contains provisions that ensure the strategic alignment of Cohesion Policy to sustainable development objectives, but also the environmental objectives of the EU Treaties and environmental *acquis*.

The 2014-2020 Cohesion Policy is based on the Europe 2020 strategy, which sets out the objectives for smart, sustainable and inclusive growth. It is also complemented by a wide range of EU strategies and commitments, for example the commitment to halting biodiversity loss, and investing in restoration and green infrastructure (CBD 2010 Aichi Accord and the 2011 EU Biodiversity Strategy – see Box 2). Similarly the growing evidence base of the benefits of addressing environmental ▸

concerns – e.g. climate change[02], biodiversity[03] and environmental improvements for health – is changing the underlying paradigm from one where economy and environment are seen as trade-offs to one where the synergies and co-benefits are increasingly appreciated.

There is a rationale that the greatest value to stem from EU financed interventions in the context of Cohesion Policy is via the provision of support that: 01. Delivers multiple benefits and 02. Enables regions to achieve complex policy objectives such as, regional development, jobs, growth, competitiveness, education & culture, as well as water, resource efficiency and biodiversity goals. This will help address economic, social and territorial disparities (Treaty Objective 1) and S*olidarity with Member States* to catch up with *EU standards* (Treaty Objective 2), while at the same time helping to implement the Europe 2020 Agenda.

Working with nature will also complement regions' and countries' efforts to comply with legislative requirements for biodiversity conservation, notably the Birds and Habitats Directives and EU's Biodiversity Strategy to 2020 (see Box 2). It will also help meet requirements and commitments under the Water Framework Directive (WFD), Air Framework Directive and Integrated Coastal Zone Management (ICZM). It will help to meet the objectives of the Floods Directive as well as the objectives of EU's Strategy of Adaptation to Climate Change in those regions at risk.

BOX .02

LEGISLATIVE AND POLICY DRIVERS FOR THE INVESTMENT IN NATURE[04]

Birds and Habitats Directives and the Natura 2000 network: The Birds Directive[05] and the Habitats Directive[06] , form the main legal framework for the protection of nature and biodiversity in the EU. The Directives require two main types of activities. Firstly, the designation, implementation and management of protected sites which are particularly important for conserving and restoring EU biodiversity. Secondly, the strict protection of the species lists in the Directives, as well as their breeding sites and resting places, wherever they occur. In addition, there are strict rules under Article 6 of the Habitats Directive as regards projects that can potentially negatively impact Natura 2000 sites.

The establishment, protection and management of a coherent network of protected areas, the Natura 2000 network is designed to protect the habitats and species. Currently, the Natura 2000 network comprises of 26,000 sites, covering almost 18 per cent of the EU territory. It includes terrestrial Special Areas of Conservation (SACs), with an area of 59 million ha (0.59 million km2), terrestrial Special Protection Areas (SPAs) with an area of 49 million ha (0.49 million km2) and a growing marine protected area (MPA) network – now at 14.5 million ha. The network is a core element of the wider EU green infrastructure, which together form a great part of our living natural capital.

In relation to investing in nature under the EU Cohesion Policy, Article 8 of the EU Habitats Directive states explicitly that the implementation of the Natura 2000 network should be supported ▸

02. Stern (2006)

03. TEEB (2011a)

04. Mazza *et al.* (2011)

05. 2009/147/EC

06. 92/43/EEC

by funding from relevant EU funds, including the EU Structural and Cohesion Funds. Dedicated guidance has been developed by the European Commission that presents the EU funding options for Natura 2000 sites in the period 2007-2013 that are, in principle, available at the national and regional level[07] . In 2013, this guidance will be updated to provide guidance on possibilities of financing Natura 2000 for the programming period 2014-2020.

Furthermore, Article 6 of the Habitats Directive aims to minimise any negative impacts of investment on biodiversity. The processes for implementing the Article 6 safeguards can be used as a basis for identifying synergies between biodiversity conservation and cohesion policy objectives. These processes include:

- A screening for potential impacts of projects;
- An assessment of risks of impacts on the integrity, structure and function of sites as well as their conservation objectives. This includes an assessment of mitigation measures to avoid, minimise and/or as fully as possible offset negative impacts;
- An assessment of alternatives to achieve the objectives without compromising the integrity of Natura 2000 sites;
- An assessment of measures or compensation for any significant adverse effects if the project is to go ahead under imperative reasons of overriding public interest (IROPI).

EU Biodiversity Strategy and its targets: The EU's Biodiversity Strategy (COM(2011) 244) has a 2020 headline target: Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them where feasible, whilst stepping up the EU contribution to averting global biodiversity loss. The six main targets relate to: **(i)** the full implementation of EU nature legislation [mentioned above] to protect biodiversity; **(ii)** the better protection for ecosystems, and more use of green infrastructure (including a 15 % restoration target); **(iii)** more sustainable agriculture and forestry; **(iv)** better management of fish stocks; **(v)** tighter controls on invasive alien species (IAS); and **(vi)** a bigger EU contribution to averting global biodiversity loss.

Water Framework Directive (WFD): The WFD does not address green infrastructure directly. It does however aim to prevent further deterioration of water quality, to protect and enhance the status of aquatic ecosystems, related wetlands and terrestrial ecosystems, to ensure sustainable water use by protecting available water resources, to progressively reduce the pollution of groundwater, to prevent further pollution, to mitigate the effects of floods and droughts. It recommends the restoration of wetlands as a possible supplementary measure to achieve the WFD objectives. The opportunities for the involvement of stakeholders affected by the creation and management of river basin management plans (e.g. broader public, experts, and landowners) may offer opportunities for green infrastructure identification and implementation in the area of water policy.

Floods Directive: The Floods Directive does not directly address green infrastructure. However, the Directive aims to reduce and manage the risks that floods pose to the environment as well as human health, cultural heritage and economic activity. The flood risk management plans 'shall take into account areas which have a potential to retain flood water'.

Integrated Coastal Zone Management (ICZM): The Commission launched on 12 March 2013, a new joint initiative on integrated coastal management and maritime spatial planning. The proposal, ▸

07. EC (2007)

which takes the form of a draft Directive, aims to establish a framework for maritime spatial planning and integrated coastal management in EU Member States with a view to promote the sustainable growth of maritime and coastal activities and the sustainable use of coastal and marine resources. This builds on the 2002 ICZM Recommendation. The 2002 Recommendation promotes a holistic approach to the management of the coast which includes recognising the natural capital of the coasts and the need to preserve and use this sustainably within the context of sustainable development.

Climate change mitigation and adaptation: The EU Climate and Energy package sets out three targets for 2020: **01.** A 20% reduction in greenhouse gas emissions, **02.** Raising the share of EU energy consumption produced from renewable resources to 20% and **03.** A 20% improvement in the EU's energy efficiency.

The EU Strategy on Adaptation to Climate Change foresees that green infrastructure and ecosystem-based approaches to adaptation will be encouraged. The Commission's 2013 Green Infrastructure Strategy acknowledges that ecosystem-based approaches to climate change and disaster risk management are 'among the most widely applicable, economically viable and effective tools to combat the impacts of climate change'.

Directive on ambient air quality: The 2008 Ambient Air Quality Directive set a range of air quality objectives with limit values and exposure related objectives (exposure concentration obligations and exposure reduction targets) for particulate matter, including both PM2.5 and PM10. Member States had until 2010 to transpose the Directive. The 2013 Commission Communication on Green Infrastructure recognises that GI features in cities deliver health-related benefits such as clean air.

3. BIODIVERSITY, ECOSYSTEM SERVICES AND GREEN INFRASTRUCTURE: A REGION'S LIFELINE

3.1 THE BENEFITS FROM NATURE TO THE REGIONAL ECONOMY AND SOCIETY

Nature, consisting of landscapes, ecosystems, habitats, species and genetic material, provides a range of benefits to society. These benefits have been termed 'ecosystem services' (MA 2005, see Box 3).

Some of these are well known, for example food, fibre and fuel, in addition to nature's role in contributing to human enjoyment (e.g. recreation and aesthetic values). Others are known but sometimes overlooked, for example the role of nature in the provision and purification of water for human consumption, or the role of nature in cultural identity and spiritual well-being.

Yet others are less well known and infrequently integrated into decision making, such as nature's role in regulating local and global climate, crop pollinating and pest control, nutrient recycling, mitigating natural hazards, and maintenance of soil and air quality.

Similarly the potential for advances in scientific knowledge remains only partly understood and largely untapped. This leads to missed opportunities to learn from the 'living library of life' and build on the innovations of nature to support research, development and innovation in our economies[08].

In integrating nature into decision making, it is vital to understand not only the interconnections that exist between the different components of nature (living and non-living), but those that exist between nature, society and the economy. Knowledge and understanding of these connections are essential to the development of policy that supports human health and economic growth.

BOX .03

KEY DEFINITIONS: BIODIVERSITY & ECOSYSTEM SERVICES

Biological diversity (biodiversity) means 'the variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems'[09]. The term covers every form of life on earth (plants, animals, fungi and micro-organisms), the diversity of communities that they form, and the habitats in which they live.

Ecosystem means 'a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit'[10]. The quantity (e.g. biomass, productivity), quality and diversity of species (e.g. richness, rarity) all play an important role. The functioning of an ecosystem also often hinges on certain species or groups of species that perform key functions.

Ecosystem services refer to the flow of benefits that people obtain from ecosystems. These include:

- Provisioning services (e.g. food, raw materials such as fibre and fuel, fresh water, genetic and medicinal resources, and ornamental resources);

08. ten Brink *et al.* (2012) and http://biomimicry.net/

09. UN (1993) Article 2.

10. UN (1993) Article 2.

- Regulating services (benefits arising from ecosystem processes that regulate air quality, local and global climate, natural hazards such as flooding, waste and water quality, prevent erosion, maintain soil quality, as well as supporting wild pollination and offering biological control of pest);
- Cultural services (e.g. recreation, tourism, aesthetic, spiritual and ethical values as well as education and science); and
- Supporting services (e.g. soil formation, photosynthesis, nutrient cycling, gene pool protection and lifecycle maintenance) necessary for sustaining almost all other ecosystem services.

Further to the classification above, 'habitat services' can also be recognised as a separate category of ecosystem services to highlight the importance of ecosystems to provide habitats for migratory species (e.g. as nurseries) and as gene pool 'protectors' (maintain gene pool diversity and vitality).

In more economic terms, it can be said that nature forms a part of the overall capital that human welfare builds on and that ecosystem services flow from 'natural capital stocks' (also sometimes termed 'natural assets'), like interest or dividends from the financial stocks (see Box 04).

Planning and investment decisions, for example, local authorities implementing Cohesion Policy, determine the level of investment in various types of capital such as natural, social, human and man-made capital, which includes financial capital[11]. These decisions in turn affect the flow of ecosystem services. Understanding the synergies and trade-offs, between different forms of capital potentially created by these investments, is critical for the good governance of Cohesion Policy.

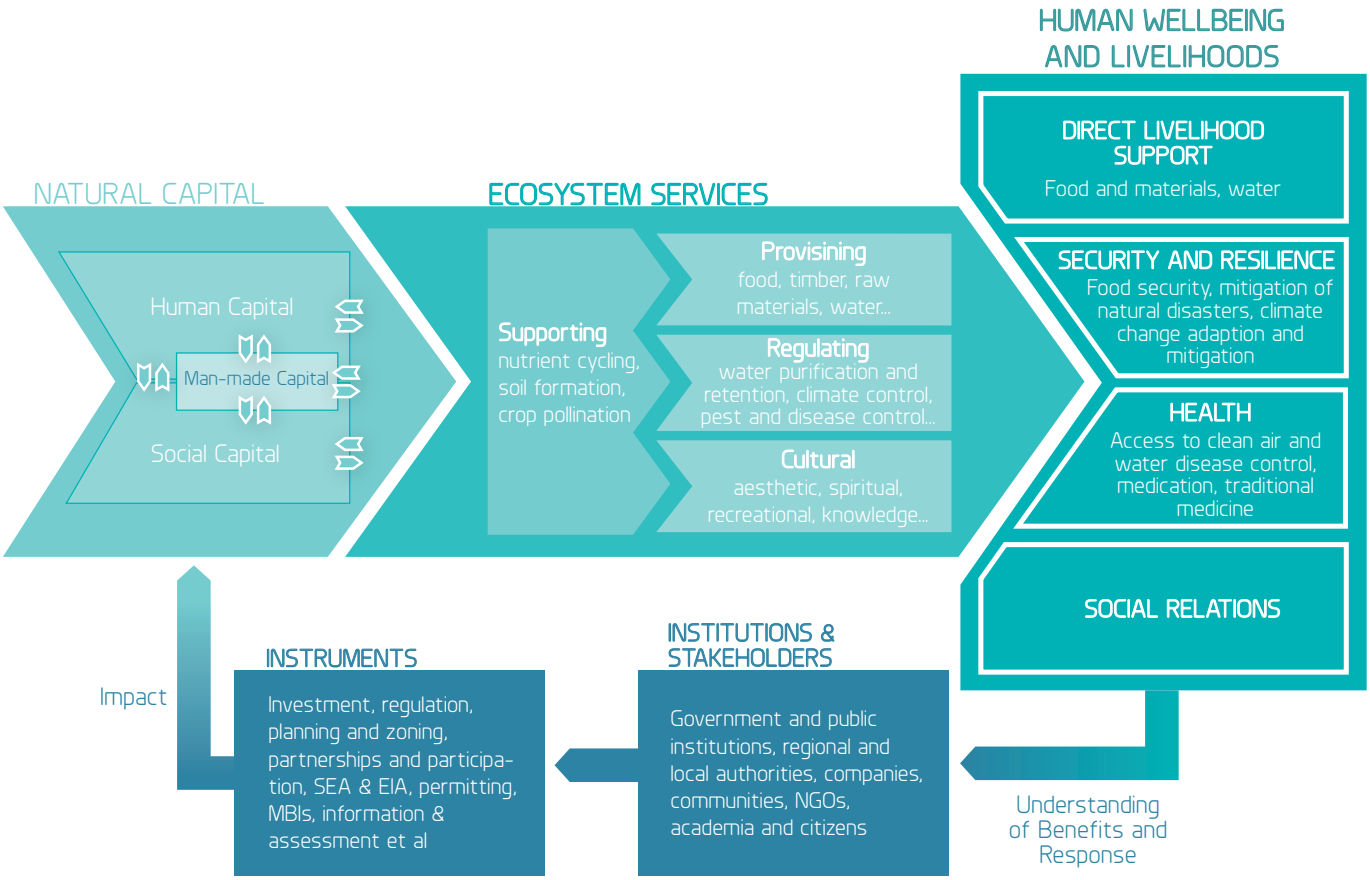
There are indeed a range of interactions between the four capitals. In some cases there can be:

- Synergies: **win-wins** between nature and economy or nature and society;
- **Trade-offs:** economic gain with environmental loss, and
- **Lose-lose** cases: where an environmental loss in turn leads to an economic loss.

Taking into account the links between the various forms of capital, the importance of ecosystem services' role in wellbeing, livelihoods and the economy, and the impacts of decisions is essential for effective decision making.

An appreciation of the benefits of nature can encourage institutions and wider stakeholders to respond and preserve ecosystem services via a range of policy tools such as investment, planning and zoning, strategic environmental assessments (SEAs) and environmental impact assessments (EIA). The decisions and use of tools will in turn affect nature, the economy, society and people. Figure 1 also illustrates the interconnections between policy, nature and wellbeing. Regional and national policies and other human and natural factors drive land and water use, climate and pollution. This in turn affects the stock and state of a region's natural capital. Changes in biodiversity affect the functioning of ecosystems and the flow of services to people and the economy.

11. The four capitals include: man-made capital (assets that are used to produce other goods and services, such as machines, tools, buildings and infrastructure – i.e. fixed assets), human capital (health, well-being and productive potential of individual people and includes mental and physical health, education, motivation, and work skills), social capital (social networks that support an efficient, cohesive society and facilitate social and intellectual interactions among its members) and natural capital (natural resources (like timber, water, and energy) and mineral reserves, but also species diversity, endangered species, ecosystems that perform ecological services like air and water filtration). For more on the four capitals, see ten Brink *et al.* (2012)



01.

Contribution of 'green' natural capital to human well-being and livelihoods

SOURCE
Own Representation building on MA (2005) and TEEB (2011a)

Some examples are the amount of carbon sequestered by trees; impacts of wetlands on climate regulation in a region; the quality of a landscape determines its tourism value; and the potential benefits of genetic diversity for pharmaceuticals.

Furthermore, diversity promotes ecosystem resilience, which is the ability of an ecosystem to provide services and maintain normal function[12] under changing environmental conditions, such as climate change. Ecosystem resilience provides a kind of 'natural insurance' against potential shocks and losses of ecosystem services[13]. Ecosystem resilience can support social and economic resilience in the face of climate change.

Well-targeted investments in biodiversity and ecosystem services will often not only achieve the conservation of nature, but will also deliver a range of benefits that resonate with a variety of Cohesion Policy objectives.

Ecosystems play a fundamental role in the **water cycle**, helping with water storage, retention and flow as well as release back into the wider water cycle. They can help address **water security** concerns by ensuring access and availability as well as quality where ecosystems provide natural filtration. This can also help in meeting water quality objectives and standards. Wetland ecosystems in particular help with water retention, purification and wider water cycling[14].

12. Holling (1973)

13. TEEB (2010b)

14. Russi *et al.* (2013)

Ecosystems are also an integral part of the global **carbon cycle**, and have a core role in meeting **climate change mitigation** objectives. Peatlands, coastal zones with sea-grasses and old forests are examples of ecosystems that play an important role in carbon storage. They offer free or very low cost **carbon storage and sequestration solutions**. Peatland restoration in *Mecklenburg-Vorpommern* in Germany (see case study in the annex) and in *Bellacorick* in Ireland (see Box 5) have demonstrated significant gains in carbon storage.

Climate change adaptation can also be supported by ecosystems. Specifically ecosystems have a role in reducing climate change risks such as urban heat islands in cities, and natural hazards (natural flood plain). An example of ecosystems being used for mitigation comes from the natural restoration of the Scheldt estuary in Belgium that took place in the context of the *SIGMA Plan II* (see case study in the annex). The restoration has successfully delivered flood protection, through a combination of higher dykes with flood plains and wetland restoration.

Well-functioning ecosystems and biodiversity are also at the heart of the nutrient cycle and help with **food security** concerns, through genetic diversity, and fish nurseries in marine protected areas. The restoration of *Lake Karla*, in Greece, (see case study in the annex) has resulted in the reappearance of fish species that had disappeared from the lake and even more species are expected back once restoration is complete.

Furthermore, **knowledge** obtained from nature (scientific and traditional) can help with economic **growth, innovation and competitiveness** (e.g. pharmaceuticals, biomimicry (learning from nature) as well as being of help in meeting **EU's research objectives** (e.g. scientific understanding, patents).

Healthy ecosystems and ecosystem services can help with human **health** (e.g. air quality improvements through filtration of particles, disease control via natural bio-predators, health benefits from access to nature), **energy security** (output for hydro plant, availability of cooling water), **local economic development** (product branding, tourism) and **investment** (e.g. mobilising investment **via locational** quality benefits, or funding for Natura 2000 sites). One illustration of investments that secure the ecological integrity of a region and the associated economic potential in sectors like tourism, cycling, hiking and hunting are the creation of the *Alpine-Carpathian corridor* (see case study in the annex).

Nature can help by increasing **job security** through the maintenance of fisheries, and soil quality for agriculture. It can also maintain a range of **cultural benefits** and create opportunities for **recreation and tourism** which can also support jobs. Furthermore it can underpin the formation of **cultural values**, including **identity and spiritual values**. The evidence base for these benefits is clear and growing, which can be seen through the growing amount of literature available[15]. The *West Wales and Valleys Operational Programme* (see case study in the annex) is a good example of combined recreational and economic development benefits stemming from an investment. Further social benefits derived from the programme include jobs skills training in the environmental and tourism sector specifically for disadvantaged groups in need of employment. Lastly to improve community health and cohesion high quality leisure facilities were built in close proximity to residential areas.

The above synergies between the conservation of nature and other policy goals generally do not appear by default. They result from being integrated into strategies, decision making, implementation, and in particular careful project and programme design that take into account the potential benefits and risks of trade-offs (see Part 03).

When considering the synergies, it is important to remember that achieving biodiversity conservation can go hand-in-hand with maintaining and/or restoring an ecosystem's ability to provide different ecosystem services. However, in some cases conflicts between the two might arise. For example, an important wetland for birds could, in principle, be used for mitigating the impacts of floods (i.e. by providing a flood storage area). However, water levels might need to be kept lower than desirable for wetland habitats to maximise the area's flood mitigation potential. Thus this may lead to a conflict between the specific conservation goals of an area (e.g. as according to the Habitats

15. MA (2005), TEEB (2011a), TEEB (2012a; 2012b), de Groot *et al.* (2012), Barbier (2012), and Russi *et al.* (2013)

Directive, Box 2) and its potential to provide benefits for flood mitigation. Therefore, at the project level there is always a need to ensure that trade-offs are avoided or minimised.

The described potential policy synergies above underline that there is scope for broadening the common agenda between nature conservation and Cohesion Policy objectives. The following are some of the proposed thematic objectives of future Cohesion Policy which can be promoted by working with nature:

- Strengthening research, technological development and innovation
- Supporting the shift towards low-carbon economy
- Promoting climate change adaptation, risk prevention and management
- Protecting the environment, and promoting resource efficiency
- Promoting employment and labour mobility
- Investing in education, skills and lifelong learning

Examples of how nature contributes to many of these objectives are presented in the case studies found in the annex and the wider literature cited throughout the Guide[16].

The process of acknowledging nature as a driving force in regional development and highlighting the contribution that Cohesion Policy can make to the protection of nature has already started. Biodiversity and ecosystem services are increasingly highlighted as an integral part of supporting sustainable regional development within the EU. DG Regional Policy has published a Communication providing practical guidelines on why and how Member States and regions can use EU funds so that they can contribute to the sustainable growth objective of the Europe 2020 Strategy. It suggests that this can be achieved through scaling up of financial resources targeting natural capital and green investments, integrating environmental concerns throughout the entire programme/project cycle and strengthening governance through more participatory approaches, networks and exchange of good practice.[17]

One particular area of focus is that of investing in green infrastructure (GI) as a tool to deliver biodiversity conservation and enhance ecosystem services (see Box 4). Importantly, the benefits of green infrastructure go beyond the area of biodiversity as it creates benefits for regional economies, employment, tourism and recreation, water management, sustainability of energy and transport systems, etc.[18] The emphasis on the multiple benefits of GI, makes it useful for discussions on targeting regional development investments in Cohesion Policy.

BOX .04

KEY DEFINITIONS: GREEN INFRASTRUCTURE

Green infrastructure has been described as 'the network of natural and semi-natural areas, features and green spaces in rural and urban, terrestrial, freshwater, coastal and marine areas, which together enhance ecosystem health and resilience, contribute to biodiversity conservation and benefit human populations through the maintenance and enhancement of ecosystem services[19].

According to the Commission's Communication, green infrastructure is 'a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services. It incorporates green spaces (or blue if aquatic ecosystems are concerned) and other physical features in terrestrial (including coastal) and marine areas. On land, green infrastructure is present in rural and urban settings.' [20]

16. Hjerp *et al.* (2011), Mazza *et al.* (2011)
17. EC (2011g)
18. EC (2013c)
19. EC (2013c)
20. Naumann *et al.* (2011)

With the growing trend towards urbanisation and the increasing role of cities in the future of Cohesion Policy, green infrastructure in urban areas and peri-urban areas is likely to become more prevalent. It has the potential to provide direct benefits to people who may have the greatest need for the benefits stemming from GI. These include ecosystem services associated with parks, canals, river banks, gardens, and green roofs for urban areas, and adjoining forests, grasslands, rivers in peri-urban areas, as well as the wider river basin in which a city lies. Potentially there are multiple economic and societal benefits to be gained from the provision of these services from natural areas.[21]

3.2 WORKING WITH NATURE CAN SAVE MONEY

Investments in nature today can save money and promote economic growth in the medium and long term. It is therefore an integral part of the transition to and the foundation of a resource efficient, green economy that leads to jobs and growth. It is worth taking a careful look at the role of green infrastructure and the benefits it provides; as these can offer economic savings (e.g. reduced water purification costs) and opportunities for Cohesion Policy investments with real social and economic returns (e.g. green infrastructure restoration). Financial constraints should not slow down the transition to a resource efficient, green economy. On the contrary, implementing agreed upon commitments can help achieve significant cost savings over time, exploit untapped opportunities to create jobs and growth. Finally, it can help society make the transition towards a green economy and a sustainable and desirable future.

Box 5 provides some examples of the socio-economic benefits that investment in green infrastructure can provide. Note that all examples are relevant to Cohesion Policy expenditure. However only a subset have been co-financed by Cohesion Policy. See section 4 for a range of examples of Cohesion Policy projects.

21. Hjerp *et al.* (2011)

BOX .05

EXAMPLES OF SOCIO-ECONOMIC BENEFITS FROM NATURE: NATURA 2000 AND WIDER GREEN INFRASTRUCTURE

Protected areas that provide conservation benefits also provide many services of value to society and the EU. The prime focus of the Natura 2000 protected area network is on the conservation of biodiversity, EU's unique and endangered ecosystems, species, gene pool and habitats. The network comprises 26,000 sites and covers almost 18 per cent of the EU territory. It also includes a growing marine protected area (MPA) network. The network is a core element of the wider EU green infrastructure, which together form a significant part of our living natural capital. In parallel to the focus on conservation, there has been an increasing interest in the socio-economic benefits of biodiversity over the last decade[22]. Arguments on the wider benefits of nature are being used to help attract funding for protected areas. A first illustrative estimate of the benefits from the ecosystem services flowing from the (terrestrial) Natura 2000 network as a whole arrived at an illustrative value of between € 200-300 billion per year[23] across a range of ecosystem services. With regards to carbon, it is estimated that the Natura 2000 network currently stores around 9.6 billion tonnes of carbon, equivalent to 35 billion tonnes of CO_2, which is estimated to be worth between €607 billion and € 1,130 billion (stock value in 2010), depending on the price attached to a tonne of carbon[24]. The costs of managing the Natura 2000 network and investing in it to ensure that it meets favourable conservation status has been estimated at around € 5.8 billion per year[25]. Further examples of value are given below.

EXAMPLES OF SPECIFIC ECOSYSTEM SERVICE BENEFITS AT LOCAL TO NATIONAL SCALES

Climate change mitigation The industrial cutaway **peatland at Bellacorick, Ireland,** was restored in 2009 by blocking drains, creating peat ridges to contain the water and to landscape to the peat-land surface. The project led to a higher water table level and the extensive re-colonisation of the former bare peat substrate by vascular and moss vegetation. The restoration project re-established the carbon sink function of natural peatlands. It was estimated that the benefits in terms of carbon restoration were worth on average €1,506 per ha for the avoided carbon loss (75 tCO_2eq. per ha; adopting a carbon price of € 20t CO_2eq.) and €118 per hectare per year for the average net carbon sequestration (5.9 tCO_2eq. per ha per year). (Wilson *et al.*, 2012)

Climate change adaptation/Flood protection Along the lower **Danube River, restoration of flood-plains** by decommissioning under-performing flood protection infrastructure has improved natural capacity to retain and release floodwaters and remove pollutants, enhanced biodiversity, and strengthened local economies through the diversification of livelihoods based on natural resources. Implementation of this project is estimated to cost €183 million, which can be compared to possible annual revenues of €85.6 million and to flood cost savings of €396 million (Hulea *et al.*, 2009). In **France**, assessments of flood control benefits in several French river basins indicate benefits ranging from €37/ha/year to €617/ha/year (Schéhérazade *et al.*, 2010). Better flood protection can lead to additional benefits, by supporting the livelihoods of local communities (as illustrated in the Study Case Donau Green corridor).

22. For further reading on the values of nature see MA (2005), TEEB (2010, 2011) and on protected areas specifically Kettunen *et al.* (2009) & (2011), Stolton *et al.* (2010), Gantioler *et al.* (2010), and Kettunen and ten Brink (2013).

23. ten Brink *et al.* (2012)

24. Ding, Markandya, Nunes in ten Brink *et al.* (2012)

25. Gantioler *et al.* (2010)

Natural Water Retention: The restoration of the **Skjern River in Denmark** created outflows from the river to the fjord in order to form a delta of around 220 hectares, created a 160 hectare lake, and permitted periodic floods on land within the project area, requiring the conversion of 1550 hectares of arable land to extensive grazing. These changes led to cost savings such as reduced pumping costs and floods, as well as to wider benefits from improved outdoor recreation, improved hunting, improved fishing, and biodiversity protection). Sustainable urban drainage systems (SUDS) support green infrastructure in urban areas by managing water levels and flows through trees and vegetation, green roofs, infiltration trenches and filter drains, swales and basins, ponds and wetlands. A case study in **Manchester** indicates that increasing green areas by 10 per cent would reduce runoff by around 5 per cent (Gill *et al.,* 2007).

Tourism: In **Scotland, the Cairngorms National Park** receives around 1.4 million visitors a year, each spending on average £69 per day on accommodation, food, transport and entertainment (Cairngorms National Park Authority, 2005). In Finland the total annual revenue linked to visitor spending in national parks and key recreation areas (total of 45 areas) has been estimated as € 87 million per year, generating € 10 return for every € 1 of public investment (Huhtala *et al.,* 2010).

Economic impact and Employment: The implementation of Natura 2000 network was considered to have positive impacts on **GDP in Spain**, with an estimated increase in GDP between 0.1 - 0.26 per cent at national level. It was estimated that the network would generate an additional 12,792 jobs to the country (Fernandez *et al.,* 2008). A study of the economic value of protected areas in Wales concluded that they directly or indirectly support nearly 12 000 jobs.

Regional identity and brand: Green infrastructure initiatives often involve planned and co-ordinated investment in natural assets which can contribute to regional identity and brand, thus enhancing economic opportunities. The **English National Forest** initiative has created or safeguarded 333 forestry related jobs, created 5 forest related businesses and trained 78 people in forest related business activities (Naumann *et al.,* 2011).

Health and labour productivity: The Mersey Forest project in North West England is estimated to have brought net benefits of £20,000 per annum resulting from reduced absenteeism from work. Cost savings of £13,000 per annum, also resulted from improved health through physical recreation. Additionally, the benefits of improved health through absorption of air pollution by the trees in the restored forest are estimated at £116,000 annually (Regeneris, 2009).

SOURCES: from ten Brink *et al* 2012a, ten Brink *et al* 2012b, Mazza *et al* 2011, and references therein.

3.3 THE MULTIPLE VALUES OF NATURE IN THE REGIONAL CONTEXT

While evidence for the value of nature has increased significantly, there are still gaps in knowledge regarding ecosystems and ecosystem services. Consequently cities and regions with unique ecosystems and biodiversity may face a knowledge gap when attempting develop their green infrastructure policies. In such cases, cities and regions may benefit from an up-front investment into the identification of their main distinct natural assets, exploring the interrelationships (both positive synergies and pressures) with regional economic development and social context, their roles and values (see Part 03 approaches and tools).

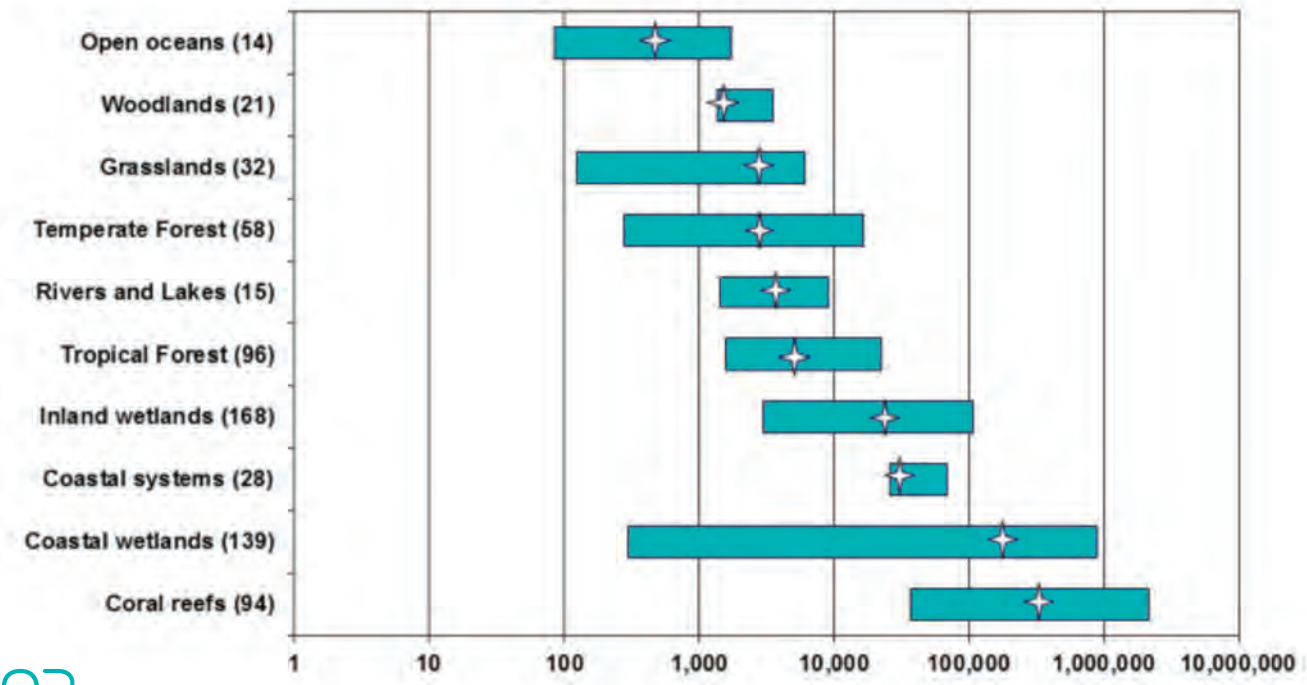
Looking beyond nature's intrinsic values can help regions recognise that nature is an asset that determines, in various ways, a region's long-term development prospects. A number of regions have already taken steps in this direction and taken the initiative to ensure the ecological integrity of some of their region's most important natural assets (e.g. see Study Cases: *Azores Islands in Portugal;*

Rhône-Alpes Region; the Alpine-Carpathian Corridor; and *DANUBEPARKS*). The appreciation of the contribution of a region's natural capital to local and regional ecological development can help ensure that regions avoid having to deal with the consequences and costs of environmental degradation. Furthermore it can preserve the distinct characteristics that grant them their competitive advantages and help them attract investments thus preserving opportunities for growth in the long-term.

Historically the appreciation of the intrinsic value of nature (i.e. the rare and endangered species, ecosystems, genetic diversity), and non-monetary appreciation of the benefits that man-kind derives from nature, have not been enough to halt the degradation of natural capital. This has resulted in the on-going degradation of the environment and erosion of natural capital, moreover a decrease in well-being for a region. Consequently it is necessary to demonstrate and communicate the values of natural capital such that it is considered thoughtfully at each level of decision making.

Figure 2 presents an overview of the values of nature across different habitat types. The value of nature is very site specific hence there is a wide range of values. The value ranges for specific ecosystem services also vary widely across sites. For extensive literature on the values, see the suggested references in the Guide's footnotes[26].

This gives an indication of the economic value of the different ecosystem services which offer considerable opportunities for regional development, the primary interest for managing authorities responsible for programming national and regional expenditure programmes and the respective investment priorities.



02.

Range of values of all ecosystem services provided by different types of habitat (Int.$/ha/yr2007/PPP-corrected)[27]

SOURCE
redrawn from data in de Groot et al. (2012) building on TEEB (2010).

NOTE
The figure above shows range and average of total monetary value of bundle of ecosystem services per biome. The total number of values per biome (i.e. how many values from the academic literature) is indicated in brackets; the 'average value' of the value range is indicated as a star sign. Note that breadth of the range is affected by the number of studies – the more studies the more site specific values will be found and the greater the likely range. Similarly it can be affected how 'outliers' (i.e. very low or very high values) are addressed. Note also that there is arguably no such thing as an 'average site' and therefore the average values should be seen simply as illustrative.

26. Kumar (2010), ten Brink (2011), de Groot *et al.* (2012), Barbier (2011), ten Brink *et al.* (2012), and Russi *et al.* (2013).

27. De Groot *et al.* (2012)

3.4 RESPONDING TO THE VALUES OF NATURE IN THE CONTEXT OF COHESION POLICY

There is an increased recognition globally and in Europe of the need to move towards a resource efficient, low carbon, inclusive green economy[28]. This recognition is also enshrined in the Europe 2020 Strategy and related Flagship Initiatives and 2050 Roadmaps (Europe 2020). A sound appreciation of the values and role of nature can provide a core foundation for a transition toward these sustainability objectives. Cohesion Policy provides tools, funding and leverage to help catalyse change. For example working with nature is complemented by other Cohesion Policy measures, such as support for energy efficiency, renewable energies and innovation in general[29].

This section presents some overarching principles and approaches for biodiversity-smart Cohesion Policy. It acts as a spring board for practical guidance on investment and governance which are provided in the Parts II and III of the Guide. A framework of approaches is presented below[30]. This framework of measures for Cohesion Policy is based on four main strands elaborated further below:

01. Investment in environmental infrastructure, and other measures to minimise impacts on nature and avoid inappropriate trade-offs;

02. Adopting active ecosystem management approaches, by investing in nature to meet cohesion policy objectives and at the same time objectives of nature conservation and support other policies;

03. Measures pursuing objectives of resource efficiency, decoupling and sustainable growth; and

04. Good governance as a cross cutting approach.

The traditional framework of approaches for addressing environmental challenges, specifically to reduce or avoid environmental damage are:

1.1) Invest in environmental infrastructure to comply with legislation and regulation: Environmental infrastructure investments have been central to Cohesion Policy and remain an important issue for a subset of countries. For example, water supply and waste water infrastructure expenditure is critical to meet water quality standards which in turn reduces pressure on biodiversity. These investments can be linked to SEAs, EIAs, AAs (appropriate assessments) and project selection (see section 6 on Information and support to project development and section 7 on Project eligibility, appraisal and selection). The associated use of Cohesion Policy leverage for pricing to encourage (full) cost-recovery (e.g. for water pricing) and wider subsidy reform can help cost-effectiveness.

1.2) Minimise losses and avoid inappropriate trade-offs: Tools include the use of strategies and partnerships as well as SEAs and carrying out SWOT[31] analysis for OPs (see section 5: Strategic planning and programming). These can support setting priorities and ensuring policy coherence in OPs. At a project level the requirements under Article 6.3 of the Habitats Directive include assessments of risks and impacts, identification of alternatives and mitigation measures, and eventually compensation. Using these in conjunction with EIAs, project selection and evaluation criteria can help in the selection of priority projects and minimise impacts.[32] This may also help contribute to meeting commitments to the No Net Loss (NNL) of biodiversity and ecosystem services at OP and regional levels. Other important tools include land use planning (zoning of important natural assets) and integrated coastal

28. UNEP (2011), UNCSD (2012)

29. See UNEP (2011), Fedrigo-Fazio *et al.*

30. Hjerp *et al.* (2011) and ten Brink *et al.* (2011) (2012), ten Brink *et al.* (2011)

31. Strengths, Weaknesses, Opportunities and Threats

32. Hjerp *et al.* (2011)

zone management. These have all been used in the 2007-2013 programme as part of Cohesion Policy governance and implementation.

These objectives and sets of measures have been the core approach within Cohesion Policy since its inception. Other approaches useful to Cohesion Policy, are those that adopt **a more active ecosystem management approaches**, such as:

2.1) Proactive approaches to risk management that build on a wider appreciation of risks. Tools include risk mapping for flood control, and mapping and modelling for areas likely to be affected by water stress and other impacts from climate change. Similarly mapping and monitoring of areas prone to risk from invasive alien species can help avoid potentially serious impacts on infrastructure, economic output and health[33]. Ex ante assessment, SEAs and SWOTs are other examples of useful processes (see sections 5 and 6). The focus on risk management became an important feature of the Cohesion Policy 2007-2013 and it is expected to increase in importance especially in regards to meeting objectives cost-effectively[34]. There is also potential for integrating in SWOTs via support for mapping, communications and response to risks.

2.2) Investment in natural capital via restoration, conservation, and improved management practices can offer particular synergies between Cohesion Policy and biodiversity policy. Direct investment priorities are region specific, and can include investments in restoration and management to help ensure clean water supply for cities and regions, mitigate flood risks, and support city cooling[35] (see sections 4 and 8). This can support commitments to NNL and help achieve net positive gains in biodiversity and ecosystem services.There is also a need for the investment and management of the Natura 2000 network itself, as well as buffer zones and connectivity features with wider green infrastructure. Measures and studies have been supported under Cohesion Policy, particularly under the Interreg programme, such as in the case study Natureship.

Increasingly policy interest is focusing on the need to pursue overall **environmental sustainability via resource efficiency and decoupling**:

3.1) Measures for eco-efficiency and wider resource efficiency through water or other resource pricing, and potentially payments for ecosystem service provision where land management leads to wider public goods. The use of Cohesion Policy to leverage **full cost pricing** (notably for water supply and for waste) and the use of **whole life costing** (WLC) for projects can help promote resource efficiency and savings, not just within the Cohesion Policy but more widely. Similarly, encouragement of **green public procurement** can be beneficial. Finally the use of these tools has increasingly been apart of Cohesion Policy. [36]

3.2) Decoupling the economy from resource use and its negative impacts through more radical innovation and changes in demand. This can include new clean products and processes[37]. Decoupling also builds on the five approaches discussed above. While there has arguably been less Cohesion Policy focus on absolute decoupling historically, parallels do exist in regards to investment in knowledge and learning, as well as investment in clusters and innovation centres which can provide platforms for nature based decoupling initiatives.

These six approaches, together with **good governance** are key to transitioning to a green economy. Components of good governance inter alia include: institutions and their roles; processes and participation; information provision, transparency, reporting and disclosure; and monitoring and enforcement. Guidance on these elements are provided in Part 03

33. Shine *et al.* (2010) as well as the following websites:
European Commission: http://ec.europa.eu/environment/nature/invasivealien/index_en.htm;
JRC: EASIN (European Alien Species Information Network) http://easin.jrc.ec.europa.eu/use-easin;
DAISIE: http://www.europe-aliens.org/index.jsp;
EEA: http://www.eea.europa.eu/publications/impacts-of-invasive-alien-species

34. Hjerp *et al.* (2012)

35. TEEB (2011a), TEEB (2012b)

36. Hjerp *et al.* (2011)

37. TEEB (2011a); ten Brink *et al.* (2012)

of this Guide. The mix and emphasis of measures will differ from one region or country to another depending on regional and national circumstances and windows of opportunity for progress. Cohesion Policy and its implementation relates to each of the above approaches and therefore will translate across regional and country contexts. Furthermore, Operational Programmes typically integrate a mix of instruments from the above approaches.

A range of Cohesion Policy tools and measures already contribute to the above steps in the transition to a green economy. Thus Cohesion Policy has the potential to be a catalyst in developing resource efficient green economies that acknowledge the multi-benefit opportunities that inherently exist as part of investments in nature. Further realisation of the inter-connections between Cohesion Policy, biodiversity objectives and wider EU ambitions under EU 2020 will help enable promote sustainable green growth and territorial cohesion.

These opportunities can be further capitalised upon within Cohesion Policy 2014-2020, as shown in the next sections and as already demonstrated by the range of case studies in this report and associated annex.

02 PART

FINANCING MULTI-BENEFIT INVESTMENTS IN BIODIVERSITY AND ECOSYSTEM SERVICES

Whereas Part 01 of the guide provided the evidence base for multi-benefits as part of Cohesion Policy investments, Part 02 and Part 03 will provide the practical steps on how to enable these. The focus of Part II is on the opportunities for enhancing investments in natural capital, biodiversity and green infrastructure which can deliver multiple benefits for economic, social and territorial cohesion. What can be done within Cohesion Policy planning, programming, implementation and monitoring to support and enable these benefits will be discussed in Part 03.

The EU Biodiversity Strategy 2020 (EU BDS-2020)[38] defines to a great extent the need for further investment

38. EC (2011a)

in preserving EU biodiversity and Natura 2000 through relevant funding instruments of the 2014-2020 financial framework. EU BDS-2020, setting six targets and identifying 20 actions, represents an ambitious commitment of EU Member States. EU BDS-2020 makes clear that action for biodiversity has a key role to play in speeding up the EU's transition towards a resource efficient and sustainable economy. The new strategy also fully acknowledges the economic value of ecosystem services and the need to restore them for the benefit of the economy.

The Impact Assessment of the EU BDS-2020[39] reports that there is a need for significant funding to meet its targets. In particular, it is stated that the costs for achieving favourable conservation status of species and habitats within the Natura 2000 network are estimated at €5.8 billion per year. This is the equivalent of €62/ha/year. On the other hand, the costs of establishing green infrastructure and restoration projects have not yet been estimated at EU level. However, the local and national level estimates suggest that the benefits for society of restoration and green infrastructure projects exceed costs.

In 2014-2020 national Prioritised Action Frameworks (PAFs) are foreseen to be developed under Article 8(4) of the Habitats Directive with a view to ensure that all EU BDS 2020 objectives, in particular the Natura 2000 network, are adequately financed. The aim of PAFs is to help to define the funding needs and priorities for Natura 2000 at a national or regional level. Also to facilitate their integration into the forthcoming Operational Programmes for the different EU funding instruments, including funds supporting the implementation of Cohesion Policy. For more information about PAFs as planning tools for identification and prioritization of the nature-related investment needs, see section 4.5.

Some of the major threats to biodiversity in the EU are climate change, land fragmentation, land use changes, overexploitation of natural resources, the spread of invasive alien species, and pollution. Despite action taken to combat biodiversity loss and ecosystem degradation, these continue pose serious challenges for the EU.

In the following sections the ways in which these challenges can be addressed through Cohesion Policy investments are presented. The focus of Part 02 is on the opportunities for enhancing investments in natural capital, biodiversity and green infrastructure which can deliver multiple benefits for economic, social and territorial cohesion. Part 03 will discuss what can be done within Cohesion Policy planning, programming, implementation and monitoring to support and enable these benefits.

4. COHESION POLICY INVESTMENT OPPORTUNITIES TO ACHIEVE MULTI-BENEFITS THROUGH BIODIVERSITY AND ECOSYSTEM SERVICES

The proposed Common Provisions Regulation sets out the common rules and provisions for all funds under shared management including the European Regional Development Fund (ERDF), Cohesion Fund (CF) and European Social Fund (ESF). The proposed Regulation also contains eleven thematic objectives that will govern spending in the 2014-2020 period. These objectives provide both direct and indirect opportunities for green investment that can deliver multiple economic, social and territorial benefits. The aim of this section is to identify these benefits.

39. EC (2011b)

4.1 DIRECT FUNDING OPPORTUNITIES

The protection of the environment, including support for nature protection and biodiversity, is one of the eleven thematic objectives of the Cohesion Policy for 2014-2020. This objective provides opportunities to fund projects that directly address environmental protection issues, provided that they are specified in the relevant Operational Programmes. Hence, direct funding opportunities are defined as those that are intended for the funding of nature, biodiversity, ecosystem services and green infrastructure and are part of the thematic objective of protecting the environment. Table 1 summarises these direct funding opportunities and gives examples of project types.

Table .01

INVESTMENT PRIORITIES FOR FUNDING NATURE (BIODIVERSITY AND ECOSYSTEM SERVICES) AND GREEN INFRASTRUCTURE AND EXAMPLES OF ACTIVITIES FOR DIRECT FUNDING OPPORTUNITIES

THEMATIC OBJECTIVE	OPPORTUNITIES
(6) Protecting the environment and promoting resource efficiency	**Relevant activities proposed in draft Regulations on the ERDF and CF** ➨ Protecting biodiversity, soil conservation and promoting ecosystem services including Natura 2000 and green infrastructure (ERDF) ➨ Protecting and restoring biodiversity, including through green infrastructures (Cohesion Fund).

Implementation and coordination mechanisms proposed in the Common Strategic Framework

➨ Investment in green infrastructure, which includes: investing in Natura 2000 sites and other territories to promote the protection and restoration of biodiversity and ecosystem services climate change mitigation and adaptation, protection against floods and fires, coastal protection, soil protection and other risk prevention measures, decrease the fragmentation of natural areas, increase water availability, and restore heavily modified sites and habitats.

➨ Support for sustainable integrated urban development, including through sustainable urban drainage, soil sealing measures, rehabilitation of contaminated sites, and rehabilitation of cultural infrastructure.

➨ Investment in the diversification of local economies by protecting and enhancing cultural heritage and landscapes (both in rural and urban contexts).

PROJECT TYPE EXAMPLES	PROJECT TITLE	MULTI-BENEFITS
Development of infrastructure to protect and promote ecosystem services and biodiversity (e.g. peatland, wetland restoration, measures for the conservation and improvement of fauna and flora, land purchase).	Benefits of green infrastructure - socio-economic importance of constructed urban wetlands (Nummela, Finland) Semi-natural grassland as a source of biodiversity improvement (EU-Salvere project, Central Europe Programme) Benefits of a natural wonderland - socio-economic importance of restoring wetland biodiversity (Thessalia, Greece).	Regulating the flow of runoff water and improving water quality within the watershed. Recreational and cultural benefits. Encouraging the use of locally sourced seeds for restoration of semi-natural grasslands, improving of harvesting and storage techniques. Supporting sustainable rural development. Economic value for fisheries, tourism, water supply for agriculture and water supply for urban use, flood prevention.

PROJECT TYPE EXAMPLES	PROJECT TITLE	MULTI-BENEFITS
Green infrastructure (e.g. regional development of eco-corridors, green roofs etc.).	Alpine/Carpathian corridor (Austria, Slovakia) Green Corridors Contracts (Rhone-Alpes, France)	Improvement of habitat-structure and migratory routes. Better informed spatial planning. Recreational and educational benefits. Creation of sustainable livelihoods and jobs, economic and leisure activities and environmental education. Improvement of quality of life and public health and road safety.
Environmental education, training, capacity building, (e.g. workshops, conferences, guidance documents, brochures, websites, information centres, exhibitions, education tools, visitors centres).	DANUBEPARKS : Cross-border cooperation to enhance the environmental status of Danube River basin, creating benefits to both biodiversity and people	Restoration of the natural dynamics and ecosystems of the river basin have contributed to biodiversity conservation and also improved the recreational and tourism value of the basin; avoided conflicts between inland waterways transport development and conservation; adaptation of man-made hydraulic structures; capacity building and skills development.
Awareness raising and public participation (e.g. dissemination of biodiversity-related knowledge and translation of knowledge into practice).	Green Corridors Contracts project in the Rhône-Alpes region (France)	Achieved benefits were in job creation, economic activities, leisure activities and environmental education as well as improving the quality of local habitats and road safety. Mapping of ecological networks.
Monitoring, reporting activities, scientific studies (e.g. mechanism for collecting information, monitoring of species and sites mapping, inventory, assessment of protected areas and ecosystems, creation of environmental information system, database, web based virtual observatory).	CARIBSAT: Caribbean Satellite Environmental Information System.	Developed a thematic geographic information system focused on coastal areas, wetlands and marine environment at the regional level. The project mobilised the relevant regional partners and contributed to the assessment, management and planning of the target territories. It provided a platform for cooperation between public and private organisations based on the wider benefits that nature can provide.

4.2 INDIRECT FUNDING OPPORTUNITIES

Opportunities for supporting the protection of nature, including biodiversity, ecosystem services and associated wider benefits through Cohesion Policy also exist outside the thematic objective dedicated to investment in the environment and resource efficiency. As discussed in Part 01 of this Guide, the conservation of nature and maintenance of ecosystem services have synergies with a wide range of policy areas (i.e. research, innovation, business development, employment, climate change mitigation and adaptation) are eligible for support from Cohesion Policy.

This section outlines the most relevant thematic objectives and investment priorities that can provide synergy-based opportunities for financing biodiversity and ecosystem services (e.g. through the establishment of green infrastructure) from the ERDF, ESF and the Cohesion Fund, and gives some project examples

for these.[40] The ERDF and Cohesion Fund opportunities are mainly concentrated around environmental infrastructure, innovative research, SME competitiveness, sustainable energy and adaptation to climate change.

The ESF, which targets employment, human resources and social issues, also provides opportunities for integrating nature into strategic directions and specific projects, as shown in the tables below. These include creation of employment opportunities through the tourism sector; in conservation, restoration and sustainable resource management; health gains through increased exposure to green space and nature; and educational opportunities.

A major new opportunity to be taken into account for the 2014-2020 programming period is the requirement for Member States to develop national and/or regional 'research and innovation strategies for smart specialisation' (RIS3 see more in the Commission factsheet[41]). These strategies could include aspects directly or indirectly linked to biodiversity, ecosystem services or the bio-economy and therefore represent an important support to fund the related innovation activities. Specific guidance[42] builds on a number of already existing cases is available to show the way ahead on how this reinforced framework on investments in innovation through cohesion policy could also benefit biodiversity and nature protection.

Specific synergies between the different types of investment financed by the ERDF and ESF should be exploited. The ESF can in fact provide funding for a number of different thematic objectives. For example, it can be done through education reforms and training systems, adaptation of skills and qualifications, up-skilling of the labour force, and the creation of new jobs in sectors related to the environment and energy. Conversely, the ERDF can contribute to promoting employment and supporting labour force mobility through the development of business incubators and investment support for self-employment and business creation. It can contribute to promoting social inclusion and combating poverty by investing in health and social infrastructure which contribute to national, regional and local development, reducing inequalities in terms of health status, and transition from institutional to community-based services. Thus ERDF can be a source for concrete investment while ESF can help to develop the skills and knowledge that will use and benefit from this investment.

The Regulation underlines the necessity to support integrated actions to tackle the economic, environmental, climate and social challenges affecting urban areas. The proposed ERDF proposal has increased its focus on sustainable urban development (SUD). It envisages the allocation of 5 per cent of national ERDF funding for integrated sustainable urban development measures and for the establishment of an urban development platform to promote capacity building and knowledge exchange between cities (these elements on the urban dimension are further developed in the subsequent section 4.3).

STRENGTHENING RESEARCH, TECHNOLOGICAL DEVELOPMENT AND INNOVATION

THEMATIC OBJECTIVE 01

Selected relevant activities proposed in draft Regulation

- Enhancing research and innovation infrastructure (R&I) and capacities to develop R&I excellence and promoting centres of competence, in particular those of European interest. (ERDF)

Possible synergies with the conservation of biodiversity and ecosystem services

Protected areas and other biodiversity hot-spots represent the potential for creating centres of excellence for research in biodiversity, terrestrial and marine ecosystems and/or pharmacology. Well-managed natural sites help to promote and increase the scientific understanding on ecosystems and they can form a source for a range of nature-based innovations for the bio-economy (the bio-economy includes: biotechnology, pharmaceuticals and sustainable nature-based solutions for natural resources management). Many sectors of the economy and activities are affected, including industrial biotechnology, horticulture, bio-control, cosmetics, pharmaceuticals, farm animal breeding, food and beverage, botanic gardens, culture collections, and academic research[43]. Furthermore, the less bio-diverse ecosystems that are maintained as part of a wider green

40. Kettunen *et al.* (2013)

41. EC (2012a)

42. EC (2012b)

43. ten Brink *et al.* (2012); IEEP *et al.* (2012a)

infrastructure, also have a significant innovation potential, providing possible nature-based solutions for energy efficiency (e.g. green roofs and walls), water management and improvement of health.

Remote sensing station for satellite-assisted environmental monitoring in the Indian Ocean (SEAS-OI) (ERDF)
SEAS-OI aims to put in place a centre of excellence in remote sensing using a station to receive and process high-resolution satellite images covering the entire south-west area of the Indian Ocean. Two types of images are needed to be processed: radar images (RADARSAT-2 and ENVISAT) and optical images (SPOT-4 and SPOT-5). Radar images are particularly well suited to the monitoring of maritime areas. Optical images offer resolutions that can be accurate to 2.5 m and which make many applications in terms of land imaging and mapping possible.

Multi-benefits:
The results will be useful in relation to regional problems concerning land planning, the management of natural land environments, maritime monitoring, epidemiological monitoring, the preservation of biodiversity, monitoring of climate indicators and the management of natural hazards.

SEAS-SI project website: http://teledetection.univ-reunion.fr/tcc/ http://www.espace.ird.fr

ENHANCING ACCESS TO AND USE AND QUALITY OF INFORMATION AND COMMUNICATIONS TECHNOLOGIES (ICT)

Selected relevant activities proposed in draft Regulation

- Strengthening ICT application for e-government, e-learning, e-inclusion and e-health. (ERDF)
- Investment in institutional capacity and in the efficiency of public administration and public services with the objective of introducing reforms to improve regulation and good governance. (ESF)

Possible synergies with the conservation of biodiversity and ecosystems
Developing the ICT for eGovernment applications in environmental monitoring and the management of ecosystems and biodiversity (e.g. protected areas). ICT can help develop a quantitative understanding of the state and changes in ecosystems, and associated service flows. Further it can provide information on the links between ecosystems, and the social and economic systems, hence improving policy and instrument design (e.g. spatial planning, use of Payments for Ecosystem Services (PES) schemes). Similarly improved mapping and risk assessment tools can help with policy design, hazard mitigation and response strategies. For example ICT tools can help minimise risks and potential negative impacts stemming from natural hazards, such as sea level rise and storm surges, water stress, or invasive alien species, all which impact not just biodiversity, but health, production and infrastructure. ICT can also help improve the evidence base needed for the development of environmental economic accounts, useful at local, regional, river basin and national levels.

Simulation tool to explore the environmental impact of development scenarios in French Guiana (GUYASIM) (ERDF)
GUYASIM is a simulation software programme that will help policy makers base their planning and development decisions on an objective, quantified system. Depending on the different development scenarios considered, it will provide a means of quantifying changes in the environmental services provided by the forest ecosystem, such as: carbon storage, the erosion or preservation of biodiversity and soil functioning.

Multi-benefits:
Research findings and knowledge in the areas of spatial plotting of Guianese forest ecosystem services, socioeconomic development options and the impact of climate change on the Guianese forest ecosystem will all be built into the programme. In the context of reducing emissions form deforestation and forest degradation REDD+ system set up to compensate countries whose forests contribute to mitigating climate change, GUYASIM will provide a way of quantifying the services provided by the Guianese ecosystem and hence serve as a basis for assessing the financial compensation owed to French Guiana.

SOURCE: Guyasim project website: http://www.ecofog.gf/spip.php?article429

ENHANCING COMPETITIVENESS OF SMALL- AND MEDIUM-SIZED ENTERPRISES (SMES)

THEMATIC OBJECTIVE 03

Selected relevant activities proposed in draft Regulation

- Promoting entrepreneurship, in particular by facilitating the economic exploitation of new ideas and fostering the creation of new firms. (ERDF)

Possible synergies with the conservation of biodiversity and ecosystem services

The number of green jobs necessary for planning, implementing, and monitoring green infrastructure is expected to increase, and in particular SMEs will play a fundamental role for regional and local solutions. Moreover, protected areas (both terrestrial and marine protected areas) offer multiple opportunities and unique 'selling points' for SMEs within the tourism sector. Opportunities exist to develop SMEs that exploit biodiversity and/or conservation-related opportunities beneficial for businesses and site managers (e.g. biochemical, pharmaceutical and cosmetics industries, and biomass extraction). Other opportunities include enhancing the resource efficiency of SMEs, such as cost-effective solutions for water management (e.g. wetland restoration or establishment of water related PES schemes).

Riahovo - freshwater fisheries in the Kalimok- Brushlen protected area (non EU funded)

Riahovo is a micro-enterprise providing ecotourism services and water body management (for fish breeding) located in the Kalimok-Brushlen protected area in Bulgaria. It is managed through a partnership of three directors with locally recruited labour. Riahovo aims to re-establish two previously drained and dry fish ponds for commercial fish production, the smaller of the two being built for recreational fishing. The ponds will generate direct benefits to biodiversity by providing a habitat for birds and other aquatic wildlife, including the maintenance of native fish populations, and plants. It will also provide indirect benefits for biodiversity by helping to move the local economy away from unsustainable agriculture.

Multi-benefits:

The main market for the fish is Bulgarian wholesalers. The market for angling is mainly local, or customers from Sofia. The potential increase in tourism to the region provides opportunities for developing ecotourism activities and offering information services to the visitors of the protected area. Even though the local market is the main market to which the products are sold, sufficient demand is expected for fish and angling through tourism activities which are an economically viable enterprise.

SOURCE: RSPB (2009) Handbook for Developing and Implementing Pro-Biodiversity Projects- an output from the EC Biodiversity Technical Assistance Unit project, Sandy, UK

FURTHER REFERENCE: BTAU Project website: http://www.smeforbiodiversity.eu/index.php

SHIFT TOWARDS A LOW-CARBON ECONOMY IN ALL SECTORS

THEMATIC OBJECTIVE 04

Selected relevant activities proposed in draft Regulation

- Promoting low-carbon strategies for urban areas. (ERDF & Cohesion Fund)
- Through employment, education or enhancing institutional capacity to support the shift towards a low-carbon, climate-resilient, resource-efficient and environmentally sustainable economy, through the reform of education and training systems, adaptation of skills and qualifications, up-skilling of the labour force, and the creation of new jobs in sectors related to the environment and energy. (ESF)

Possible synergies with the conservation of biodiversity and ecosystem services

Greening cities reduces energy use, and provides significant health and social benefits. Activities can include:

- Conservation and restoration of peatlands and other wetlands, woods and forests, coastal zones that include sea grasses can prevent CO_2 emissions from degraded habitats and/or improve carbon sequestration, while offering multiple additional benefits;
- Urban green areas can play an important role in reducing an area's overall energy footprint and would include initiatives such as urban parks, tree-lined streets and other green spaces, green roofs and urban agriculture, composting, low energy water purification, and the use of rain and grey water.

Redesigning and changing public lighting and other light sources to benefit the environment (non EU funded)
The programme proposed by the CEE Bankwatch for Hungary would support activities for the manufacturing, purchase and installation of biodiversity-friendly light fittings which decrease light pollution. The objectives of the programme are to decrease energy consumption and light pollution, decrease the attraction of insects to light sources, hinder the evolution of secondary food chains and decrease road deaths of insect-eating animals.

Multi-benefits:
Through the installation of light-directing plates it is possible to lessen the attraction of insects to LED light bulbs, reduce light pollution and still achieve the decrease in energy consumption provided by LED lights.

SOURCE. CEE Bankwatch (2013), Recommendations for the programming of EU funds in 10 CEE countries

Peatland restoration in Mecklenburg-Vorpommern, Germany (non EU funded)
Restoring peatlands can lead to low-cost carbon capture and storage. Between 2000 and 2008, an area of 29,764 ha of peatlands was restored in Mecklenburg-Vorpommern, by raising the water level to prevent the further oxidation of peat. The project provided a reduction of 14 tonnes of CO2-eq. emissions per restored hectare.

Multi-benefits:
Peatland restoration improved biodiversity and led to a reduction in emissions. Additional income can be obtained using the restored peatlands for alternative land uses that do not reduce the carbon stock. Other benefits include the improvement of water quality and cultural ecosystem services.

SOURCE: Case study in the annex

PROMOTING CLIMATE CHANGE ADAPTATION, RISK PREVENTION AND MANAGEMENT

Selected relevant activities proposed in draft Regulation

- Supporting dedicated investment for adaptation to climate change. (ERDF)
- Promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems. (ERDF)

Possible synergies with the conservation of biodiversity and ecosystem services
Funding can be allocated to support ecosystem-based adaptation measures and green infrastructure which build on the maintenance and/or restoration of ecosystem services in several ways:

- Restoring ecosystems' natural capacity and investing in green infrastructure can help buffer the impact of climate change (e.g. extreme weather phenomena) and can be used as a means to mitigate flooding, droughts and wild fires. Measures include restoration of wetlands, development of water retention areas, building of semi-natural dunes, connectivity of natural and man-made infrastructure for flood mitigation (i.e. flood plains, natural barriers and man-made levees), and afforestation. Support for these hydrological measures is generally needed as well as risk mapping to identify areas at risk and assess cost-effectiveness of measures. A risk assessment to identify key beneficiaries from action and those providing the service (e.g. farmers' fields for flood control) will be important to help assess potential needs for engagement of stakeholders and potentially payments for ecosystem services.
- As noted above, improved information base and monitoring, supported by ICT, can help improve risk management systems.

WATER: Wetted land- the assessment, techniques and economics of restoration, France / England (ERDF)
The WATER project will develop a market based catchment restoration scheme which will be based on a PES model with the aim to identify both delivery and funding mechanisms to leverage private investment for catchment restoration. It is funded under the INTERREG IV A France (Channel) England Programme, Priority Axis 4 'ensure sustainable development of the common space', specific objective 11 'mitigate and manage risks of environmental damage'.

Multi-benefits:
This Anglo-Franco English Channel catchment scale project aims to assess, restore, economically evaluate and disseminate findings for the restoration of former wetlands as a way of 'climate proofing' rivers, reducing bacterial and nutrient loading, and enhancing biodiversity as well as establishing our shared common identity.

SOURCE: SURF database http://surfnature.ctfc.cat/index.php

ALFA - Adaptive Land use for Flood Alleviation (ERDF)
The ALFA project is funded under the INTERREG IVB North West Europe Programme. It aims to protect citizens in the region against the effects of flooding due to climate change. This will be done by creating new capacity for water storage or discharge of peak floods within river catchments in Belgium, France, Germany, United Kingdom and The Netherlands.

Multi-benefits:
The project also aims to raise awareness and increase solidarity between citizens in upstream and downstream areas within river catchments in Europe. This is achieved, through public involvement measures to optimise social, economic and ecological benefits, preserving the current land use function in the project areas and combining this with desirable and suitable new functions, such as nature and recreation.

SOURCE: SURF database http://surfnature.ctfc.cat/index.php

PROTECTING THE ENVIRONMENT AND PROMOTING RESOURCES EFFICIENCY

THEMATIC OBJECTIVE 06

Selected relevant activities proposed in draft Regulation

- Addressing the significant needs for investment in the waste and water sector to meet the requirements of the environmental acquis. (ERDF and Cohesion Fund)
- Protecting, promoting and developing cultural heritage. (ERDF and Cohesion Fund)
- Action to improve the urban environment, including regeneration of brownfield sites and reduction of air pollution. (ERDF and Cohesion Fund)

Possible synergies with the conservation of biodiversity and ecosystem services
Synergies exist from investments in enhanced water supply and water and waste management, to waste water treatment and air quality. Special support is also foreseen for transnational cooperation projects with the aim of protecting and managing river basins, coastal zones, marine resources, water services and wetlands. Investment in solutions which work with nature and strengthen the resilience and vitality of natural ecosystems will result in significant improvements in resource efficiency.
There are synergies both from working with man-made infrastructure and from working with nature. Investment in man-made waste water treatment and waste management infrastructures will help reduce pressure on nature which will consequently lead to reduced degradation and loss of ecosystem services (e.g. clear water supply, fish provision, erosion control, natural hazards management). Restoration, new investment and management of green infrastructure can lead to savings in terms of water use and cost, energy use and cost, and improved natural resource yields (e.g. fisheries), which can make the use of man-made and financial capitals more efficient.

Wales-Wild Fishing (ERDF)
Wild Fishing Wales (WFW) is a component of the Communities and Nature project (CAN), which seeks to maximise the economic value of Wales' natural assets. It is funded under the Operational Programme for Convergence, Priority 'Creating an Attractive Business Environment', theme 'Environment for Growth'. The project may facilitate the development of a fisheries booking system or passport scheme that will continue to promote partner fisheries. It is anticipated that angling guiding will become a more common aspect of angling tourism in Wales.

Multi-benefits:
Economic opportunities for local communities are provided through developing people's skills to help manage and provide guided access to these sites. The ecological function of these sites is enhanced so that they provide high quality fishing, and an improved environment for wildlife. It is expected that a proportion of the additional income to WFW fisheries will be used to maintain and extend the environmental and access improvements delivered through the project.

SOURCE: SURF database http://surfnature.ctfc.cat/index.php

Renovation of the 'Maison de la Baie', St Brieuc, France (ERDF)
The transformation and renovation of the 'Maison de la Baie' environment centre ensures compliance with high environmental quality building regulations. Its ultimate output will be the modernisation of educational material such as, permanent and temporary exhibitions, website, green classrooms, site visits, guided tours, adequate literature and museography. It is funded under the Operational Programme for Competitiveness Brittany Region, action 'study and carry out ecological work'.

Multi-benefits:
Urban pressure on the environment is growing and it is important to raise the awareness of the inhabitants about the value of the environment they live in and the importance of protecting it. St Brieuc is also located in between two important tourism areas. Thus the local authority would like to attract tourists to its territory, promoting the natural and cultural environment of the bay and raising the awareness of tourists to their impact on the environment.

SOURCE: SURF database http://surfnature.ctfc.cat/index.php

PROMOTING SUSTAINABLE TRANSPORT AND REMOVING BOTTLENECKS IN KEY NETWORK INFRASTRUCTURES

Selected relevant activities proposed in draft Regulation

- Developing environment-friendly and low-carbon transport systems and promoting sustainable urban mobility. (ERDF and Cohesion Fund)

Possible synergies with the conservation of biodiversity and ecosystem services
The development of environmentally friendly and low-carbon transport systems helps to achieve the protection objectives for air, water, ecosystems and biodiversity. It is also important that the negative impact caused by other funding (e.g. transport infrastructure) is minimised through biodiversity proofing of projects and other instruments to support commitment to the No Net Loss of biodiversity (see section 5.2). Green infrastructure can address the problem of fragmentation through innovative solutions on planning and implementing new transport infrastructure by routing with minimal environmental impact, ecoducts, and improving ecosystem functions along the road track. In the Trans-European Transport Network (TEN-T) policy, for example, green Infrastructure as an integral part of projects may be promoted within the framework of the proposed corridor approach. Ex-post biodiversity proofing of existing transport infrastructure can help reduce fragmentation of landscapes and contribute to increasing biodiversity.

Cross-border green infrastructure – Alpine-Carpathian corridor/Alpen-Karpaten Korridor (Austria, Slovakia) (ERDF)
The project aimed to contribute to constructing and preserving a coherent 120 km corridor, from the Alps to the Carpathians in response to the increasing fragmentation of habitats. By means of safeguarding habitats the project aimed to enable migration and promote genetic exchange between wild animal populations. Implementation measures carried out within the framework of this cross-border project included the building of 'green bridges' over highways, the creation of suitable habitat patches or stepping stones within the corridor, routing along existing bikeways, development (by project partners), and signing (by political leaders) of a Memorandum of Understanding (MoU) for the protection of the Alpine-Carpathian corridor. Public awareness campaigns and environmental education for schools in relation to the Alpine-Carpathian corridor within the region were also part of the project.

Multi-benefits:

Green bridges promote the diversity of plants and animals species and give populations that have been forced back behind infrastructure the chance to mix with others of their own species again. Greater biodiversity also improves the water, air and soil quality, as a balanced biological system is highly beneficial for the cleanliness of the environment. Additionally, the project will help to reduce the impacts from future developments on the corridor due to the information outputs of the project. For example, detailed corridor models for bottlenecks can provide a basis for better informed spatial planning in the future and allow for more effective use of planning tools such as EIA. The project also presents benefits to the recreation and ecotourism sectors . Additional socio-economic benefits include environmental education and communication, and the provision of recreational areas (e.g. bike path) which will benefit the eco-tourism sector with an increased number of visitors.

SOURCE: Case study in the annex

Via Baltica (S8) Expressway in North-Eastern Poland – SEA as effective tool for biodiversity proofing transport plans (Cohesion Fund & ERDF)

The S8 expressway, Bialystok located along the Lithuanian border with north-eastern Poland is a major project which had been presented for financing under Operational Programme Infrastructure & Environment. It was included in the indicative major project list under Priority Axis 6 TEN-T Road and Air Transport Network, Measure 6.1 Development of the TEN-T Road Network. As a result of a long assessment process it was concluded that the routing of the expressway was not optimal, leading to the abandonment of the original project. It was replaced by a new alternative route for the entire Polish section of Via Baltica expressway. The project case demonstrates that SEA Directive can be an excellent tool to reconcile trade-offs between economic development and environmental sustainability. The SEA, in fact, facilitated a multi-variant analysis and assisted in solving the problem of possible collisions with Natura 2000 sites on a macro scale. Assessments of needs and economic analysis carried out on this level were also extremely valuable.

Multi-benefits:

Implementation of Cohesion Policy investments in Poland, particularly in the field of transport, led to institutional reforms, enabling smoother and higher quality SEA procedures, a positive 'spillover' effect. In 2008, the General Directorate for Environmental Protection was established, together with 16 Regional Directorates. The General Directorate is responsible for the SEA of national strategic documents and deals with trans boundary procedures for SEA. One of the primary tasks of these institutions is carrying out EIA procedures and management of Natura 2000 sites. The creation of these new, independent institutions ensured extra capacities to deal with EIAs for transport projects. In fact one of the aims of the institutional reform was to facilitate the implementation of several legal changes addressing the respective directives (EIA, SEA, Birds and Habitats). This has consequentially also facilitated the implementation of transport investments funded by the EU, which before had been delayed due to problems with environmental procedures.

SOURCE: IEEP (2011), Cohesion Policy and Sustainable Development. Supporting Paper 4: Case studies

PROMOTING EMPLOYMENT AND SUPPORTING LABOUR MOBILITY

THEMATIC OBJECTIVE 08

Selected relevant activities proposed in draft Regulation

- Self-employment, entrepreneurship and business creation. (ESF)
- Supporting the shift towards a low-carbon, climate-resilient, resource-efficient and environmentally sustainable economy, through reform of education and training systems, adaptation of skills and qualifications, up-skilling of the labour force, and the creation of new jobs in sectors related to the environment and energy. (ESF)
- Development of business incubators and investment support for self-employment and business creation. (ERDF)

Possible synergies with the conservation of biodiversity and ecosystem services

The activities required to restore, manage and protect biodiversity result in both direct and indirect employment opportunities. Green infrastructure and nature protection activities have the potential to create employment opportunities while preserving and improving the quality of nature particularly for skilled designers and engineers, landscape architects, and

scientists or maintenance crews. As well as providing a diverse range of direct employment opportunities, the preservation of nature also stimulates activity within a variety of other sectors, such as agriculture, construction and tourism. For example, investment in nature reserves are required to develop the tourism sector through the establishment and maintenance of public infrastructure (bike paths, parking, traffic calming) to redirect visitors or to carefully direct tourist activity (e.g. via information centres, observatories, scenic view points, signage, walking trails, natural and cultural routes and trails). Investment to improve/restore habitats when carried out as an integral part of initiatives promoting self-employment and business could be linked with the creation of sustainable bio-business.

Benefits of a natural wonderland - socio-economic importance of restoring wetland biodiversity (Thessalia, Greece) (ERDF)

To complete the reconstitution of Lake Karla and its eco-system, and to further develop socio-economic prospects in the area, a follow-up project was designed and funded by the 2007 – 2013 national-level Operational Programme addressing environment and development. The main objectives of this project are to address the environmental challenges of the energy-intensive use of boreholes, the overuse of underground waters and the destruction of the biodiversity of the area.

Multi-benefits:

Environmental successes observed so far include the return of a number of bird species to the area and the reappearance of fish in the lake. Most importantly, the project is expected to create a small number of jobs in the area, specifically to staff the management institute, the information centre and the museum. Furthermore, private sector initiatives in the sector of sustainable tourism in the area, such as camping sites, horse raising farms, rowing centres, etc. are also expected.

SOURCE: Case study in the annex

PROMOTING SOCIAL INCLUSION AND COMBATING POVERTY

Selected relevant activities proposed in draft Regulation

- Enhancing access to affordable, sustainable and high-quality services, including health care and social services of general interest. (ESF)
- Support for social enterprises. (ESF)
- Community-led local development strategies.(ESF)
- Investing in health and social infrastructure which contribute to national, regional and local development, reducing inequalities in terms of health status, and transition from institutional to community-based services. (ERDF)

Possible synergies with the conservation of biodiversity and ecosystem services

Building on nature's capacity to support sustainable development can be used to support broader physical and economic regeneration of deprived urban and rural communities:

- Restoring ecosystems and related ecosystem services can have significant welfare impacts, for example by improvements to environmental security and quality in the area;
- Restoration of nature and building on nature-based economic sectors can be the basis for a community-led local development strategy. For example in the framework of a complex nature-based sustainable tourism, agriculture and fisheries approach to local development;
- Contact with green spaces and nature can improve mental health and well-being (e.g. by reducing stress levels);
- Green cities, green spaces, and green roofs create an environment that is better for health by providing natural noise control, natural cooling, and reducing particulate pollution. These in turn contribute to a reduction in respiratory diseases and heat related mortality that disproportionately affect disadvantaged groups, namely children, seniors and low income individuals. Green infrastructure, a public good, compensates for these inequalities;
- Nature can support a range of measures and activities that enhance social inclusion, including providing opportunities for nature-based therapy and care.

PERIURBAN PARKS – improving environmental conditions in suburban areas (ERDF)

PERIURBAN is a regional initiative project co-financed under the Interreg IV C framework which uses interregional exchange of experiences to improve policies on management of natural suburban areas. PERIURBAN focuses specifically on policy and management solutions to mitigate pressures on biodiversity. Focus on the creation and management of parks in natural suburban areas, in line with European environment policy and redevelopment in suburban areas, can impact positively on the environment and on halting biodiversity loss.

Multi-benefits:

The added value of peri-urban parks results from their ability to address different issues, beginning with environmental protection and provision of ecosystem services, to creation of environmental green infrastructure, to local economic development and finally the improvement of the quality of life and social promotion. In particular, peri-urban parks can impact the quality of life of inhabitants and promote social inclusion. It offers a green, healthy space for residents of the area, a welcome change from the rush and smog that often characterise urban areas. Benefits to health from regular exercise and clean air can be highlighted, along with educational and cultural advantages depending on the services offered. Parks provide educational opportunities for schools and childcare, services for people with disabilities and disadvantaged groups and, opportunities for volunteerism and socialising.

SOURCE: Project website: http://www.periurbanparks.eu/

DANUBEPARKS under the European Territorial Cooperation for South-East Europe (ETC-SEE), priority axis 'Protection and Improvement of the Environment'.

Multi-benefits:

Dedicated efforts have been made during the project to increase the human capital within the Danube River basin. A range of training and capacity building activities have been carried out to further develop and diversify local skills, including training related to services within the tourism sector and skills in environmental monitoring (see above). Several information sources aimed at improving common knowledge based on sustainable river basin management (success factors and/or barriers) have been developed, including lessons learned from restoration practises within the basin. This strong emphasis on capacity building across the river basin will play an important role in ensuring the uptake of project results and insights in the long run, contributing to local livelihoods.

INVESTING IN EDUCATION, SKILLS AND LIFELONG LEARNING

THEMATIC OBJECTIVE 10

Selected relevant activities proposed in draft Regulation

- Reducing early school-leaving and promoting equal access to good quality early-childhood, primary and secondary education. (ESF)
- Improving the quality, efficiency and openness of tertiary and equivalent education with a view to increasing participation and attainment levels. (ESF)
- Enhancing access to lifelong learning, upgrading the skills and competences of the workforce and increasing the labour market relevance of education and training systems.(ESF)
- Supporting the shift towards a low-carbon, climate-resilient, resource-efficient and environmentally sustainable economy, through reform of education and training systems, adaptation of skills and qualifications, up-skilling of the labour force, and the creation of new jobs in sectors related to the environment and energy. (ESF)
- This thematic objective can also be funded through ERDF but there are no specific activities proposed in the draft Regulation.

Possible synergies with the conservation of biodiversity and ecosystem services

- Nature provides a vast number of opportunities for education and skills development:
- Environmental education activities are considered an important means to improving children's understandings of sustainable development.
- Increasing people's knowledge on biodiversity conservation, ecosystems services and the related business and investments opportunities contributes to lifelong learning, thereby supporting a shift towards more sustainable socio-economic practices.

- Training in green infrastructure principles and implementation is a key element of successful green infrastructure strategies.

Crafts as a way to equal education (ERDF)

The project is financed by the OP Education for Competitiveness of Czech Republic, under the Priority axis 7.1: Initial education. The main goal of the project is to help pupils with special education needs to be successful and develop their competencies. Secondary goals are to prevent them from leaving school early, motivate them to pursue higher education, and introduce them to special professional education and labour integration in the field of sustainable development, with focus on nature conservation and landscape protection. The project uses innovative education methods targeted to meet each student's individual education needs.

Multi-benefits:

The development of innovative teaching methods supports the objective of achieving equal opportunities in education irrespective of disability.

SOURCE: Project website: http://www.cmelak.cz/en/

ENHANCING INSTITUTIONAL CAPACITY AND AN EFFICIENT PUBLIC ADMINISTRATION

Selected relevant activities proposed in draft Regulation

- Investment in institutional capacity and in the efficiency of public administrations and public services with a view to reforms, better regulation and good governance.(ESF)
- Capacity building for stakeholders delivering employment, education and social policies and sectoral and territorial pacts to mobilise for reform at national, regional and local level. (ESF)
- Enhancing institutional capacity and an efficient public administration by strengthening of institutional capacity and the efficiency of public administrations and public services related to implementation of the ERDF, and in support of actions in institutional capacity and in the efficiency of public administration supported by the ESF. (ERDF)
- Enhancing institutional capacity and an efficient public administration by strengthening of institutional capacity and the efficiency of public administrations and public services related to implementation of the Cohesion Fund. (Cohesion Fund)

Possible synergies with the conservation of biodiversity and ecosystem services

Allocating funding for technical assistance and capacity building activities, for the improvement of national and regional environmental governance (e.g. biodiversity mainstreaming) can help to overcome institutional and administrative barriers.

Action 7.A - Horizontal actions for environmental integration (ERDF)

The programme is aimed at increasing the skills of government in the Italian Convergence Regions (Calabria, Campania, Puglia and Sicily) in terms of environmental integration in decision-making, management and control of public action. The Action 7.A provides information communication, training activities and exchange of best practices. The objectives of the Action include improving the skills of staff so that they are transferrable at the regional and local levels; promoting the traditional use of environmental resources, including energy; and ensuring the knowledge exchange of experience and technical-scientific contents for the integration of the environmental considerations in investment decisions.

Multi-benefits:

The activities will increase the regional governments' capacity to integrate environmental concerns into the programming activities such as biodiversity and conservation of nature. Additionally a network of excellence will be set up on the issues in question in order to promote models of land use planning management which are able to combine economic, social and environmental needs.

SOURCE: Italian Ministry of Environment http://www.pongasminambiente.it/index.php?option=com_content&view=category&layout=blog&id=18&Itemid=124

The new regulatory framework for Cohesion Policy 2014-2020 offers numerous funding opportunities under different thematic objectives to promote biodiversity and ecosystem services, and deliver a wide range of benefits simultaneously. The best way for Member States and regions to take advantage of these benefits is to develop their Cohesion Policy programmes and programme implementation systems in such a way that encourages better understanding and consideration of these issues at every stage of the process. This includes planning and programming; the development of the right projects; and a performance framework that encourages smart project implementation through proper indicators and monitoring practices. How this can be done is explained in more detail in Part 03.

4.3 CROSS-CUTTING INITIATIVES AND TERRITORIAL COOPERATION

The proposed 2014-2020 Common Provisions Regulation for European Structural and Investment **Funds**[44] (ESI funds) places important emphasis on **integrated approaches to programming and spending of the funds**, allowing an intervention to receive support from more than one type of fund. For the ESI funds, this means that a single project may have different components funded from different funds, an example being a community development initiative that combines support for environment and nature (e.g. eco-tourism) with employment initiatives (e.g. training and job search services) and rural development measures (e.g. diversification of the rural economy). The possibility to combine support from different funds into single, coordinated initiatives provides a wide range of potential synergies and benefits for sustainable development.

Two **cross-cutting initiatives** proposed for 2014-2020 seek to engage regional and local actors as well as local communities in the implementation of programmes. These can be important tools to complement and enhance the promotion of biodiversity, nature conservation and green infrastructure projects through all ESI Funds. When planning and programming the ESI funds, Member States are required to set out in their Partnership Agreements and Operational Programmes how they intend to make use of these mechanisms:

- Community Led Local Development (CLLD) initiatives represent an additional mechanism for the integration of sub-regional and local concerns into national planning. These provide bottom-up opportunities, which are based on local action strategies that are well-suited for incorporating biodiversity issues (see more in the Commission factsheet on CLLD).[45] As community-led local development is area-based and can be financed by the different ESI Funds, it is an ideal methodology for building linkages between urban and rural areas, including biodiversity and ecosystem approaches. However, Member States will need to specify in their Partnership Agreements how they intend to support CLLD and indicate which programmes and areas CLLD may be used. As the CLLD strategies created by local action groups may cover operations for one or more Funds, there needs to be consistency and coordination between the Funds. Member States and Managing Authorities will have to define the criteria for the selection of local development strategies and ensure that calls and procedures are coordinated between the Funds. Selection and approval of the strategies will be carried out by a joint committee set up for this purpose by the Managing Authorities concerned, which will ensure that multi-Fund strategies receive coordinated funding for the complete strategy. The deadline for selection and approval of local strategies is the end of 2015. The new proposals also allow for the existing local action groups to consider widening their local strategies to include the use of other CSF Funds. CLLD initiatives entail a multi-stakeholder approach throughout all project implementation phases that can help ensure that multi-benefits associated with biodiversity and ecosystem services are effectively identified and capitalised upon.

44. In addition to the three Cohesion Policy Funds (ERDF, ESF, Cohesion Fund), it includes also the European Agriculture Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF)

45. EC (2012a)

To learn more about stakeholder practices, see sections 5 and 6 of this Guide.

Integrated Territorial Investment (ITI) aims to ensure the coordination of priority interventions supported by all ESI funds. Funding from several priority axes and programmes can be bundled into an integrated investment strategy for a certain territory or functional area (i.e. urban, rural, coastal and fisheries areas, and areas with particular territorial features). This allows the managing authorities to delegate the implementation of parts of different priority axes to one body (a local authority) to ensure that investments are undertaken in a complementary manner (see more in the Commission factsheet on ITI).[46] As biodiversity and nature conservation investments are the basis for a wide range of socio-economic benefits, they can be a critical asset for territorial development if protected and managed effectively. ITI is also an opportunity to consider investment opportunities related to Natura 2000 and therefore should be closely aligned to the priorities set out in national PAFs. As a key condition to succeed in developing the territory in a coherent and sustainable manner, policy-makers have to take into account biodiversity, nature conservation and green infrastructure in the integrated territorial strategies, especially through the coordination of the various programmes.

SUSTAINABLE URBAN DEVELOPMENT (SUD)

The European Commission has long recognised the important role that local authorities play in improving the environment. The European Green Capital Award[47] has been conceived as an initiative to promote and reward cities that are frontrunners in these efforts. The proposed new provisions on urban development represent another step forward in this direction (see more in the Commission factsheet on integrated sustainable urban development)[48]. The ERDF supports sustainable urban development through integrated strategies that tackle the economic, environmental, climate and social challenges of the urban areas[49]. This is an opportunity to integrate biodiversity and nature in sustainable urban development programmes and plans. A minimum of 5% of the ERDF resources allocated to each Member State shall be invested in integrated actions for sustainable urban development implemented through the Integrated Territorial Investment (ITI) tool (see above), with the management and implementation delegated to cities. In addition, the ERDF can also support innovative actions in the field of sustainable urban development, subject to ceiling of 0.2 % of the total annual ERDF allocation. These can include studies and pilot projects to identify or test new solutions to issues relating to sustainable urban development.

Benefits maintained by green infrastructure are particularly important in urban environments as they have significant potential to strengthen regional and urban development, including by maintaining or creating jobs. Further green infrastructure in cities plays a vital role in creating climate resilient development. The recently adopted EU Adaptation Strategy underlines this, and foresees the development of an adaptation initiative for cities similar to the Covenant of Mayors[50].

Examples of projects that promote the use of green infrastructure in urban areas and the associated benefits are presented in the boxes below.

GRABS - Green and Blue Space Adaptation for Urban Areas and Eco Towns (ERDF)

The project is aimed at facilitating the much needed exchange of knowledge and experience with the actual transfer of good practices on climate change adaptation strategies to local and regional authorities. The project raised awareness and increased the expertise of key stakeholders responsible for spatial planning and development as to how green and blue infrastructure can help new and existing mixed use urban development adapt to projected climate change scenarios.

SOURCE: GRABS website: http://www.grabs-eu.org/

46. EC (2012b)

47. EC (2013e)

48. EC (2012c)

49. EC (2011h)

50. The Covenant of Mayors initiative encourages EU cities to commit to and implement sustainable energy plans

Benefits of green infrastructure - socio-economic importance of constructed urban wetlands (Nummela, Finland)

New wetlands were created along the heavily degraded stream corridor in the municipality of Vihti in Southern Finland to compensate for land-use changes within the watershed and to restore lost stream corridor habitats. In addition, a large wetland park named the Nummela Gateway Wetland Park was established at the mouth of the Kilsoi stream. This project is an example of how constructed wetlands can help increase biodiversity while at the same time providing ecosystem services such as erosion and flood control, reduction of pollutants in runoff water, and opportunities for recreation and education. It demonstrates how such benefits can be successfully integrated into urban planning and management processes.

SOURCE: case study in the annex

Green Life in the City, Greece (ERDF)

Green Life in the City is funded under the Operational Programme for Convergence for the Attica region. It funds projects and actions in urban municipalities of the Region of Attica which face problems such as a lack of green spaces, deterioration in quality of life, poor air quality etc. It involves using targeted actions of urban issue revitalisation focusing on its environmental upgrading and improvement of urban equipment. The project will contribute to the improvement and equal distribution of social infrastructure, as well as the protection of the residential character of the City; an increase in business activity within the city, the restoration of its historical and cultural heritage, and the integrated management of the Halandri stream as a key resource for urban green space and as a leisure area for residents; water resources management and flood prevention; energy efficiency schemes; improving traffic flow and further promotion of recycling.

SOURCE: SURF database http://surfnature.ctfc.cat/index.php

European Territorial Cooperation (ETC) provides ERDF dedicated opportunities to support cooperation between different EU regions. Provisions for this European Territorial Cooperation (ETC) are outlined in a separate Regulation[51]. For the 2014-2020 funding period, territorial cooperation under ERDF is to take place on cross-border, transnational and interregional cooperation. It provides opportunities for funding biodiversity conservation across borders and regions. As biodiversity and ecosystems naturally cross borders, this funding is critical for direct support to EU biodiversity goals. Around 3.5% of the total funding for EU Cohesion Policy is to be allocated to support ETC.

51. EC (2011i)

For 2014-2020, the territorial aspect of ETC has been strengthened with additional focus on **macro-regional and sea-basin strategies** (e.g. the Baltic Sea and Danube regions). This refocus on Member States and regions which are critically linked through shared natural resources provides a solid basis for further cooperation and investment in the natural environment, including innovative approaches to integrating ecosystems services and green infrastructure into development solutions in these areas. Examples include the BALANCE (Baltic Sea Management – Nature Conservation and Sustainable Development of the Ecosystem through Spatial Planning[52] and the case study DANUBEPARKS.

ETC opportunities should particularly be exploited by the more developed Member States and regions where thematic concentration may limit the access to direct funds for the environmental objectives, through national and regional Operational Programmes. There has already been good experience with using these funds to promote nature and biodiversity goals either through direct application in a trans-boundary context or exchange of experience across regions, such as in the Natureship case study. Other examples of projects financed under the ETC objective are presented in Table 2 below.

Table .02

EXAMPLES OF CROSS-BORDER (IVA), TRANSNATIONAL (IVB) AND INTERREGIONAL (IVC) COOPERATION PROJECTS WITH BIODIVERSITY AND ASSOCIATED MULTI-BENEFIT FOCUS

SOURCE: own compilation

INTERREG IVA

Action for Biodiversity (East Border Region)
The project aims to engage local authorities and communities with biodiversity, and to raise awareness and build capacity for the protection of habitats, species and ecosystems in the region. The project specifically aims to demonstrate a clear and measurable link between a strong, vibrant economy and a functioning healthy environment with biodiversity at its core.

http://www.eastborderregion.com/pages/index.asp?title=Action_For_Biodiversity

INTERREG IVB

VALUE - Valuing Attractive Landscapes in the Urban Economy (North West Europe Programme)
The project aims to establish where green infrastructure investments in cities and regions will deliver the greatest economic benefits. It also aims to ensure that high quality green infrastructure is protected and integrated to the urban fabric.

http://www.value-landscapes.eu/

INTERREG IVC

REVERSE - Regional exchanges and policy making for protecting and valorising biodiversity in Europe
The project consists of an exchange of experiences between the 14 European Partners involved in the project aimed at protecting biodiversity. Its aim is to promote biodiversity on a European scale, by favouring positive action in territories. The project focuses on 3 key topics: **1.** Agriculture, food production and biodiversity, **2.** Tourism and biodiversity, **3.** Land development and biodiversity.

http://reverse.aquitaine.eu/

52. http://www.balance-eu.org/

4.4 COORDINATION AND COMPLEMENTARITY WITH OTHER EU INSTRUMENTS

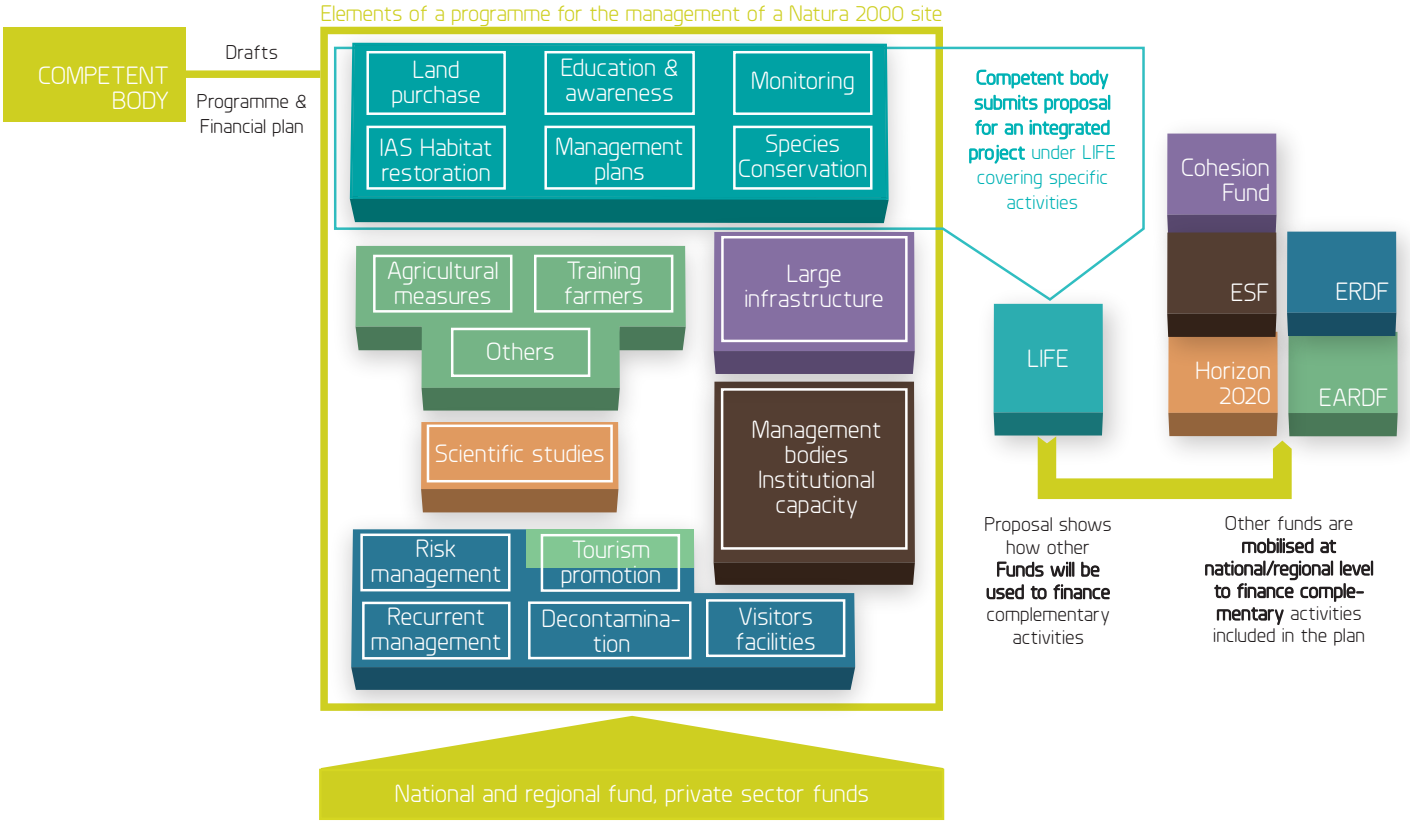
Opportunities to finance biodiversity and nature protection also exist under other EU funding instruments such as the European Agricultural Fund for Rural Development (EAFRD), the European Maritime and Fisheries Fund (EMFF), the EU Research and Innovation Programmes Horizon 2020 and the LIFE instrument. In order to optimise the investment opportunities and leverage additional funding for biodiversity and nature protection, potential synergies and complementarities with other EU funding instruments should be actively pursued.

In the 2014-2020, the ERDF, ESF and Cohesion Fund are placed under a Common Strategic Framework (CSF) with the **EAFRD** and the **EMFF** (all five of them now referred to as the European Structural and Investment Funds (ESIF)). The aim of the CSF is to ensure better coordination between funding instruments under shared management and to strengthen their alignment to EU strategic objectives. The future Partnership Agreements are envisioned to set out strategic priorities for all five funds under shared management, providing an opportunity to ensure better targeting of investment for biodiversity, nature protection and green infrastructure in regions, rural areas and marine / coastal areas depending on the specific local circumstances, priorities and needs. For example, the 2014-2020 EAFRD will promote different agri-environment measures that are relevant to biodiversity and nature conservation. The 2014-2020 EMFF will focus on ecosystem based management of fisheries and will promote the management, restoration and monitoring of Natura 2000. Possible overlaps should be avoided, while synergies should be exploited so as to ensure a coherent and targeted investment framework for all territories that delivers added value in terms of tangible results for biodiversity and nature protection.

Further synergies should be pursued with Horizon 2020 for research and innovation projects in the area of biodiversity, ecosystem services and bio-economy. **Horizon 2020** covers societal challenges in the priority area of sustainably, managing natural resources and ecosystems, and is directed towards assessing and forecasting changes in biodiversity, and understanding the dynamics of ecosystems, particularly marine ecosystems. In particular, stakeholders and Managing Authorities are encouraged to focus on the synergies between Horizon 2020 and the forthcoming national and/or regional research and innovation strategies for smart specialisation (RIS3) as explained in section 4.2. Thus, research projects co-financed by Horizon 2020 can create the knowledge base for investment opportunities under ESI funds in different priority areas among biodiversity, ecosystem services and nature protection.

As before, in the 2014-2020 funding period the **LIFE** programme is the only funding stream specifically dedicated to the environment. The LIFE Programme will be divided into two sub-programmes including the sub-programme for Environment and the sub-programme for Climate Action. The sub-programme for Environment is divided into three priority areas: Environment and Resource Efficiency, Biodiversity and Environmental Governance, and Information. Under the Biodiversity priority, key actions focus on Natura 2000 (envisioned to be delivered through Integrated Projects to implement Priority Action frameworks (PAFs, see section 4.5 below), the implementation of the EU Biodiversity Strategy, and the demonstration and dissemination of good practice examples for nature and biodiversity.

The Commission proposals for the post 2013 period aim to improve the coordination and complementarity of activities under LIFE and other EU funding instruments in order to avoid overlap. This could be achieved through the new approach of developing Integrated Projects in the areas of nature, water, waste, air, climate change mitigation and climate change adaptation under LIFE. Integrated Projects have a strong focus on nature with the proposed targets of 25% of EU habitats and 25% of EU species targeted by projects for improved conservation status; 3% of ecosystem services restored; and 15% of Natura 2000 network adequately managed. This means promoting solutions, methods and approaches to be tested and demonstrated under the LIFE Programme, then replicating them at a larger scale under Cohesion Policy. Bearing this in mind, Figure 3 provides an overview of how LIFE and Cohesion Policy could be coordinated in the context of Integrated Projects in the field of nature in terms of responsibilities, examples and practical steps.



03.

Example of Integrated Project - Nature

SOURCE
European Commission

4.5 PRIORITISED ACTION FRAMEWORKS (PAFS)

In order to encourage better integration of funds and to promote more strategic planning of investments in Natura 2000, the Commission is assisting Member States in the development of their **Prioritised action frameworks (PAFs)** under Article 8 (4) of the Habitats Directive. It is intended that the PAF will identify key priorities for managing the Natura 2000 network, to achieve the objectives of the EU Biodiversity Strategy 2020. As Natura 2000 plays a central role in the EU efforts to promote biodiversity conservation, it is expected that PAFs will be an important planning tool for identification and prioritization also of the wider set of nature-related investment needs and their integration into the Partnership Agreements and Operational Programmes (OPs). The aim is to ensure strategic focus on the funding need priorities, while maintaining complementarity and consistency between the information contained in the prioritised actions frameworks and the relevant Operational Programmes.

The PAF is not intended as a stand-alone document but as a strategic tool to assist in the mainstreaming of funding for Natura 2000 across different EU financial instruments. This is in line with Commission proposals for the next Multiannual Financial Framework (2014-2020), which advocates a strengthened integrated approach using the various EU funds to provide a strong basis for the new Natura 2000 financing strategy. These include the EARDF, EMFF, the ERDF, ESF and Cohesion Fund, as well as the LIFE. Proposed measures for funding Natura 2000 sites in the OPs should be consistent with the PAFs. PAFs will also provide opportunities for improved stakeholder involvement in programme and project development The PAFs will also be valuable references for the development of 'integrated projects' under the proposed LIFE Regulation.

ENABLING AND SUPPORTING MULTI-BENEFIT INVESTMENTS IN NATURE THROUGH GREEN INFRASTRUCTURE

PART 03

In Part 02 the direct, indirect and integrated funding opportunities for nature, biodiversity, ecosystem services and green infrastructure, which have the capability to provide multi-benefits were demonstrated. Part III will look at the different stages of the Cohesion Policy cycle in order to identify the main entry points and steps for approaches that managing authorities need to take in order to effectively utilise and support these investment opportunities. These different stages and approaches are presented in Figure 4 below.

04.

Cohesion Policy stages and entry points for approaches

5. STRATEGIC PLANNING AND PROGRAMMING

The Partnership Agreement summarises Member State's plans for using all the ESI Funds in a way that is consistent with the EU 2020 Strategy for smart, sustainable and inclusive growth. The Partnership Agreement is a binding document, new for 2014-2020, with obligations on the part of the Member State. It is therefore a good opportunity to ensure that nature and biodiversity goals and their role in overall socio-economic development is clearly stated up front in this document. The Operational Programmes (OPs) are the key planning tool for Cohesion Policy expenditure.

5.1 BIODIVERSITY AND ECOSYSTEM SERVICES AS A HORIZONTAL PRINCIPLE

Article 8 of the Common Provisions Regulation requires that the objectives of the Funds be pursued in the framework of sustainable development and the promotion of environmental protection and improvement. It further stipulates that environmental protection requirements, resource efficiency, climate change mitigation and adaptation, disaster resilience and risk prevention and management are promoted in the preparation and implementation of Partnership Agreements and Operational Programmes. This is an important requirement that incentivises Managing Authorities and other stakeholders to set out special arrangements in order to ensure that environmental issues – including nature and biodiversity – are promoted in the preparation and implementation of Operational Programmes. It is important that this part of the Operational Programmes not be limited to an analysis of how the proposed measures will be in line with environmental acquis. It must elaborate upon concrete implementation principles and tools as well as procedural and institutional mechanisms for the integration of environmental and biodiversity consideration along the entire programme cycle.

5.2 DEVELOPING A BIODIVERSITY-SMART OPERATIONAL PROGRAMME

These sections will point out where the main opportunities are for including a nature and biodiversity perspective into the different sections of the OPs, with an eye towards overall sustainable development and green economic growth. This broader perspective is essential for recognising the overall potential benefits of maximising funding in these areas as it considers the synergies between investing in nature and other policy fields. It is important that interventions proposed in the OPs are planned in harmony with sustainability objectives and do not cause undue or irreversible damage to the natural environment.

Communication across different sectoral authorities and the main economic development authorities is critical for programming. Biodiversity experts (i.e. experts in environmental authorities, relevant experts in the sectoral ministries and other knowledgeable partners) and Managing Authorities will need to mobilise available information about the potential value and multi-benefits deriving from biodiversity and ecosystem services through green infrastructure investments across Cohesion Policy sectors. The potential priority interventions and technical options for funding should also be discussed, and these should be then presented to the sectoral and other planning authorities at the right time for consideration into programmes.

Programming of OPs follows a logical process – first a development strategy is set forth, which identifies and justifies priority axes for spending, through a SWOT analysis[53]. Funding priorities describe the objectives and parameters for spending – e.g. the future development of projects. This sets the basis for determining what measures and activities are eligible and could be funded within the programme. Specific financial appropriations, programme indicators and a review of horizontal principles are also integral parts of the programme. Finally, there is a need to ensure compatibility and complementarity with and between different EU instruments (e.g. with the help of horizontal planning tools such as PAFs, see 4.5 above).

Table 3 presents the different sections that constitute an OP. It explains why each stage of the process and section of the programme document offers an important opportunity to focus on biodiversity and ecosystem services.

53. EC (2011i)

Table .03

ANATOMY OF A BIODIVERSITY-SMART OP

SOURCE
based on information from the SURF project's analysis of selected Operational Programmes

OP SECTION	IMPORTANCE FOR INTEGRATING, BIODIVERSITY, ECOSYSTEM SERVICES AND GREEN INFRASTRUCTURE Example from an existing Operational Programme
SWOT analysis	**Importance:** Member States and regions should include in the SWOT analysis information to demonstrate that biodiversity and ecosystem services are critical components of socio-economic development. The description of the natural environment and environmental protection infrastructure, together with the analysis of strengths, weaknesses, opportunities and threats, draw a very important baseline for further integration and interpretation of activities and measures for nature conservation. Note description could also be built upon the information contained in the PAFs (section A-B). It will be important to include in the SWOT the extent and state of the natural capital (e.g. forests, wetlands, protected areas and wider green infrastructure), which elements are the: ➡ 'Strengths' for the region - e.g. assets and sources of resources and services, income, development, identity, security and wellbeing; ➡ 'Weaknesses' - e.g. areas under water stress, degraded ecosystems; ➡ 'Opportunities' - e.g. new sources of income and development, potential benefits from restoration and management); and ➡ 'Threats' - e.g. risks of climate impacts, pollution pressures, degradation and soil erosion. These can create an input into planning (e.g. zoning key natural assets and sources of services), priorities for investments (e.g. restoration), and monitoring measures (e.g. as regards risks). SEAs and EIAs can usefully integrate such information too. The nature of the information will be a mix of spatially explicit, qualitative, quantitative and monetary data for specific methodologies for assessments, indicators, mapping and valuation[54]. **Example:** In the Regional Programme 'Strengthening Regional Development Potential Slovenia' biodiversity is clearly mentioned in the SWOT analysis. Information on the different habitats types and risks encountered are detailed, as well as the changes that have occurred in recent decades and a historical overview of how Natura 2000 sites have been managed in the past. The special needs for nature-preserving activities are linked to socio-economic opportunities in the tourism sector.
Priority axis objectives	**Importance:** The more precisely the priority axis objectives are formulated, the easier it is for project applicants to refer to them. It is therefore necessary to include nature, biodiversity, ecosystems and green infrastructure directly at the priority stage when they can either be directly funded or integrated into other priorities. Priority axes also establish the link to the overall thematic objectives. Section F of PAFs could help prioritise different investments. In particular, section F.3 refers to the multi-benefits associated with investments in Natura 2000 sites. **Example:** The Regional Programme of Catalonia is an example of how biodiversity objectives can be clearly integrated within the objectives of the priority axis. Priority 2 'Environment and Risk Prevention' seeks to further sustainable economic development while protecting and improving the natural environment by enhancing the clean and rational use of natural resources and through the establishment of environmental risk alert and prevention mechanisms. Another nature conservation related priority is number 4, 'Local and urban sustainable development', with a view to financing projects in the field of tourism and culture. Benefits can be derived from the variety and quality of the region's cultural assets and the job created by the tourism sector.

54. TEEB (2010), TEEB (2011a), TEEB (2012b)

Activities

Importance: Well-described activities are often the most important part of the programmes as they define the eligible measures. Activities should be formulated broadly with a clear language, such that it can be easily understood and readily translated for tenders and calls for projects. They should be general enough to be included in the Operational Programme, but also concrete enough to guide the on-going project development.

Example: The OP Regional Competitiveness and Employment Programme, Brittany, clearly defines the funding opportunities by listing specific activities and giving an indicative breakdown by categories. The Priority 4 is 'Conserving the environment and anticipating natural risks'. It envisages specific activities and provides an indicative breakdown by categories such as:

- studying and conducting ecological engineering work;
- studying and implementing the regional migratory fish plan;
- the set-up of the regional natural heritage observatory.

Activities to be financed under indirect opportunities are also delineated. The Priority 3 'Highlighting Brittany's exceptional maritime assets, from the point of view of sustainable development of the coastline' includes actions related to biodiversity and the natural world:

- supporting actions aimed at reinforcing knowledge about the coastline;
- implementing the regional plan for integrated management of coastal areas.

Indicators

Importance: The proposed regulations for 2014-2020 place a greater emphasis on indicators to measure results, with common indicators as a requirement. The new performance framework consists of indicators, milestones and targets to be developed at the programming stage for each priority axis. This approach provides an opportunity to include biodiversity and ecosystem services indicators for all programmes. As well as using wider set of indicators for the four capitals – economic, environmental, social and human capitals. The specific objectives of each programme should be expressed by appropriate result indicators to capture the changes that the programme is intended to facilitate. The programme indicators should be clear, applicable and should be inferred from the SWOT analysis and goals. Indicators are better used during the early stages of the programming process to increase awareness of the potential and the value of the natural environment. This approach will result in the improved consideration of biodiversity and nature conservation in programming by creating opportunities. Moreover with monitoring and reporting taking place during the implementation and evaluation stages, the approach further strengthens programmes. Natural environment and biodiversity-focused projects must ensure that they achieve their target, but should also demonstrate the value of wider project outcomes. It is important to set out indicators which will help to measure biodiversity impacts and evaluate socio-economic outcomes. This will make use of a mix of (spatially relevant) qualitative, quantitative and monetary indicators. Where possible and relevant, links to environmental economic accounts can be made, over time these accounts will provide new indicators (e.g. relationship between land, water and carbon biomass for different land-uses) that can support CP. Their development will also benefit from indicators work within CP.

Example: The Managing Authority for the OP for West Wales and Valleys set out at a very early stage the ERDF Indicator and a specific guidance document that provided definitions and details of the evidence requirements for the ERDF monitoring and evaluation indicators. The monitoring indicators are the outputs and results (outputs defined as the activities undertaken by the project and results the direct consequence of the activity). The evaluation indicators are the impacts (the impacts defined as the longer term consequence of the activity and follow on from the results). The definition of such indicators helped setting out the parameters for the Environment for Growth Theme projects. These were:

- Number of initiatives to develop the natural environment;
- Kilometres of managed access to countryside or coast;
- Number of additional visits;
- Number of enterprises created;

- Number of gross jobs created;
- Income generated (Spend in £ associated directly or indirectly to the visits under the indicator 'visits').

Only after these parameters were laid out, a series of promotional activities were organised in order to launch different projects calls.

For a broader description and concrete examples of indicators, see section 8.1.

5.3 REVIEW AND REVISION: THE ROLE OF ASSESSMENT PROCEDURES IN DEVELOPING BIODIVERSITY-SMART OPERATIONAL PROGRAMMES

It is important to underline that the value of nature can be measured and demonstrated by different indicators. Some of these will be monetary, such as the value of avoided costs of water purification or avoided costs of flood damage. Others will be in quantitative form, such as the number of people benefitting from clean water or tonnes of carbon stored. Finally, some indicators will be qualitative, such as sites of cultural importance, and scientific learning. To have a full sense of the value of nature, generally a combination of monetary, quantitative and qualitative indicators is needed. Moreover indicators in conjunction with an understanding of biophysical functions behind identified values and a spatial appreciation of the links between the ecosystem and social and economic systems increase the understanding of nature[55].

Understanding the real value of nature (biodiversity and ecosystem services) and its contributions towards socio-economic development goals, in the context of developing Operational Programmes, can be challenging. However, there are a number of strategic procedures and programming principles that can provide support to Managing Authorities and partners. Operational Programmes are subject to an ex-ante evaluation, which checks the overall consistency and relevance of the programmes, and a Strategic Environmental Assessment (SEA) to determine the expected environmental impacts and interactions of the draft programme.

The ex-ante evaluation examines consistency of the programme strategy with funding priorities and the regional situation. It is therefore a chance for a re-appraisal of the treatment of nature in funding priorities and horizontal principles. The ex-ante evaluation also has to summarise the Strategic Environmental Assessment (SEA); in some cases the two assessments can be carried out jointly. However, evaluators for both documents should cooperate as closely as possible to avoid discrepancies and misunderstandings between two documents.

SEA is an important tool for integrating environmental considerations, including biodiversity and ecosystem services, into Operational Programmes. Most Operational Programmes will constitute plans or programmes that are likely to have significant environmental affects (or set the framework for future development consent of projects likely to have environmental effects) according to the SEA Directive. Experience with the 2007-2013 programmes have shown that the SEA procedure is a vital opportunity for bringing in an environmental perspective to Cohesion Policy spending. Especially for the 'proofing' of programmes covering transport, infrastructure and other interventions that are most likely to have a negative impact on the natural environment, which includes biodiversity and ecosystem services. There is potential to use SEA to evaluate the positive contributions of plans, programmes and projects as well. There is considerable guidance available on conducting SEAs, derived from good practice from Member States at the European and national levels.[56]

Using an ecosystem-based approach when conducting an SEA can help identify the importance of different ecosystems and their distinct services and benefits. Here, key questions to ask during the SEA would be the following:

- Is the plan or programme dependent upon biodiversity and ecosystem services?

55. See also TEEB (2010), TEEB (2011) and Kettunen and ten Brink (2013).

56. See DG Environment's Environmental Assessment page at http://ec.europa.eu/environment/eia/.

- Can an increased supply of ecosystem services contribute towards the plan or programme's objectives?
- Are there opportunities to consolidate or connect habitats with a view of enhancing biodiversity and ecosystem services?
- Are there opportunities to build or develop green infrastructure as part of the plan or programme to support its non-environmental goals and its environmental goals (e.g. adaptation to climate change or increasing connectivity of protected sites)?

For more details, see the European Commission's 2013 Guidance on integrating climate change and biodiversity into SEA, under further references at the end of this section.

With regard to implementation of the OP, SEA can contribute to the development of eligibility and selection criteria for projects, as well as programme monitoring plans and indicators (see Sections 7 and 8 below for more details on these). A good example of this is the OP for the 2007-2013 Central Baltic Interreg IVA Programme. The OP specifies how the SEA has been taken into consideration in the decision-making/ development of the programme. There is a detailed table on how mitigation measures have or have not been incorporated into the programme. The SEA also provided guidelines on project selection criteria, and set the terms of reference for EIA of future projects.

5.4 BIODIVERSITY AND PARTNERSHIP

The proposed Common Provisions Regulation requires that 'partners' shall be involved at each stage of the programme cycle and shall be members of the monitoring committee. In practice, partnership can range from a very formal consultation exercise to genuine participatory planning. For cross-sectoral issues like biodiversity, the right for environmental authorities, experts and NGOs to have a say in the design of programmes and projects is critical.

PARTICIPATION PROCESS DURING PROGRAMMING: **STRAT.AT 2020 AUSTRIA**

The Austrian Conference on Spatial Planning (ÖROK) is responsible for the process of preparing the partnership agreement – STRAT.AT 2020 – for Austria. This process is based on the principle of partnership, enabling participation of different stakeholders in an appropriate fashion. The four forums of **STRAT.AT 2020** are open to all players who are involved in the programmes (programme implementation partners, economic and social partners, association of cities and municipalities, intermediate service providers, NGOs, experts/scientists). Further **focus groups for each topic** are established. Several representatives from the governmental nature conservation departments and from the umbrella environmental organisation BIO Austria as well as other biodiversity experts participated to the meeting that took place on 28 November 2012. A SWOT analysis of the current status of biodiversity as well as the funding needs and the specific role of the structural funds in Austria were discussed. Particular attention was given to how the EU Strategy 2020 (and the associated Biodiversity Strategy in Austria) can best be implemented through the programmes. The working documents and the results of the 'Biodiversity and Conservation' focus group are available online.

SOURCE: STRAT.AT 2020 website http://www.oerok.gv.at/eu-regionalpolitik/eu-kohaesionspolitik-2014/nationale-strategie-stratat-2020.html

5.5 SUMMARY: PRACTICAL TIPS FOR INTEGRATING BIODIVERSITY AND ECOSYSTEM SERVICES GOALS IN THE PROGRAMMING PHASE

Managing Authorities are encouraged to put in place different procedures and institutional arrangements that will ensure biodiversity and ecosystem services are taken into consideration at the programme level. These may include[57]:

- Set up of an inter-ministerial working group: This can ensure effective partnership, good coherence between sectoral planning tools which exist at national, regional and sub-regional levels, as well as between the different EU funds available.

- Inclusion and consultation of civil society: Participants with specialist expertise, including environmental authorities and NGOs should be part of the work on programming.

- Set-up and/or reinforce environmental networks and exchanges between project developers: EU Funds would benefit from facilitating networking between biodiversity stakeholders and creating a shared platform for exchange of experience and better sharing of available knowledge (e.g. The European Network of Environmental Authorities at supranational level, the Italian Network of Environmental and Managing Authorities at national level or REEB, Brittany network for education and the environment at regional level).

- Hold a regional conference for monitoring European funding, on the theme of biodiversity and ecosystem services: This would provide a platform for discussion and monitoring of European programming, bringing together the State, Regions, cities and all other biodiversity stakeholders. This collaboration could constitute an opportunity for developing specific monitoring and evaluation tools that can support program revisions that will address the constraints presented by biodiversity.

- Ensure strong evidence based communication: Managing Authorities should engage in persistent cross-sectoral communication and develop a clear, convincing message about the opportunities that funding nature conservation entails.

- Provide genuine opportunities for the involvement of environmental stakeholders in monitoring committees (MCs): Programme MCs should allow for significant numbers of environmental partners, including NGOs, with voting rights and should ensure a fair voting balance across different types of stakeholders so that environmental interests are effectively represented.

Such institutional and organizational arrangements can promote and support further preparation activities in order to ensure that biodiversity is appropriately integrated within the PAs and the OPs; and eventually into project development.

Examples of 'preparatory activities' are:

- Development of an evidence base linked to the economic value of the natural environment: Scientific studies can demonstrate the rationale for including nature and biodiversity into programmes and also define the best way forward for priority axes and more specific investment measures that contribute to overall socio-economic goals.

- Determination of the scale of funding needed to meet 2020 biodiversity targets: A study to determine the scale of funding required for achieving EU biodiversity's commitments and identify the cost-benefit of them, including an estimate of the added value generated, would better inform discussions with the Managing Authority and help to prioritize biodiversity and ecosystem services funding within the Operational Programme.

- Preparation of OPs in line with Prioritised Action Frameworks (art. 8 Habitat Directive): This will ensure good coordination with Nature 2000 management plans and funding needs, and would help integrate Natura 2000 financial requirements into relevant ESI Funds.

57 SURF (2012b), SURF (2012f)

FURTHER RESOURCES FOR STRATEGIC PLANNING AND PROGRAMMING

The Position Paper Integration of Biodiversity and Natura 2000 in Partnership Agreements and Operational Programmes 2014-2020, by the ENEA-MA Working Group on Cohesion Policy and Biodiversity is intended for representatives of Managing Authorities and environmental authorities involved in the development and review of programming documents, and also as a useful basis for discussing investment portfolios with stakeholders within the Member States.

http://ec.europa.eu/environment/integration/pdf/ENEA%20BiodivFINAL%2002042013.pdf

The European Commission's Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment.

http://ec.europa.eu/environment/eia/pdf/SEA%20Guidance.pdf

The CEE Bankwatch network has prepared a paper with proposed priorities addressing biodiversity and green infrastructure for Cohesion Policy in Hungary; this covers objectives, eligible activities, sustainability criteria for funding, programme monitoring, indicators and targets. The approach and concepts are transferable to other Member States.
http://bankwatch.org/sites/default/files/shadow-HU-biodiversity.pdf

A recent study for the European Commission covers biodiversity proofing of the EU budget, with a focus on ensuring that spending across all areas of intervention protects and enhances biodiversity, in line with the EU Biodiversity Strategy.

Background Study Towards Biodiversity Proofing of the EU Budget

The European Commission issued in April 2013 a discussion paper *Mapping and Assessment of Ecosystems and their Services: An analytical framework for ecosystem assessments under Action 5 of the EU Biodiversity Strategy to 2020*. The objective of this discussion paper is to support the development of a coherent analytical framework to be applied by the EU and its Member States in order to ensure consistent approaches are used to map and assess the state of ecosystems and their services as proposed by Action 5 of the EU Biodiversity Strategy to 2020.

http://ec.europa.eu/environment/nature/knowledge/ecosystem_assessment/pdf/MAESWorkingPaper2013.pdf

6. INFORMATION AND SUPPORT TO PROJECT DEVELOPMENT

Developing Operational Programmes that integrate nature and biodiversity and recognise their potential to generate benefits is the first step in the process of bolstering the contribution of Cohesion Policy to a greener economy. Managing Authorities Intermediate Bodies, Monitoring Committees, and all other stakeholders will need to translate these strategic orientations into all steps of programme implementation: from supporting the development of projects to implementation and monitoring. To do so, they should aim at reaching out to relevant stakeholders who have the capacity to initiate the most suitable projects - those that understand and actively integrate a multi-benefits approach to nature, biodiversity and ecosystem services.

This section outlines the key aspects related to awareness-raising and dissemination of information, which are:

- Targeting the right kinds of applicants.
- Providing the support necessary to ensure that applicants understand and make use of opportunities to promote/integrate biodiversity and ecosystem services into their projects.
- Lastly, that applicants think creatively about how ecosystems and green infrastructure can be part of overall development solutions.

6.1 AWARENESS-RAISING AND PUBLICATION OF PROJECT OPPORTUNITIES

Combining timely dissemination of information with awareness-raising actions is essential to promote and mainstream an approach to Cohesion Policy interventions that focuses on multi-benefits from nature and biodiversity. When informing stakeholders about programmes, Managing Authorities should be certain to include those stakeholders and potential project initiators who will be critical to the development of projects that promote and integrate nature and biodiversity. These will very often include smaller-scale applicants such as local partnerships, NGOs and small enterprises, who may lack the capacity to systematically monitor Cohesion Policy funding opportunities. Managing Authorities should therefore ensure that these institutions and organisations take part in the process. Selected examples of well-designed promotional activities, including communication and awareness-raising strategies and project-related information materials are presented in the box below.

SELECTED EXAMPLES OF PROMOTIONAL ACTIVITIES

West Wales and the Valleys OP (see case study in the annex): A launching seminar as well as a 'road show' were organised to attract and inform potential applicants. This served to gather ideas on how to take relevant project forward. A circulation list and a webpage to inform interested parties were also created, and further dissemination activities were organised. Information on general result indicators in the framework of the 'Environment for Growth' (E4G) theme was also disseminated as part of the promotional activities under this OP.

National/Sectoral OP 'Environment', Czech Republic (see case study in the annex): Supporting materials for project application have been made available to interested parties. These materials outline a description of the actual situation, planned aims and tools, strategy for achievement of goals, specification of deliveries, indicators and interconnection with other axes of the OP.

6.2 TARGETING THE RIGHT APPLICANTS

Preparing relevant projects can prove challenging for certain stakeholder categories with limited resources; yet it is these small, local organisations that are often best-placed to develop and implement projects with great potential for the natural environment. It is not uncommon to see potential applicants in particular NGOs, SMEs and local partners shy away from funding opportunities due to cumbersome administrative and financial requirements.

Managing Authorities should therefore consider easing financial constraints and minimising administrative burdens wherever possible. To do this, Managing Authorities may:

- Set up pre-financing facilities that can help overcome cash-flow constraints of specific applicants.
- Revise the payment schedules for smaller projects to improve cash flow for the project proponent.
- Reduce application and invoice processing times by means of adapted one-stop shops.[58]
- Adopt a simplified costs approach to reimbursement, using flat rates based on unit costs set at EU level (as opposed to a real-cost approach).
- Consider ways in which they can adopt 'lighter' auditing requirements for smaller projects.
- Shorten the mandatory period for document retention (e.g. by means of rolling closure mechanisms) thus helping reduce the amount of resources required for bookkeeping and freeing up capacity for innovative project development.

Some of these options are among the most recent European Commission proposals to simplify Cohesion Policy after 2013[59]. Adapted administrative procedures can also be instrumental in fostering the development of the community-led initiatives discussed in section 5.3 of this Guide. Some examples of exiting Cohesion Policy initiatives aimed at facilitating the involvement of small project proponents are provided in the box below.

EXAMPLES OF FOCUS ON SMALLER APPLICANTS

The Alpine Carpathian Corridor programme (see case study in the annex) illustrates how the provision of adequate financing options can favour the emergence of relevant projects: pre-financing was available for small/civil society applicants thanks to a more flexible approach to funding by the Austrian Government.

Interreg 4A France-England encompasses a 'micro-project' system for voluntary sector associations and SMEs. Micro-projects are partnership projects with a total budget of less than EUR 60,000. The co-funding can reach 75%, and the instruction process is faster.

West Wales and the Valleys OP (see case study in the annex): To reach out to specific types of applicants that might not ordinarily consider Cohesion Policy funding, the programme calls were advertised on the 'Sell2Wales', an SME-oriented website. Managing Authorities (WEFO[60]) also produced guidance on 'Sponsorship, Partnership, Procurement and Grants', which included advice on access to EU funding by small/individual project applicants.

58. SURF (2012f)

59. EC (2012d)

60. WEFO (2012)

6.3 DESIGNING BIODIVERSITY-SMART PROJECTS

The design and preparation of projects that take every opportunity to consider ways in which biodiversity and ecosystem services can be promoted is an integral step in the process of maximising the contribution of Cohesion Policy to sustainable growth and a greener economy. Managing Authorities (or intermediate bodies) play an important role in facilitating the development of the 'right' types of projects and should take every opportunity to support and guide project proponents along the way. This is particularly important as recent studies have identified that the lack of awareness, incentives, tools and guidance to support analytical capacity are among the main hindrances to a broader uptake of ecosystem services valuation in policy and project appraisal.[61]

The role of Managing Authorities in this context will vary depending on their in-house skills and expertise as well as available resources. The following are some of the ways in which Managing Authorities can actively support the development of projects that both directly support and biodiversity and ecosystem services, and also maximise associated socio-economic benefits.

- **Ensure that officials in charge adequately understand the multi-benefits linked to biodiversity and ecosystem services.** This involves reaching for external expertise and support where required and by providing training opportunities to officials. Technical assistance funds are available from Cohesion Policy to support this.

- **Provide technical assistance to project proponents where required.** For example, in the form of advice from dedicated experts within Managing Authorities, such as 'environmental coaches' and training programmes, and allowing for joint capacity building involving all stakeholders (e.g. on a sectoral or thematic basis, or for similar stakeholder categories)[62], with special focus on support with interpretation of goals, requested input and output, etc.

- **Provide tailored guidance and access to relevant resources for applicants.** Optimising project design requires knowledge and skills that may not be at the disposal of many project initiators. This notably involves providing access to written and online materials such as:

  - Guidance on project design, project development, project cycle management, etc.

  - Fiches examining the dependence on nature and exposure to degradation of sectors covered by Cohesion Policy expenditure.

  - Thematic studies, on ecosystem based adaptation to climate change and integrated coastal zone management (ICZM).

  - Descriptions of relevant project types and project examples (see box 'relevant project type recommendations').

  - User-friendly abstracts and/or translations of any of the above materials.

- **Facilitate access by project proponents to qualified external advisory services**; e.g. how to prepare applications and develop projects that take multi-benefits linked to biodiversity and ecosystem services into account. These services can also be designated as eligible expenditure when the project is approved.

- **Refer project applicants to potential partners** whose involvement could strengthen their project proposal.

There are a number of existing successful approaches to providing environmentally-oriented advice and guidance to applicants for Cohesion Policy funding from around the EU. Some of these are reviewed in the case studies in the annex to this guide and the box below. It is important that each Managing Authority tailor advice and guidance to the specific attributes of the territory and the programme; and finds an approach that fits the working culture of the organisation implementing the project.

61. Defra (2010)

62. SURF (2012c); McGuinn *et al.* (2012)

EXAMPLES OF PREPARATION SUPPORT MECHANISMS

In the OP European Objective for Territorial Cooperation Austria-Czech Republic a programme complement was developed by the Monitoring Committee where the purpose of each individual activity field is explained in detail and examples are given of potential activities, as well as descriptions of projects that should receive special support.

Infrastructure and Environment OP, Poland: The application and preparation of a large, dispersed water retention project required special practical provisions. Handbooks were distributed by the project coordinator to project beneficiaries; moreover, direct support was provided to Regional Directorates and Forest Districts. Another good practice was the set-up of a database for monitoring investments and expenditures.

DANUBEPARKS (see case study in the annex): Capacity building has been carried out to train local stakeholders, including on product development (boat excursions, visitor centre and nature trail design etc.), marketing and regional cooperation.

South East Europe Transnational Programme: Beneficiaries received assistance for project preparation, application and implementation from established SEE Contact Points in collaboration with National Committees. Continuous assistance via e-mail was provided. Competent authorities also organise individual meetings with beneficiaries and offer different kinds of information depending on the level of involvement, for example: general information about the programme, information about the documents for the specific call and reasons for rejection at the first stage.

6.4 DEVELOPING A SUPPORT MECHANISM FOR BIODIVERSITY-SMART PROJECTS

Nature and its interactions with socio-economic development can be complex topics, and even experts need to keep up with the ever-changing developments in this field. Managing Authorities should be aware that they do not need to generate support programmes for project applicants from scratch. Many relevant guidance documents, studies, reports and other material already exist that can be very useful for Managing Authorities and potential project applicants. A starting point is provided in this section of the Guide. These are 'raw materials' that will need to be further elaborated on by Managing Authorities in order to clearly explain why and how such documents can be of use to project developers, and relevant Managing Authorities officials.

Managing Authorities can concretely contribute to project initiation and preparation by providing descriptions of relevant project types that should be promoted to maximise socioeconomic benefits associated with biodiversity and ecosystem services. They should also aim at disseminating relevant real-life examples of these kinds of projects wherever possible (including translated versions if necessary). Under its 'Environment for growth theme', the Welsh European Funding Office (WEFO) has issued recommendations of project types that can ally environmental and socio-economic benefits. A selection of these recommendations, which need to be considered alongside funding opportunities, specified in the OPs (see sections 5.1 and 5.2 of this Guide), are provided in the box below.

WALES: ENVIRONMENT FOR GROWTH
List of Indicative Project Activity (ERDF)

- Enhancing and improving the attractiveness of existing, or the development of new, natural and manmade facilities, including the development of centres of excellence and spin-out activities related to the environment;
- Physical infrastructure that will bring economic benefits such as marinas, cycle and walking trails (for recreation rather than for transport), as well as ancillary services and facilities;
- Coastal footpaths, as well as other routes that will provide improved access to the coast and countryside, and that have significant economic benefits;
- Developing the potential for sustainable recreation and economic activity linked to the natural environment, for example, around important conservation and Natura 2000 sites.

Another example is the *Cambridge Sustainable Drainage Design and Adoption Guide*[63], which is designed to help project developers and consultants develop sustainable urban drainage systems (SuDS) as a cost-effective response to the effects of climate change on water management. The Guide, whose advice revolves around the green infrastructure notion, explores specific SuDS methods such as: ponds and wetlands, retention and infiltration basins, swales and filter strips, filter drains, canals, rills and channel systems, as well as source-control methods for private householder SuDS.

An important but complex and challenging task for project proponents, particularly for larger projects, will be to effectively assess the value of nature in socio-economic terms. This can have an important impact on the eligibility and scoring of projects for funding (see section 7 below), and will also contribute handsomely to overall programme monitoring and reporting. Effective valuation techniques can also provide project proponents with a strong rationale for designing projects that integrate biodiversity protection and promotion of ecosystem services as part of overall development solutions.

The box below lists selected examples of existing resources for assessing the value of nature, biodiversity and ecosystem services. The latter are at the core of an integrated approach to multi-benefits associated with nature and biodiversity and are, therefore, essential for Cohesion Policy to become an effective driver towards a greener economy. A selection of indicators to track and measure benefits from ecosystem Services is provided in section 8.1 of this Guide.

ASSESSING THE VALUE OF BIODIVERSITY AND ECOSYSTEM SERVICES: SELECTED REFERENCES

For a quick **overview of a framework to assess the value biodiversity and ecosystem services**, please see the 'How to estimate the value of ecosystem services?' and 'Overall rapid assessment of possible benefits' chapters in Surf (2012f) (p. 12 ff., adapted from Kettunen *et al.* 2009) and Kettunen and ten Brink 2013). These sections namely include: A conceptual and methodological framework for the assessment of potential benefits; applicable valuation techniques; and commonly used estimates for the value of biodiversity and related ecosystem services, as well as estimates of the cost of losing, replacing or restoring ecosystem services. Indicators that can be used to track and measure benefits from ecosystem services are discussed in greater detail in section 8 of this guidance. While assessing and demonstrating the values is important to help raise awareness of the multiple benefits to different stakeholders, this should be seen as only a first step. The fundamental issue is taking account of the values in decision making and 'capturing' the values, whether by due zoning and regulation (e.g. safeguarding an area for its water purification and provision services), by market creation (e.g. by using payments for ecosystem services or developing nature based pharmaceutical products) or by making markets work better (e.g. building up eco-tourism & recreation, improving information to users and consumers such as labelling, and increasing market pull via the use of green public procurement)[64].

The discussion paper 'Mapping and Assessment of Ecosystems and their Services. An analytical framework for ecosystem assessments under Action 5 of the EU Biodiversity Strategy to 2020'[65] provides a valuable analytical framework for a deeper understanding of ecosystem functions. It also provides elements to help Managing Authorities operationalise ecosystem services, notably by better understanding the links between ecosystems, ecosystem services and biodiversity.

The Department for Environment, Food and Rural Affairs (DEFRA) in the UK has developed an innovative approach consisting of the application of existing valuation evidence in policy appraisal[66] (i.e. applying the results of a valuation study undertaken in one specific context to a different policy context), It is a means to bring about a 'more practical use of environmental values in policy-making'. This approach is also

63. Cambridge City Council *et al.* (2010)

64. TEEB (2011a) Chapters 5 to 9 and TEEB (2012b)

65. JRC (2013)

66. Defra (2007; 2009; 2010a, 2011)

identified as 'a response to the difficulty, cost and time constraints for sourcing primary data'. A set of practical guidelines including checklists, references and case studies is available online.

A study proposing a five-step process[67] to 'characterise non-urbanised areas (NUAs) and identify possible new land uses to maximise their benefits' was recently highlighted by the European Commission. The study indicates that 'NUAs can be parks, woodlands, or agricultural land and are an important part of green infrastructure, providing many environmental, social and health benefits'. These benefits include reductions in air pollution, local temperatures and noise, as well as carbon sequestration and recreational services. The study underscores the need to reap these potential benefits given that many areas in Europe are currently at risk of 'urban sprawl'; i.e. low density developments accompanied by the loss and degradation of NUAs.

Another study[68] has proposed **a method to place monetary value on green infrastructure** at both a project and regional scale. This method illustrates the value of investing in green infrastructure to the public and other stakeholders and is 'a useful complement to traditional cost-benefit approaches' in that it highlights the indirect economic benefits of green infrastructure. Furthermore, according to DG Environment of the European Commission, 'it can help convince stakeholders of the importance of investing in green infrastructure and allow policymakers to balance issues of community and economic growth, environmental protection and quality of life'. At the project level, the study applied a cost-benefit analysis, using the concept of 'Total Economic Value', which attempts to capture the value of the different components of natural resources. Costs considered by this approach include land purchasing costs, design and construction costs and maintenance costs of the infrastructure. Whilst benefits include production and regulating ecosystem services, such as air quality improvement and climate change mitigation (see section 8 of this guidance for suggestions on indicators for benefits stemming from these services), as well as improved health from cycling, reduced accident risks and recreational benefits. At the regional level, a 'multiplier analysis' was used, based on an input-output approach, to consider not only the positive impact on local industries but also on wages and the subsequent impacts on the regional economy.

A joint EEA-FOEN report[69] on landscape fragmentation in Europe provides a **series of analytical tools for fragmentation assessment** including a section specifically focused on the implications of that assessment for policy interventions in areas such as traffic and urban planning.

A study[70] on the **economic cost of invasive and non-native species in Ireland and Northern Ireland** shows that ecosystem services have pervasive economic implications (e.g. these services are valued at more than EUR 2.5bn p.a.). Although the values presented in this study may not be directly applicable beyond Ireland, its methodological approach constitutes a valuable example. It assesses the economic impact of ecosystem degradation and biodiversity loss caused by invasive species in areas well beyond the usual agriculture, horticulture and fisheries by covering also tourism and recreation; construction, development and infrastructure; transport; utilities; and human health.

67. La Rosa, D. & Privitera, R. (2013)

68. Vandermeulen, V., Verspecht, A., Vermeire, B. *et al.* (2011)

69. EEA (2011)

70. Kelly, J., Tosh, D., Dale, K., and Jackson, A. (2013)

6.5 SUMMARY: PRACTICAL RECOMMENDATIONS AND FURTHER RESOURCES

PRACTICAL RECOMMENDATIONS FOR INFORMATION AND SUPPORT TO PROJECT DEVELOPMENT

- Focus on **raising awareness when communicating programmes** to stakeholders - explaining that programmes have to consider multi-benefits and translate these considerations to the project level.
- Ensure **constraints affecting specific groups of applicants** are duly taken into consideration in the **project commissioning system** (e.g. administrative and auditing requirements, financing conditions, etc.).
- If applicable, build **screening requirements** into the process so that **proposal-improving feedback** can be provided early in the process.
- Provide **training sessions for project applicants** to learn more about how to assess multi-benefits that potentially stem from their projects.
- Provide **specialised expertise** to project developers for incorporating a multi-benefit approach.
- Provide **web-based guidance** and resources for applicants.

FURTHER RESOURCES FOR INFORMATION AND SUPPORT TO PROJECT DEVELOPMENT

See the GRDP project's *Greening Projects for Growth and Jobs* guidance, Chapter 4 on 'Greening the Programme Operational System' which provides more details, based on good practice across the EU. Ch. 6 pp. 46 – 52 provides more details on support for project developers, based on good practice across the EU. Annex II of the same report (p. 58 ff.) includes a checklist of project's environmental aspects.

7. PROJECT ELIGIBILITY, APPRAISAL AND SELECTION

When reviewing and selecting projects for funding, Managing Authorities can play a decisive role in fostering interventions that recognise and appropriately use nature as a valuable asset and help meet policy objectives in other areas.

Project appraisal and selection methods depend on the type of programme or call. In some cases projects are ranked against each other and the best ones selected; in others a pre-designated project concept and beneficiary is evaluated in detail. In all cases there are opportunities at this stage to ensure that projects seek to identify and maximise the multi-benefits related to nature.

7.1 SETTING MINIMUM REQUIREMENTS: ELIGIBILITY CRITERIA

Eligibility criteria can rule out projects that do not meet minimum sustainability criteria. They can also ensure that projects that consider nature and biodiversity as positive contributions to project objectives are selected. Eligibility criteria are basic standards that all projects must meet to be considered for funding. They therefore must be balanced and reasonable, so that they are effective in bringing about relevant projects without being overly restrictive.

Clearly minimum legal standards, such as the development of Environmental Impact Assessments (EIA) or Appropriate Assessments (AAs) where required and keeping with other environmental laws and standards must be part of the eligibility criteria for any projects to be considered for Cohesion Policy funding. However, there are a number of other ways in which basic principles that support the mainstreaming of nature and biodiversity into projects can be addressed through minimum requirements, depending on the programme context. These include:

- Integration of the principle of sustainable development (Article 8 of the CPR) and consistency with specific relevant overarching priorities or regional objectives, such as specific environmental/nature conservation strategies; or more general goals such as resource efficiency, climate change adaptation strategies, low carbon economy, etc. Where appropriate, these may be evidenced by specific project aspects:
  - reduced maintenance costs of infrastructure in the long-term (even zero maintenance costs in the case of self-regulated green infrastructure formations).
  - reduced energy consumption (e.g. biodiversity-friendly light fittings).
  - enhanced cost-effectiveness of public spending.
  - removal of negative externalities (e.g. by halting biodiversity loss).
- Involvement of key environmental stakeholders in either project development (e.g. through consultation or actual project participation) including NGOs, experts or other relevant groups.
- Assurance that no (net) negative impacts will be incurred by the natural environment and biodiversity. This may go beyond existing legal

requirements, such as the avoidance of any development in a Natura 2000 site, or the offsetting of negative impacts to the extent possible.

- Presentation of a range of alternative options, especially for projects where biodiversity site or habitats of value may be adversely affected. This allows for the most harmful projects to be either disregarded or redesigned, thereby ensuring a minimum level of 'biodiversity proofing'. This is especially relevant for transport infrastructure development projects.

The box below contains selected examples of eligibility criteria proposed by the Welsh European Funding Office (WEFO) to maximise a project's quality and environmental sustainability.

APPROACHES TO ELIGIBILITY CRITERIA IN WALES AND CATALONIA

The Welsh European Funding Office has published guidance material for the integration of the horizontal principle of sustainable development. The guidance on 'Environment for Growth' advocates actions that: combine environmental and socioeconomic objectives; enhance and improve the attractiveness of existing (or the development of new) natural and manmade facilities; and develop the potential for sustainable recreation and economic activity linked to the natural environment.

To maintain flexibility, WEFO states that 'certain actions may be considered eligibility issues and will be labelled as such' and, if an action is deemed not applicable to the project, 'the reasons why must be recorded'.

Within the Welsh OP, the Communities and Nature (CAN) project, which supports local development activities through grants, developed specific criteria to ensure projects would be biodiversity-'proofed' and contribute to more sustainable development, as follows:

- No funded activities should negatively impact on Natura 2000 designated sites.
- Any new buildings must meet Building Research Establishment Environmental Assessment Method (BREEAM) excellent standard as a minimum and have 10% recycled materials.

The programme follows up on environmental compliance as part of due diligence checks prior to receipt of funds.

In Catalonia, Spain, the regional environmental authority has produced a document that specifies requirements to which applicants for funding from the regional OP must comply in order to contain or remove possible negative impacts on the environment, related to specific categories of expenditure. These must be accounted for in addition to the EIA required by national legislation.

7.2 SELECTING THE RIGHT PROJECTS

Appraisal and selection mechanisms can ensure that the whole range of major socio-economic impacts associated with nature and biodiversity are duly taken into account in selected projects. This includes both criteria and the selection process itself.

7.2.1 FORMULATION OF PROJECT APPRAISAL CRITERIA

Appraisal criteria have a dual function. First, they send a message to project proponents about how projects will be reviewed and scored; thereby guiding them on what to include and how to formulate applications. Second, they form the basis of a transparent project review and selection process that helps to ensure the funded projects clearly contribute to programme objectives and development needs. In other words, they help ensure consistency with the strategic priorities and, therefore, with the funding opportunities

defined in Operational Programmes (see sections 5.1 and 5.2).

The development of appraisal criteria is therefore an important chance for Managing Authorities to encourage project proponents to demonstrate a robust methodological approach to maximising a project's environmental, social and economic benefits. It also encourages the consideration of multi-benefit objectives be shown at this stage of project preparation. In the same vein, where relevant sustainability-oriented considerations have been included in public procurement provisions, these should be translated into appraisal criteria.

When formulating appraisal criteria, Managing Authorities should be certain that a clear message is sent to project developers: *projects that systematically identify multi-benefits associated with biodiversity and ecosystem services and seek to maximise them stand better chances of obtaining Cohesion Policy funding*. For this purpose appraisal criteria should clearly reflect the identification and maximisation of multi-benefits associated with nature as a key priority; and should give them sufficient weight in the appraisal process itself. Some suggestions for appraisal criteria that can be used to promote the integration of nature and ecosystem services, and maximise the associated benefits are provided in the below. At the same time however, it needs to be stressed that in some cases, dedicated investment in nature/biodiversity should be stimulated even if no additional (economic or social) benefits are generated. They are justified on the ground of contributing to pure environmental/biodiversity objectives, in relation to the 2020 Biodiversity targets or the implementation of the Natura 2000 network.

SAMPLE APPRAISAL CRITERIA

- Are the project's implications for biodiversity, ecosystem services and the green infrastructure maintaining them being considered, including possible synergies and trade offs? Are both synergies and potential trade-offs considered? Do the implications adequately cover local, regional, national and international/global perspectives? Are suitable indicators used, including ecosystem service indicators and a mix of indicators for the four capitals (environment, economic, social and human capitals) so as to get a sufficiently in-depth and broad understanding of the inter-relationships?
- (If applicable) Does the project proposal comply with relevant public procurement provisions for sustainability? Does it take on board whole life costing (WLC) as part of procurement evaluation?
- Has a clear and comprehensive strategy been developed to identify the socioeconomic benefits associated with biodiversity, ecosystem services and green infrastructure?
- Do project developers or their partners produce evidence of relevant knowledge to identify and maximise socioeconomic benefits associated with biodiversity and ecosystem services?
- Has a detailed assessment of expected socioeconomic benefits associated with biodiversity, ecosystem services and green infrastructure been carried out? Are the key winners and losers from the project being addressed in the assessment?
- Has a detailed assessment of possible trade-offs between conservation goals and enhancement of ecosystem services been carried out, to prevent any negative impacts on biodiversity? Are the results taken into account in the project design?
- Is monitoring of results in terms of socioeconomic benefits associated with biodiversity, ecosystem services and green infrastructure foreseen?

As discussed in the case study on Wales, one of the ways pursuing environmental objectives can contribute to other socioeconomic goals is by enhancing the attractiveness of a given territory. The WEFO outlines scoring criteria to 'maximise the sustainable economic benefits, utilising Wales' natural capital, by increasing the volume, length and value of visitation'. It also provides instructions on how to approach scoring. These criteria were prepared by an independent project selection board (see box below for more details).

7.2.2 ENHANCING MULTI BENEFIT INVESTMENTS IN THE PROJECT SELECTION PROCESS

The project selection process should be a transparent one, and a well-formulated set of criteria and scoring process is very important for this. As discussed above, scoring mechanisms should reward project proposals that identify multi-benefits associated with nature and biodiversity. Nevertheless, the review and appraisal of project applications will have a degree of subjectivity to it. For this reason it is important that appraisal and selection committees include the necessary expertise on biodiversity and ecosystem services, as well as a general understanding of the long-term socio-economic benefits they bring.

Specific training for Managing Authority staff as well as outside experts involved in project appraisal may be required to ensure the necessary level of skills and knowledge, particularly as expert contributions to the appraisal process may include technical elements. Project appraisal guidelines for specific project categories may also be valuable. See the box below for examples of how this has been done.

EXAMPLES OF RELEVANT EXPERTISE IN THE APPRAISAL PROCESS

Catalonia OP, Spain: The presence of nature conservation experts in the Selection Committee was ensured through the appointment of a permanent representative from the authorities in charge of the environment and related issues. Environmental authorities also participate in the Evaluation Committee through written submissions.

DANUBEPARKS (see case study in the annex): An assessment tool to keep the number of visitors sustainable will be developed and tested to help to solve potential conflicts of interest between nature conservation and tourism development.

CAN Project, Wales (see case study in the annex): The CAN Project Board advertised externally for members of an independent Project Selection Board with the delegated powers to assess and prioritise applications received and to make recommendations for funding. The CAN Selection Board also defined a set of formal selection criteria against which all applications were assessed.

Even in the presence of relevant expert and stakeholder support and expertise, methodological challenges apply that can undermine efforts to appropriately assess socio-economic benefits linked to biodiversity and ecosystem services. Key benefits may be overlooked or underestimated as a result. Managing Authorities should help disseminate existing evidence and promote its use in the applicable context through collaborative action. Managing Authorities should take all necessary steps to ensure a systematic use of relevant expertise regarding the assessment of socioeconomic benefits associated to nature and biodiversity, while applying existing evidence wherever possible. They should also use well-adapted criteria to 'lock-in' the need to evaluate and maximise those benefits as a priority in the project appraisal and selection process.

7.3 SUMMARY: PRACTICAL RECOMMENDATIONS AND FURTHER RESOURCES

PRACTICAL RECOMMENDATIONS FOR PROJECT ELIGIBILITY, APPRAISAL AND SELECTION

The main goal is to give appropriate priority to **project applications that consider benefits from biodiversity and ecosystem services**

- **Ensure a robust project appraisal criteria and scoring system that** effectively prioritise projects that address multi-benefits associated with nature and biodiversity. They should reflect the importance of developing and incorporating a multi-benefit approach to project design and project implementation.
- Consider whether environmental requirements in **public procurement regulations** apply and can be inserted in appraisal criteria.
- **As part of the project appraisal process**, understand and assess how potential benefits associated to biodiversity and ecosystem services can be taken into account. Involving **external experts** and stakeholders directly in evaluation bodies and/or educational support for managing authorities is needed to address this issue. **Appraisal guidelines** for different project types can help.

FURTHER RESOURCES FOR PROJECT ELIGIBILITY, APPRAISAL AND SELECTION

See the GRDP project's *Greening Projects for Growth* and Jobs guidance, Ch. 5.3 pp. 40-43, which provides more details on good practice for project evaluation and selection.

8. IMPLEMENTATION, MONITORING AND EVALUATION

A key task for Managing Authorities at the project implementation stage is to provide on-going support to project beneficiaries. Monitoring and reporting on programme and project implementation and results is a challenging yet critical aspect that needs to be embedded in project design, particularly through indicator-related work. Available assessment tools and research regarding the linkages between natural and capital assets, and socio-economic factors are evolving. Thus it is also the role of Managing Authorities to follow up on their progress to ensure reliable monitoring and evaluation. Moreover, as in the previous stages of the project cycle, Managing Authorities should encourage the development of multi-stakeholder approaches to project delivery, monitoring and evaluation, as this can help ensure that multi-benefits associated with nature are effectively identified and capitalised upon. In addition to better project outcomes, broad stakeholder involvement, notably in the case of green infrastructure-related projects, can be a catalyst for broader socio-economic regeneration and community ownership, while stimulating investment and fostering job creation.[71]

In those areas in which community empowerment is a driving force to motivate local people for conservation efforts, access to knowledge and financial resources are basic requirements for the community to translate their acquired knowledge and skills into practices that lead to nature conservation. Community-led local development initiatives (CLLD) aim to strengthen the community's capacity for conservation, use and sustainable management of local biodiversity with a blend of traditional and scientific knowledge systems. Leadership by the local level institution in setting the research and project development agenda is encouraged. The processes for implementing these initiatives can include community level benchmark studies of biodiversity; enhancement of community skills, knowledge and engagement; community-based land and sea management; and traditional knowledge recording. Long-term benefits include increased community-based approaches to sustainable development and management of other natural resources in partnership with the government.

Managing Authorities should make use of available funding for technical assistance to strengthen their evaluation capabilities with regard to multi-benefits associated to nature and biodiversity. Technical assistance funding can also be used to make expertise available to project beneficiaries during project implementation.

The box below presents examples of fruitful stakeholder cooperation in this regard. Further details on the importance of involving a broad range of stakeholders throughout the project cycle for successful project outcomes can be found in sections 6 (knowledge and expertise needs) and 7 (eligibility criteria).

EXAMPLES OF STAKEHOLDER INVOLVEMENT AND COOPERATION AT THE PROJECT DEVELOPMENT AND IMPLEMENTATION STAGES

DANUBEPARKS (see case study in the annex): This project is an example of cooperation between participating protected area administrations. This cooperation has ensured effective development, communication and uptake of results, leading to further follow-up projects and cooperation between the areas on different themes. The DANUBEPARKS network has also fostered formal cooperation with a number of key regional partners such as the International Commission for the Protection of the Danube River (ICPDR), the Network of Danube Waterway Administrations (NEWADA) and the Danube Competence Centre (CDD).

Nummela, Finland (see case study in the annex): This project is the result of a partnership created between researchers and a local association for water protection.

Infrastructure and Environment OP, Poland (see case study in the annex): Broad stakeholder participation was required in a project to promote and support ecologically sound water retention methods. This was necessary to access sources of funding, rationalise and mainstream existing small-scale actions covering 178 forest districts, and ensure support for the project at the local level.

71. Landscape Institute (2013)

Alpine Carpathian Corridor Austria-Slovakia (see case study in the annex): There is strong cooperation between regional authorities, NGOs, universities, motorway companies and national park authorities. An advisory board composed of stakeholders and independent experts as well as a steering group with representatives of relevant (regional) governments provide inputs on a regular basis that can be used for monitoring purposes.

Green corridors contracts project, Rhone-Alpes, France (see case study in the annex): Contracts are drawn up through a permanent dialogue between the services of the State, the towns involved, associations and local stakeholders. This approach contributes to underline the role of local governance in fostering dialogue and cooperation. Furthermore, the large number of stakeholders involved in this process enables the development of interregional and supra-regional partnerships.

8.1 APPLYING INDICATORS, MILESTONES AND TARGETS

The Common Provision Regulation aims to improve the performance of EU spending. The Commission foresees two consecutive performance reviews, in 2017 and 2019 respectively, which would assess performance against the preliminary established milestones for inter alia biodiversity among others in a 'performance framework' (Article 19). The latter shall be determined in each Operational Programme. Based on the 2019 review, a performance reserve (5 per cent of the resources allocated to each CSF Fund and Member States) will be awarded to the best performing Member States or funds may be suspended in the case of failing to achieve the established milestones (Article 20). A set of 'common indicators' proposed by the Commission in the Annexes of the fund-specific Regulations, should be accompanied by programme-specific indicators and used in the context of the performance framework. An attempt is made to move away from output-based to more result-based indicators. These include a number of indicators for biodiversity, soil, greenhouse gas emissions, energy, environmental infrastructure and risk prevention.[72]

Working within this required framework, there are many opportunities to ensure that nature conservation and ecosystem services are integrated into programme implementation within the programmes over their seven years of implementation.

Each priority axis will need indicators. Output indicators relate to project outputs; and result indicators should show how overall project results contribute to the objective set out in the spending priority. Where there is direct spending on biodiversity, it will be important to have indicators that effectively illustrate successes. It is a greater challenge to develop indicators that assess indirect objectives, such as the associated multi-benefits aspects. However, where important nature conservation and ecosystem services goals have been successfully inserted into funding priorities, they should be backed up with relevant indicators. These will be essential for project preparation, implementation and the programme monitoring and evaluation stages.

The proposed regulations for 2014-2020 place greater emphasis on the use of common indicators across the Member States, and on monitoring for results. A number of general indicators for each policy field or sector are given in the fund-specific regulations; the ERDF regulation specifies one indicator for nature and biodiversity, under the Environment category.

Proposed common indicators for measuring progress on risk prevention and management in the proposed ERDF regulation for 2014-2020

	UNIT	NAME
Nature and biodiversity	Hectares	Surface area of habitats in better conservation status

SOURCE: Proposal for specific provisions regulation on the ERDF, EC COM(2011) 614 final, Annex p20

72. See Annexes to proposed Regulation on ERDF and Cohesion Fund

This proposed indicator is a good start. However, it does not capture any potential associated multi-benefits and it does not track whether and how programmes and/or projects have considered biodiversity risks and considered ways to mitigate them. Additional indicators will need to be developed to capture relevant results related to biodiversity and nature.

Further examples of indicators covering nature conservation and ecosystem services, from selected 2007-2013 Operational Programmes are contained in the table below.

Examples of indicators for biodiversity in Operational Programmes (2007-2013)

OPERATIONAL PROGRAMME	INDICATOR	TARGET/BASELINE
Poland **OP Environment and Infrastructure**	Number of completed projects in the field of education or promotion of ecological attitudes (numbers)	0 in 2007 Expected in 2013: 20
	Time of identification and response to risks on the national level (hours)	0 in 2007 Expected in 2013: 150
	Number of completed projects aimed at protection of Natura 2000 areas (number)	0 in 2007 Expected in 2013: 50
	Total surface of areas, in which protection of the proper condition of ecosystem has been restored or guaranteed (ha)	0 in 2007 Expected in 2013: 1.550
	Number of species covered by protection or reintroduction programme (number)	0 in 2007 Expected in 2013: 8
	Number of developed protection programmes (number)	0 in 2007 Expected in 2013: 100
Spain **OP ERDF of the Region of Murcia**	Actions in Natura 2000 areas (numbers)	Expected in 2010: 60 Expected in 2013: 80
	Activities carried out in Natura 2000 areas (number)	Expected in 2010: 4 Expected in 2013: 11
	Affected area beyond Natura 2000 Network areas (hectares)	Expected in 2010: 330 Expected in 2013: 1 000
	Supply networks created (kilometers)	Expected in 2010: 10,8 Expected in 2013: 36
	Number of resource centers, classrooms, nature, etc. that incorporate measures to promote accessibility (number)	Expected in 2010: 2 Expected in 2013: 4
	Recovered surface and / or defended (hectares)	Expected in 2010: 33 Expected in 2013: 100
	Protected areas with Management Plans (hectares)	38.106 in 2007 Expected in 2010: 126.018 Expected in 2013: 263.531,67
Czech Republic **OP Environment**	Acreage of revitalized areas (hectares)	0 in 2007 Expected in 2013: 1.000

Proportion of the Czech sites of Community importance prepared to be declared as SPAs or for contractual protection, of the total number of Czech sites of Community importance placed on the European list (percentage)	0 in 2007 Expected in 2013: 80
Recovery of stable landscape water regime and of elements of ecological stability (number)	0 in 2007 Expected in 2013: 15
Number of projects being focused on improving the nature and landscape condition (number)	0 in 2007 Expected in 2013: 150

SOURCE: Author's compilation from relevant programming documents

Successful monitoring implies sound integration of the multi-benefit approach into the indicators and milestones developed at the programming stage and set out clearly in the Operational Programmes. This will have increased importance in the 2014-2020 period, when evaluation will become more focused on the actual results and impacts of Cohesion Policy programmes and projects[73]. As discussed in section 5 of this Guide, Managing Authorities should therefore facilitate the integration of the socioeconomic benefits linked to nature into this new performance framework.

From a project level perspective, a key challenge in this regard comes from the fact that indirect benefits are hard to track and measure. Therefore, relevant indicators may not be straightforward to develop. As discussed in the previous section, limited data availability enabling the assessment of sometimes rather intangible benefits is another obstacle. Managing Authorities should therefore attempt to make as much use as possible of relevant good practices regarding the valuation of socioeconomic benefits linked to nature or, alternatively, concerning the use of qualitative assessment methodologies when straightforward quantification or monetisation are not possible. They should also make these examples available to project developers in a timely manner.

Managing Authorities should therefore keep abreast of methodological developments that are relevant to mainstream consideration of nature throughout the project cycle, particularly at the monitoring and implementation stages. In this sense, the box below contains an illustrative list of indicators for monitoring the status of and benefits from ecosystem services (for suggestions on valuation techniques related to benefits from biodiversity and ecosystem services, please refer to section 6.4 of this Guide). These examples should be considered on an indicative basis and fine-tuned to reflect the local specificities applying within the scope of the project.

73. EC (2012d)

EXAMPLES OF ECOSYSTEM SERVICES INDICATORS

Sustainable management of ecosystem services depends on a sound understanding of **1)** biophysical functioning of ecosystems that form the foundation for services and **2)** socio-economic importance and value of the services. Consequently, both of these aspects are important to take into consideration when monitoring the impacts and/or outcomes of projects.

EXAMPLES **BIO-PHYSICAL INDICATOR (STATUS / AVAILABILITY)**	EXAMPLES **SOCIO-ECONOMIC INDICATOR (IMPORTANCE / VALUE)**
PROVISIONING SERVICES	
➨ Current actual stock / population size of fish, game, plants etc. affected and/or used ➨ Land area under production of sustainable food – ha, quality and changes ➨ Reproduction rate / status of reproduction (estimated) to secure healthy population levels	➨ (Market) value / value added of catch (sustainable) ➨ Number of jobs / employment / businesses / income
REGULATING SERVICES	
➨ Land area of ecosystems performing regulative functions (e.g. wetland) ➨ Number of / trends in flood, wild fire etc. events per year in region ➨ Current and/or estimated future erosion risk ➨ Current and/or estimated nutrient retention capacity of wetlands ➨ Frequency of pest / disease outbreaks ➨ Current level /status of pollinator populations	➨ Market value of CO_2 tonnes stored per year and funds invested ➨ Value of protective function, i.e. infrastructure / economic activity / human well-being protected by ecosystem-based regulation (real or estimated) ➨ Cost of hydrological infrastructure and of water treatment needed when ecosystems are not functioning ➨ Costs of damage to properties and arable lands in case of floods, if forests are cut or degraded ➨ Cost of erosion protection measures ➨ Cost of pest control when natural balance and conservation measures are not in place (usually in agriculture and mosquito problems in urban areas close to protected areas – cost of spraying) ➨ Cost of fertilisers vs. pollinators ➨ Cost of health problems
CULTURAL SERVICES	
➨ Share of land cover with high cultural, recreation etc. value ➨ Number natural areas (e.g. protected areas) and/or green spaces ➨ Ecological quality of the environment and natural areas	➨ Direct market values, such as the price of tourist services at a given place, or the price tour operators charge, incl. for additional services related to natural attractions ➨ Consumers' willingness to pay for a visit to a certain place or intrinsic value attached to it ➨ Willingness to pay to obtain a house in a given area with natural attractions ➨ Value of income for local communities ➨ Work places open and maintained ➨ Change of level of living standard

SUPPORTING SERVICES

Supporting services form the basis for all other services above. Therefore, at a practical project level the status and value of these services can, to a large extent, be considered to be captured by the previous 3 groups.

For more information see, for example, Kettunen *et al* (2012).

Indicators can be used for different forms of capital, allowing them to be useful tools for measurement and hence governance in the context of Cohesion Policy. They can be (and have been) used to illustrate and assess the nature and scale of trade-offs and synergies and be used in ex ante, interim and ex post assessments of the sustainable development impacts of Cohesion Policy[74]. Furthermore environmental and economic accounts as well as social accounts integrate different indicators of the four capitals. They can produce valuable insights for decision makers at regional and national level as regards status and trends in their regions, needs and opportunities for action as well as help monitor and evaluate impacts of CP programmes.

8.2 MONITORING, REPORTING AND EVALUATION MECHANISMS

Overall, monitoring and reporting follow the performance framework, with its indicators, milestones and targets developed at the programming stage for each priority axis within an Operational Programme.

As in previous stages, relevant expertise on the Managing Authorities' side is necessary; e.g. as part of the Monitoring Committee, which plays an important role in project monitoring and evaluation. Managing Authorities should adopt a systematic approach to monitoring and evaluation through the lifetime of the project, as this can help ensure the alignment between purported objectives and effective results, as well as comparability across relevant initiatives.

The indicators developed at the Programming stage will be used by the Monitoring Committee during the annual review meetings. They will also feed into the annual implementation reports and into progress reports on the implementation of the Partnership Agreement, *ex ante and ex post* evaluations.

As previously discussed, data and information are the backbone of monitoring mechanisms; a solid indicator framework will determine the data requirements as programmes are implemented. Good cooperation between Managing Authorities and the bodies and organisations providing information sources will help to ensure that the right data and information can be collected in the context of a specific project. Managing Authorities should therefore aim to maintain regular contact with project beneficiaries. This is of great importance for efficient monitoring and evaluation, as indicator-related work can prove challenging, due to difficulties for example in the construction of counterfactual scenarios. Furthermore, Managing Authorities will often need to act as intermediaries in beneficiary-expert contacts.

Managing Authorities should define reporting requirements that clearly focus on substantive aspects such as quality and effectiveness in the project implementation process, in addition to the usual financial and administrative components of the reporting procedure. In this respect, Environmental Impact Assessment (EIA) requirements, which in accordance with the EU Directive apply to all projects that can be expected to have significant impact on the environment, are a key instrument to mainstream biodiversity proofing, as well as monitoring of biodiversity-related impacts of Cohesion Policy interventions (including reorienting or redesigning projects with undesirable effects in that regard).

The case study on Nummela, Finland is a good example of how monitoring can be used to support informed decision making and increase political as well as public support for innovative projects that combine environmental and socioeconomic benefits. This case study also illustrates the importance of stakeholder participation in the project delivery process, notably with regard to data and information gathering for monitoring purposes.

74. See Hjerp *et al.* (2011), GHK *et al.* (2005)

8.3 SUMMARY: PRACTICAL RECOMMENDATIONS AND FURTHER RESOURCES

PRACTICAL RECOMMENDATIONS FOR PROJECT IMPLEMENTATION, MONITORING AND EVALUATION

Project implementation is mainly carried out by project beneficiaries. While Managing Authorities need to monitor project implementation. Two main ways in which this can be done are:

- **Providing technical support and advice**: specialised expertise can be made available to project beneficiaries as-needed during project implementation.
- **On-going monitoring**: An informal supervision process that enables feedback and communication between Managing Authority and project beneficiary during the project implementation process.
- The key factors are: having **access to relevant expertise** (internal or external) and integrating the multi-benefit approach to nature and biodiversity into **regular monitoring** and supervision of project implementation.
- Monitoring and evaluation are typically difficult for integration of horizontal concerns into programmes: **Successful monitoring therefore depends upon sound integration of nature, biodiversity and associated multi-benefits into the indicators and milestones developed at the programming stage.**
- Use funds from technical assistance to develop the **necessary indicator systems** which integrates a multi-benefit approach to investment.
- Integrate specific and innovative indicators in the relevant OP's on biodiversity, nature protection, Green Infrastructure and other OP's to monitor impacts on ecosystems.
- The **monitoring committee** plays an important role in monitoring and evaluation. Getting relevant expertise into the committee – through direct membership on the committee, but also access to required external specialist experts - is critical, as is cooperation between managing authorities and information sources for data collection purposes.
- **Stakeholder involvement in project delivery, monitoring and evaluation** is crucial to ensure that multi-benefits from nature and biodiversity are appropriately assessed and maximised.

FURTHER RESOURCES FOR PROJECT IMPLEMENTATION, MONITORING AND EVALUATION

See the GRDP project's *Greening Projects for Growth and Jobs* guidance, Ch. 5.3 pp. 40-43, which provides more details on good practice for project evaluation and selection.

The CEE Bankwatch report on proposed priorities for Cohesion Policy in Hungary – Biodiversity suggests a monitoring programme which is a useful example and transferable to other countries:

http://bankwatch.org/sites/default/files/shadow-HU-biodiversity.pdf

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LIST OF ABBREVIATIONS

AA	Appropriate Assessment
CF	Cohesion Fund
CLLD	Community Led Local Development
CSF	Common Strategic Framework
EAFRD	European Agricultural Fund for Rural Development
EIA	Environmental Impact Asses
EMFF	European Maritime and Fisheries Fund
ERDF	European Regional Development Fund
ESF	European Social Fund
ESI funds	European Structural and Investment funds
ETC	European Territorial Cooperation
GI	Green Infrastructure
ICT	Information and Communications Technologies
ICZM	Integrated Coastal Zone Management
ITI	Integrated Territorial Investment
MCs	Monitoring Committees
MPA	Marine Protected Area
NNL	No Net Loss
OP	Operational Programme
PA	Partnership Agreement or Protected Area
PAF	Prioritised Action Framework
PES	Payment for Ecosystem Services
PM	Particulate Matter
REDD	Reducing Emissions from Deforestation and forest Degradation
RIS3	Research and Innovation Strategies for Smart Specialisation
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SPA	Special Protected Area
SUD	Sustainable Urban Development
SWOT	Strengths, Weakness, Opportunities and Threats analysis
TEEB	The Economics of Ecosystems and Biodiversity
TEN-T	Trans-European Transport Network
WFD	Water Framework Directive
WLC	Whole Life Costing

CASE STUDIES

Annex

DANUBEPARKS

CROSS-BORDER COOPERATION TO ENHANCE THE ENVIRONMENTAL STATUS OF DANUBE RIVER BASIN

Key Message

The integrated ecosystem-based approach to river basin management provides a good framework for establishing multiple benefits for biodiversity and human well-being. Such an approach, facilitating networking and information sharing between stakeholders across national borders, facilitates workable win-win solutions for biodiversity conservation and sustainable socio-economic development while helping to mitigate conflicts with conservation goals and other river uses. Such activities are therefore very suitable to be funded under the EU Cohesion Policy.

Area of focus

Integrated river basin management, recreation and tourism, capacity building and skills development.

Type, size and source of funding

€ 2.7 million for Phase I (2009-2012) and € 2.2 million for Phase II (2012-2014) under the European Territorial Cooperation for South-East Europe (ETC-SEE), priority axis 'Protection and Improvement of the Environment'.

The project and its background

DANUBEPARKS, i.e. the Danube River Network of Protected Areas, was founded in 2007 as a joint transnational initiative which included a number of key protected areas within the Danube River basin. The initiative was prompted by the growing socio-economic demands and associated changes in land use within the basin. The increased pressures and impacts on biodiversity, ecosystems and related ecosystem services were also driving forces. As a response to these challenges, the aim was to establish a basin-wide framework for cross-border cooperation with a view to adopt a more integrated approach to biodiversity conservation within the basin and to help improve the environmental status of the basin.

DANUBEPARKS consist of five thematic elements, addressing both the biophysical status of and socio-economic benefits associated with the basin's ecosystems. The **morphological** element aims to conserve and/or restore natural river dynamics within the basin and, at the same time,find suitable compromises for river navigation. Dedicated efforts are also taken to preserve key habitats and flagship **species** (e.g. White-tailed Eagle, Sturgeon and Black Poplar) within the basin. These conservation and restoration measures are supported by dedicated **monitoring** activities, aimed at building a more solid knowledge base in the status of ecosystems in the area. Finally, building on the elements above, a range of activities were taken to promote sustainable, nature-based **tourism** in the area.

Since its implementation, the DANUBEPARKS initiative has resulted in two consecutive multi-annual projects co-financed by the EU, representing various forms of activities promoted in the context of Cohesion Policy. These activities have included: the elaboration of transnational strategies; the implementation of pilot projects related to conservation and sustainable resource management; and the facilitation of knowledge transfer, awareness raising and partnership building within the river basin.

SOURCE: http://www.danubeparks.org/

Achieved multiple benefits

One of the key socio-economic benefits achieved by DANUBEPARKS has been the systematic promotion of sustainable tourism activities in the region. A common strategy for enhancing tourism, environmental education and regional development within the basin has been developed as a part of the project. In the future, a carrying capacity assessment tool will be developed and tested to help to solve any possible conflicting interests between nature conservation and tourism development. In addition, capacity building has been carried out through training of local stakeholders, including product development (boat excursions, visitor centre and nature trail design etc.), marketing and regional cooperation. Consolidated efforts have also been made to market the areas as a destination for international visitors. For example, plans were made for the development of a joint DANUBEPARKS visitor centre with indoor and outdoor exhibitions.

The project has also played an integral role in finding solutions to balance the competing demands on the Danube River basin, especially conserving the basin's natural heritage while maintaining its role in navigation. In 2011, the DANUBEPARKS Strategy on Conservation and Navigation was adopted to outline approaches and tools available to integrate biodiversity goals into navigation planning and avoid conflicts between Inland Waterway Transport (IWT) development and conservation.

A number of concrete measures have been carried out by DANUBEPARKS to restore the structure and functioning of Danube River ecosystems. For example, attempts have been made to adapt the existing man-made hydraulic structures to be more biodiversity-friendly. Similarly, guidance has been provided to establish common standards for floodplain forest management and restoration (within protected areas) along the Danube River. These activities are aimed at restoring the natural dynamics and/or ecosystems of the river basin; which have contributed to biodiversity conservation and also improved the recreational and tourism value of the basin. In the future, a common River Restoration Action Plan will be developed, detailing the most valuable and necessary restoration sites and actions within the river basin, including three examples of restoration plans.

Key project success factors

Building partnerships: One of the key success factors of the project is that it set up networks which function beyond the lifetime of the project, ensuring continuity and capitalization of project results. This cooperation has led to further follow-up projects and cooperation between the areas on different themes. DANUBEPARKS network has also established formal cooperation with a number of key regional partners including: International Commission for the Protection of the Danube River (ICPDR), Network of Danube Waterway Administrations (NEWADA) and Danube Competence Center (CDD). The partners work together to improve and promote sustainable tourism along the Danube. This broader regional cooperation with different sectoral stakeholders has helped to link the project activities with broader regional development.

Integrated, ecosystem-based management: The approach adopted by DANUBEPARKS has aimed to address conservation challenges across jurisdictional borders and as a part of the broader socio-economic development of the Danube basin. This integrated and ecosystem-based approach has been one of the success factors of the project. It seeks

workable win-win situations for biodiversity conservation and sustainable socio-economic development in the effort to mitigate conflicts with conservation goals and other river uses (i.e. navigation).

Capacity building and skill development: Dedicated efforts have been made during the project to increase the human capital within the Danube River basin. A range of training and capacity building activities have been carried out to further develop and diversify local skills, including training related to services within the tourism sector and skills in environmental monitoring (see above). Several information sources aimed at improving common knowledge (success factors and/or barriers) based on sustainable river basin management have been developed, including lessons learned from restoration practises within the basin. This strong emphasis on capacity building across the river basin will play an important role in ensuring the uptake of project results and insights in the long run. Furthermore, efforts have been made to communicate both the biodiversity values and socio-economic importance of Danube River basin to the broader public. It is foreseen that these systematic outreach activities will help increase support for the conservation and sustainable management of the basin.

Transferability to other areas

The DANUBEPARKS case study provides a good evidence base for exploring the possibilities for integrated transnational river basin management - with associated multiple benefits - also in other areas within the EU.

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Source

http://www.danubeparks.org/

ECOLOGICAL RESTORATION OF COMANA WETLANDS

ROMANIA

Key Message

Wetland restoration can greatly improve biodiversity as well as offer a valuable contribution to environmental education, scientific research and the creation of jobs.

Area of focus

Restoration of wetlands.

Type, size and source of funding

The total budget was €1.9 million, and the ERDF co-financed €1.2 million, and the rest was nationally financed.

The financing was granted under the sectorial Operational Programme Environment, under the Programme Convergence, Priority Axis 4 'Implementation of Adequate Management Systems for Nature Protection'. The key areas of intervention were the development of infrastructure and management plans to protect biodiversity and Natura 2000. The investment priorities were the ecological restoration of habitats, the reinforcement of species populations, and the setting up of the monitoring systems for the Natura 2000 sites and protected areas, including infrastructure and equipment.

The project

Comana wetlands, in Giurgiu County, Romania are part of the Natural Park Comana, included in the ecological network Natura 2000 and listed among the Ramsar Sites. The area is characterised by many important natural habitats and endemic species and it is visited by migratory birds. Approximately two thirds of Romania's bird species can be found in the Comana wetlands. The area is characterised by a richly structured landscape, including reed, lakes, oak forests, and fish farms. It is the third most important wetland in Romania.

Prior to 1990, three fourths of the wetlands were drained to be used for agriculture. This had a significant negative impact on biodiversity.

THE PROJECT DEVELOPER AND STAKEHOLDERS' INVOLVEMENT

The project developer was the Giurgiu County Council, in Romania, in partnership with Comana Local Council and Administration of Comana Natural Park.

The project has the support of local public authorities and business people who have invested in the area. Also, the County Council Giurgiu collaborates with the Local Environmental Protection Agency and land users from the area of Comana wetland restoration.

Comana wetlands were restored between 2009 and 2011, to improve biodiversity and ensure the conservation of natural habitats and wild species of flora and fauna. The area covered by the restoration project was 1,180 hectares. The funded measures were the following:

- Ecological restoration of habitats and reinforcement of species population, through **1)** construction of a dam with sluice on Neajlov River, downstream of Comana Lake, in order to increase the river depth by more than 1.50m, extending the water surface to 490 hectares and maintaining the shallow water area below half a meter; **2)** construction of a fish scale downstream of the dam to avoid aquatic habitat fragmentation and the disruption of the migration route of some fish species.

- Setting up monitoring systems for the Natura 2000 sites and protected areas, including infrastructure and equipment for monitoring the natural habitats and the conservation status of flora and fauna species.

- Construction and improvement of the infrastructure of the national protected areas and Natura 2000 sites (building of visitors and information centres and of information panels, risk management / fire prevention and control etc.).
- Preparation of information and publicity materials to contribute to awareness raising on the issues of protected areas and Natura 2000.

The project is the first wetland restoration and the first example of green infrastructure development in the region.

Achieved multiple benefits

The restoration of the Comana wetlands greatly improved biodiversity in the area. The construction of the dam on the Neajlov River, downstream of Comana Lake, increased the level of water in the floodplain area and has maintained it at a constant level, which has had positive effects on avifauna. New feeding sites for duck and heron species in the area previously occupied by reeds were established. It is estimated that the land available as habitat for bird species was increased by at least 30% and the number of birds increased by at least 5%. Moreover, the improved ecological conditions increased the quality of habitats and hence species richness for fish and invertebrates.

Other benefits include cultural ecosystem services. The park administration organises guided visits for school children and other groups, and thematic seminars and workshops with local authorities and interested local stakeholders.

Also, an ecological research area was established in cooperation with scientific institutions of Bucharest and other nearby cities. The project includes the implementation of the first monitoring system for environmental parameters and bird species in the region.

Twenty new jobs were temporarily created during the construction of the dam. More permanent economic benefits are to be expected from the development of tourism (the restoration of Comana wetlands is attracting an increasing number of tourists, especially during weekends) and from collaboration with scientific institutions in nearby cities.

Strategic procedures and lessons learned

The Giurgiu County Development Strategy for the period 2007 - 2012 established the conservation of natural heritage and biodiversity as one of its objectives, and included the restoration of Comana wetlands as a priority.

The Operational Programme Environment 2007 - 2013 provided a very good opportunity for the implementation of the project. The project was submitted together with representatives of the Comana village hall and the Administration of Comana Natural Park.

The project was also included in the Management Plan and Visit Strategy of the protected area.

Conservation of natural heritage and biodiversity is one of the priorities of the Giurgiu County Development Strategy. In addition, the project is in line with the Regional Development Strategy.

Transferability to other areas

The Comana case shows that restoring wetlands delivers not only improvements in biodiversity and ecosystem services, but also contributes to education, research and the creation of jobs.

To demonstrate the transferability of the approach in new contexts, workshops will be organised to facilitate exchange of experiential knowledge with the administration of similar parks or protected areas in Romania, other countries and research institutions.

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SOURCE. http://www.ramsar.org/cda/en/ramsar-news-archives-2011-romania-two/main/ramsar/1-26-45-489%5e25548_4000_0__

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Source

http://surfnature.ctfc.cat/det_project.php?id=36

http://www.surf-nature.eu/uploads/media/SURF_Romania_example_28032011_01.pdf

NATURESHIP

NATURE CONSERVATION AND WATER PROTECTION PLANNING IN THE BALTIC REGION

Key Message

Integrating ecosystem services in land use planning is capable of providing multiple benefits through improved planning decisions by the use of a GIS tool that welcomes both development and nature conservation. Cohesion Policy investment in tools that improve the assessment and role of ecosystem services can have a knock-on effect that results in improved land use plans considering the multi-benefits from ecosystem services.

Area of focus

Integrated river basin management, recreation and tourism, capacity building and skills development.

Type, size and source of funding

The Natureship project is part of the Central Baltic Interreg IVA Programme and a budget of €1.4 million.

Project background

The coastal zones are of great value, not just in terms of nature and culture but also with regards to recreation. It is therefore important that their current management is carried out in a sustainable manner, so that future generations can also utilise and enjoy them. To succeed in this, knowledge and efficient public planning are crucial.

The project

The objective of the project 'Integrated coastal zone planning and management in the Baltic region' is to facilitate physical planning in the coastal zone and establish new forms of management. The emphasis of the Natureship project is for a novel approach to the planning and management of traditional rural landscapes and selected coastlines. The aim of the project is to create and restore an optimal ecosystem service network based on integrated sustainable coastal planning. The project will also assess how to achieve cost-effective planning and management of traditional rural biotopes in order to enhance public and biodiversity values. The principal purpose of the project has been to develop a GIS model that will facilitate the planning process by the public administration. The model is meant to provide guidance to administrators on regional as well as local levels who for example work with social planning on matters regarding building permits.

Achieved multiple benefits

One objective of Natureship was to make better use of urban meadows through management plans. The aim was to improve access to these meadows for recreational purposes. As part of the project it was found that inhabitants were increasingly interested in the existence of well-maintained green areas, the presence of which were likely to have a positive impact on property prices within their vicinity. Consequently, the presence of green areas has also gained greater importance in how land use plans are prepared.

The GIS tool enabled a hot-spot analysis with the aim to identify the most vulnerable areas and to adapt development

SOURCE. http://www.ymparisto.fi/download.asp?contentid=141261&lan=en

pressures in relation to these. This provided a better understanding of where development needs were more suitable spatially compared to other areas.

Overall the funding available for municipal/local planning is shrinking, therefore the multi-benefits came from using these funds more efficiently. It also enabled local authorities to identify those areas that are most relevant for management plans; the funds could therefore be allocated accordingly. As part of Natureship, fifteen management plans were developed. In developing these management plans it was envisaged that they would increase the attractiveness of the area thus attracting new residents/tax payers to the area. There were also plans to develop a database portal for local residents for their observations of their local environment. This would improve their understanding of ecosystem services and allow for their opinions to influence local land use plans. The improvement of these land use plans would provide socio-economic benefits, as described above.

THE PROJECT DEVELOPER AND STAKEHOLDERS' INVOLVEMENT

Natureship has a total of eleven partners: The Centre for Economic Development, Transport and the Environment in the Southwest of Finland, the University of Turku Department of Geography and Geology, Metsähallitus, Luontopalvelut (Natural Heritage Services) in the cities of Hamina, Raisio and Salo, and the municipality of Vihti, Norrtälje Nature Conservation Foundation, the County Administrative Board of Gotland, Estonian Environmental Board and the University of Tartu. Another key stakeholder is the Stiftung für Umwelt und Natur (a foundation), which owns some of the rewetted areas.

In the case of Natureship the multiple benefits were not quantified but were assessed through the development of a GIS planning tool that aimed at improving planning decisions in terms of their consideration of ecosystem services. The achieved multiple benefits depended on the specific situations in which the model was used.

Decision-makers and other governing bodies in society were constantly confronted with questions regarding costs to society, revenue derived from action programmes, and threats to and the development of the coastal zone and its ecosystems. The aim of the GIS model developed was therefore to ensure that they receive better and more detailed knowledge regarding ecosystem services. Based on the existing maps, a GIS model has been produced that illustrates the conservation values and exploitation interests and which strives for sustainable development, welcoming both conservation and development.

Key project lessons learned

Environmentally focused Operational Programme: Overall the funded projects of the Central Baltic Programme are win-wins, reflecting the holistic and proactive objectives that can be funded, and the high proportion of investment under Priority 1 (safe and healthy environment). Most of these projects have a spatial planning component and could be used as a model for the type of objectives that can be used for integrating the environment into land use planning from a territorial cohesion point of view. A contributing factor to the innovative approach to Priority 1 was the considerable input by an Estonian researcher, who had an environmental background and an interest into ecosystem services. Her contribution was significant in developing the Central Baltic Programme. An indication that the quality of a Programme depends largely on the background and expertise of the individuals developing the Programme.

Strategic Environmental Assessment: Interestingly the Operational Programme for the Central Baltic Interreg IVA Programme includes an Annex on how the SEA has been taken into consideration in the decision-making/development of the Programme. Normally this tends to be a broad general statement by those making the decision, however in this case it is a detailed table on how mitigation measures have or have not been incorporated into the Programme. In addition the SEA attempted to further influence the impacts occurring during the project stage by providing guidelines on project selection criteria.

Land use plans: Land use plans have the potential to better consider the role of ecosystem services and the socio-economic benefits. The GIS tool identifies the most vulnerable areas and this enables to put a priority order on where development needs are more suitable spatially compared to other areas. Overall the funding available for municipal/local planning is shrinking and therefore the multi-benefits come from using these funds better and more efficiently.

Transferability to other areas

The GIS tool and the overall approach are transferable. However, some adaptation might be required to better correspond to the variation of land use plan systems among Member States.

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Source

Natureship (2012), *Integrated planning and management in the Baltic Sea Region - a GIS-model elaborated in Gotland,* 2012:11, http://www.ymparisto.fi/download.asp?contentid=141261&lan=fi

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PEATLAND RESTORATION IN MECKLENBURG-VORPOMMERN

GERMANY

Key Message

Restoring peatlands can lead to low-cost carbon capture and storage, provide multiple ecosystem services, generate income and support biodiversity. Involving the business sector by offering voluntary carbon credits is a way to ensure funding to peatland restoration projects.

Area of focus

Nature-based carbon capture and storage.

Type, size and source of funding

The total cost of the peatland rewetting projects in Mecklenburg-Vorpommern, which were carried out between 2000 and 2008, was € 20 million. The European Agricultural Guidance and Guarantee Fund provided € 15 million and the State of Mecklenburg-Vorpommern €5 million.

The private sector was involved in 2011 through the creation of carbon credits for the voluntary market. The Ministry for Agriculture, Environment and Consumer Protection of Mecklenburg-Vorpommern also contributed to the creation of the MoorFutures programme (see below).

The project

Around 930,000 hectares of peatlands have been drained in Germany for agriculture, 300,000 of which in the area of Mecklenburg-Vorpommern. Peatland drainage causes emissions of around 20 million tonnes of $CO_{2\text{-eq.}}$ per year (Schäfer 2009).

Between 2000 and 2008, a 29,764 hectares area of peatlands was restored in Mecklenburg-Vorpommern, by raising the water level to prevent further oxidation of the peat.

The establishment of the restoration project was facilitated by a reduction in demand for land for cattle ranching and fodder production, as well as by the high costs required to maintain drainage infrastructure and equipment. Moreover, the need for increased water storage was identified as an adaptive strategy to respond to the reduction in precipitation in north-east Germany due to climate change.

One of the biggest rewetting projects in the area is in the 'Grosse Rosin' bog (840 ha), which allowed the rewetted area to become a valuable habitat for rare birds like the white-winged black tern (Chlidonias leucopterus) and the Baillon's crake (Porzana pusilla). Also, white-tailed eagles (Haliaeetus albicilla) and ospreys (Pandion haliaetus) now use the area for

THE PROJECT PROPONEN/DEVELOPER AND STAKEHOLDERS' INVOLVEMENT

The main project developers were the Ministry of Agriculture, Environment and Consumer Protection and the University of Greifswald. The former formulated a peatland restoration strategy (LUV MV 2009), which initiated the peatland restoration and contributed to financing the rewetting projects.

The Ministry for Agriculture, Environment and Consumer Protection of Mecklenburg-Vorpommern also commissioned to the university of Greifswald a study on the economic potential of different land use options and a model of the emission reduction potential of peatlands (the Greenhouse Gas Emission Site Type methodology – GEST (Couwenberg, 2011), which was used to established the MoorFuture Programme. Also, it financed the dissemination of the MoorFuture project (through the creation of a webpage and the preparation of flyers and brochures). Another key stakeholder is the Stiftung für Umwelt und Natur (a foundation), which owns some of the rewetted areas.

hunting, and more than one thousand cranes use it as their resting place. Many typical wetland plant species started to re-populate the restored area. The project provided a reduction of 14 tonnes of $CO_{2\text{-eq.}}$ emissions per restored hectare (i.e. 11,760 tonnes of $CO_{2\text{-eq.}}$ for the entire area).

In addition, in 2011 the Ministry for Agriculture, Environment and Consumer Protection of Mecklenburg-Vorpommern established a system of carbon credits for the voluntary market, in order to involve the private sector in conservation projects in the area. The carbon credits were called MoorFutures (one MoorFuture corresponds to one tonne of CO_2 per year and costs €35). The first Moorfuture project (Kieve Polder) was started in July 2012, and so far 8,000 MoorFutures were sold in Mecklenburg-Vorpommern in about eight months, financing the restoration of 55 hectares.

The Ministry acts as a guarantor that the projects financed through the MoorFutures will be maintained for at least for a period of 30 or 50 years, depending on the project.

Achieved multiple benefits

Peatland restoration improved biodiversity but it also led to a reduction in emissions of about 300,000 $tCO_{2\text{-eq}}$ per year (on average 10.4 $tCO_{2\text{-eq}}$ /hectares). It has been estimated that the cost of avoided emissions range between € 30 and € 50 per avoided $tCO_{2\text{-eq.}}$ over a period of 30 to 50 years. In addition, additional income can be obtained using the restored peatlands for alternative land uses that do not reduce the carbon stock. Examples are extensive grazing, the production of reed (usable as building material and for biofuel production), sphagnum mosses (which can be used as substrate in horticulture) or alder forests (for the production of high quality furniture).

Other benefits include the improvement of water quality and cultural ecosystem services (the latter due to the increased recreation/tourism potential offered by the restored peatlands).

Strategic procedures and lessons learned

In 2000, the Ministry of Agriculture, the Environment and Consumer Protection of the state of Mecklenburg-Vorpommern formulated a peatland restoration strategy, mainly financed through the state and the EU.

Barriers and Solutions: The cost of restoring peatlands can be high. In Mecklenburg-Vorpommern it was estimated at €5,000 to €9,000 per hectare when land was purchased from farmers (note: when rewetted peatland is public land the cost is obviously lower). Additionally, the cost of forgone income from conventional agriculture is on average € 585 per hectare (2007/8 data) and the foregone subsidies are often higher than € 300 per hectare. However, it must be taken into account that the investment for restoration is only needed once, at the beginning of the project, whereas the emissions costs are avoided annually. Also, the cost per avoided tonne of CO_2 is lower than other options (see above). Another obstacle is the lack of public awareness on the link between climate change and mire conservation. For this reason it is important to improve public knowledge on the role peatlands can play in climate mitigation.

Transferability to other areas

The idea behind MoorFutures was taken up by the state of Brandenburg, which now offers a similar Programme.

The price for peatland restoration depends primarily, on the price of land and the opportunity cost for lost agricultural production (which in turn depends on the market prices for agricultural products and inputs, and on agricultural subsidies). Peatland restoration will be cheaper, and therefore more affordable, in areas with lower land costs and lower opportunity costs.

In general, peatland restoration can offer benefits across many EU Member States (e.g. UK, Ireland, Finland) and also in the European Neighbourhood countries (e.g. Ukraine, Belarus). It is a cost-effective strategy for achieving reduction of CO_2 emissions, while offering a wide range of ecosystem services (e.g. climate adaptation, water quality regulation, improvement of biodiversity, increased tourism potential).

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Webpage of MoorFuture: http://www.moorfutures.de/

SIGMA PLAN II

BELGIUM

Key Message

Investing in ecosystem services can provide a wide range of benefits, including flood protection, the improvement of biodiversity, contribution to climate adaptation, water purification and retention, recreation and cultural ecosystem services.

Area of focus

Investment in green infrastructure; conservation and improvement of ecosystem services and biodiversity; climate adaptation.

Type, size and source of funding

The total cost of the Sigma Plan II over the period 2006-2030 is €469 million (i.e. about €100,000 per hectare), including the costs related to the construction and adaptation of dykes and sluices, land purchase and creation of green infrastructures. The financing is being provided by the Flemish government.

In addition, an investment for flanking policies of €42 million for agricultural projects and €8 million for rural recreation plans is planned (altogether approximately € 10,000 per hectare).

The project

The Sigma Plan II is a long-term strategy to manage flood protection and nature restoration of the Scheldt estuary in Belgium. It followed the Sigma Plan I, which was prepared in 1977 as a response to a disastrous flood in the Belgian Scheldt estuary in 1976. The Sigma Plan II includes a list of 50 projects to be carried out between 2006 and 2030, covering 5,000 hectares over the full length of the Zeeschelde river and its tributaries. The projects aim at flood protection (through a combination of higher dykes with flood plains and wetland restoration) and nature restoration along the Scheldt river and its tributaries. There are two main categories of measures that contribute to both flood safety and nature restoration: the restoration of estuarine processes with muds and marshes and the establishment of wetlands in order to create habitats for species protection.

THE PROJECT DEVELOPER AND STAKEHOLDERS' INVOLVEMENT

The Sigma Plan II was prepared and financed by the Flemish government. The waterway authority Waterwegen en Zeekanaal (W&Z) is leading and coordinating the project and the Nature and Woodlands Agency (ANB) is collaborating with it. The Flemish Land Agency (VLM) assists in developing the supporting agricultural policy. The Spatial Planning, Housing Policy and Built Heritage Department contributes to the spatial translation of the Sigma Plan II. Local governments, agricultural organisations, nature associations, hunters, fishermen, tourism and the hotel and catering industry are also involved in the realisation of the Plan, as the implementation of the projects follows a participation process with all key stakeholder categories.

Every five years, a new batch of Sigma Plan II projects starts. For each project the first step is the identification and selection of a location for flood control. Next, the project is planned by a multidisciplinary team of scientists, economists, sociologists, landscape architects and ecologists, and with the participation of local government administrations, nature associations, hunters, fishermen.

The selection of the projects that were included in the Sigma Plan II was based on a Social Cost-Benefit Analysis (SCBA).

SOURCE: http://www.sigmaplan.be

The SCBA showed that an approach based on improving the natural infrastructure (through a combination of dikes and flood plains) would be cheaper than the construction and maintenance of a storm surge barrier near Antwerp, which was one of the hypotheses that were taken into consideration when preparing the Plan. The cost-benefit analysis took into account the ecosystem services using a contingent valuation approach for the recreational value of new floodplains.

Achieved multiple benefits

The projects included in the Sigma Plan II aimed to significantly improve biodiversity. Ecological rehabilitation targets were defined through scientific research, in order to ensure the reestablishment of the estuary's ecological processes and to improve their organisation, vigour and resistance.

The Sigma Plan II will increase the provision of regulating ecosystem services in the area (i.e. flood protection, nutrient recycling, water purification, carbon sequestration, erosion control), while improving cultural services (it is estimated that the restored areas will receive 150,000 visitors per year).

The SCBA valued the flood protection benefits at €740 million, the recreational benefits at €22 million and the ecological benefits/ecosystem services at €130 million (actualised benefits for the period 2010-2100).

The SCBA demonstrated that the benefits of the Sigma Plan II are higher than the costs.

Strategic procedures and lessons learned

The Sigma Plan II adopted a stepwise strategy. First of all, the Flemish Government defined the areas where flood control needed to be created in a document called The Most Desirable Alternatives. For each project, the details were established through a land use plan, which described how the spatial aspects of an area would be handled. The land use plan was prepared by a multidisciplinary team that included scientists, economists, sociologists, landscape architects and ecologists. It benefitted from inputs from the local government administrations, nature associations, hunters, and fishermen. In this way the objectives and knowledge of a wide range of stakeholders is taken into account, which improves the quality and acceptability of the projects.

Transferability to other areas

The Sigma Plan II adopted a stepwise strategy. First of all, the Flemish Government defined the areas where flood control needed to be created in a document called The Most Desirable Alternatives. For each project, the details were established through a land use plan, which described how the spatial aspects of an area would be handled. The land use plan was prepared by a multidisciplinary team that included scientists, economists, sociologists, landscape architects and ecologists. It benefitted from inputs from the local government administrations, nature associations, hunters, and fishermen. In this way the objectives and knowledge of a wide range of stakeholders is taken into account, which improves the quality and acceptability of the projects.

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CROSS-BORDER GREEN INFRASTRUCTURE

ALPINE-CARPATHIAN CORRIDOR

AUSTRIA, SLOVAKIA

Key Message

The Alpine-Carpathian Corridor (ACC) project is an example of a successfully designed project driven by a coalition of civil society organisations (CSOs) supported by regional authorities. Driven by the common goal of developing a coherent long-term strategy, the CSOs successfully identified and implemented a range of measures necessary to preserve the ecological integrity of the cross-border region (and associated economic potential in sectors like tourism, cycling, hiking and hunting).

Area of focus

Green infrastructure, urban/regional planning and development, transport, tourism, nature protection, ecological connectivity.

Type, size and source of funding

The overall budget of the project was around €1.75 million. The project started under the European Territorial Cooperation Objective of the ERDF. The project was in line with funding opportunities offered by the Cross-border Cooperation Programme Slovakia-Austria which set out objetcives for biodiversity and nature protection. In addition to ERDF, which contributed about €1.65 million, co-funding was also provided by the Austian Federal Ministry of Agriculture, Forestry, Environment and Water Management; the Department of Spatial Planning and Regional Policy of Lower Austria; the Department of Nature Protection of Lower Austria; Regional Management Burgenland; and national co-financing in Slovakia.

Project background

Both the Alps and the Carpathian mountain ranges are important habitats for wildlife. The wild animal population's genetic diversity between these two biodiversity nodes along the traditional migration route of the Alpine-Carpathian Corridor is hindered by the expanding traffic infrastructure and areas of intensifying land use (built-up areas and agricultural intensification). In 2001, the University of Natural Resources and Applied Life Sciences (BOKU), on behalf of the Austrian Federal Ministry for Traffic, Innovation and Technology (BMVIT), carried out a first examination of the barriers within the national motorway network and wildlife corridors. A broad partnership was afterwards formed between Austrian and Slovakian organisations which joined forces to build and preserve a coherent green corridor from the Alps to the Carpathians and identified key actions to re-establish and maintain the Corridor in a feasibility study conducted under the lead of WWF and supported by the United Nations Environment Programme (UNEP) Vienna Office. The support of the provincial government of Lower Austria was instrumental to secure funds from ERDF to help do a range of exemplary measures and produce a precise action plan for other measures to be carried out. The three year cross-border and cross-sectoral project started in December 2008 and ended in December 2012 (Naumann et al., 2011). There has been a follow up to the project until December 2013 as not all money was spent until December 2012 despite all planned measures having been implemented by that date. Thus, in the context of the follow up project, a range of measures included in the action plan that was developed through the project will be implemented.

SOURCE. www.carpathianconvention.org/tl_files/carpathiancon/Downloads/03%20Meetings%20and%20Events/Implementation%20Committee/20121205-07_CCIC_Meeting_Vienna/Presentations/AKK_project.pdf

The project

The project aimed to help construct and preserve a coherent 120 km Corridor from the Alps to the Carpathians. Implementation measures carried out within the framework of this cross-border project included the planning of 'green bridges' over highways as well the creation of suitable habitat patches or stepping stones within the corridor, routing along existing bikeways, development (by project partners) and signing (by political leaders and other stakeholders) of a joint Memorandum of Understanding (MoU) facilitated by UNEP Vienna – Interim Secretariat of the Carpathian Convention for the protection of the Alpine-Carpathian Corridor, related public awareness campaigns and environmental education.

Achieved multiple benefits

Outputs of the project included: a joint final conference on 4 December 2012, the opening of the cycling trail along the Corridor, the elaboration and signing of the Strategic Action Plan/Memorandum of Understanding, the construction of a green bridge in Austria (still under construction as of mid-2013) and securing of financing for a green bridge in Slovakia. Benefits for biodiversity inside and outside protected areas in the region include the improvement of habitat-structure and migratory routes. The project helps to reduce impacts from future developments on the Corridor due to the information outputs of the project (e.g. detailed Corridor models for bottlenecks) that should provide a basis for better informed spatial planning in the future and allow a more effective use of planning tools such as EIA. No quantified estimates of socio-economic benefits are available for the Alpine Carpathian Corridor although the quantified estimates could have included recreational visitor numbers (ecotourism benefits) and provision of recreational area (e.g. bike path). Environmental education and communication involved lessons for about 1,400 students (elementary school) (in SK and AT) and a seminar for 84 teachers within the ACC region.

Key project lessons learned/success factors

Facilitating the emergence of projects through the provision of adequate financing options: A clearly identified barrier to the implementation of this kind of project is the lack of stability in financial flows. The absence of pre-financing in some EU funding schemes makes it difficult for small NGOs to lead projects or even participate without the cooperation of and pre-financing from a source such as the national government. The Regional Government of Lower Austria thus assumed this lead role and supplied up to 50% of the needed pre-financing when needed. As this instrument does not exist in Slovakia, it was necessary to find independent sources of funding (e.g. solicit bank loans) to ensure a stable financial flow. In addition, a strategic selection of the project's lead partner was required in order to ensure sufficient financing for the smaller project partners during the waiting periods of reimbursement. There will not always be project partners suitable to play such a lead role, which underlines the importance of making clear information available to NGOs or potentially even raising awareness/building capacity among local NGOs in order to help them develop projects that may be funded under the Programmes in place.

Building partnerships for the future: The participative approach to managing this green infrastructure project, although adding complexity, proved worthwhile: while the regional government was in charge, there was strong cooperation with NGOs, universities, motorway companies and national parks; input was provided by an advisory board of stakeholders and independent experts as well as a steering group with representatives of the most important (regional) governments.

This has allowed for a very good exchange and co-ordination as the effective delivery of the project required that different stakeholders with very different backgrounds work together towards achieving the same aim.

Increasing awareness that will help deliver objectives beyond the project's duration: Actors in nature protection and regional development are very aware of the undermined ecological connectivity in the region and the funding opportunities in ERDF Programmes (in Cross-border Cooperation Programmes). The information and support for applicants in the context of the Cross-border Cooperation Programme Slovakia-Austria was very good. The level of awareness as regards the need for ecological connectivity for biodiversity conservation within the political sphere was also sufficient to ensure political support to the project. Given the more limited awareness of the general public with regards to the challenges for biodiversity, information dissemination was an important component of the project. The project kick-off in the region included an invitation to all local players, the development of a bilingual homepage, and the preparation of articles on the project. Furthermore, there were efforts tailored to specific groups, flyers with information sent to involved communities, education programmes in schools, and guide-education in the protected areas.

Long term sustainability through concluded joint Memorandum of Understanding and awareness on various levels: The elaboration and signature of the joint MoU between the Slovak and Austrian national and regional authorities, and leading motorway companies (ASFINAG and NDS) established a framework for future cooperation on transport and infrastructure, agriculture and nature protection, and spatial planning. Moreover by including specific commitments by these stakeholders, the long-term sustainability of the project was ensured. Throughout this MoU and the demonstrated commitment by political leaders, the project has gained significant attention at the EU and global levels, inspiring similar action/approaches in other regions. The project has been recognised as a flagship project in the context of the EU Strategy for the Danube Region as well as is included as a flagship project in the UNEP Annual Report 2012. In addition to this, the project has received several awards and was amongst the 5 finalists of the RegioStars Awards 2012.

Transferability to other areas

The project can therefore serve as an important source of inspiration for similar bilateral projects not only in other parts of the Carpathian region but also other cross-border regions across Europe where ecological coherence of the wider landscape needs to be preserved. Developing a follow-up project to continue to implement the MoU and Strategic Action Plan is also planned and should be eligible for funding under the 2014-2020 funding period.

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GREEN CORRIDORS CONTRACTS PROJECT IN THE RHÔNE-ALPES REGION

FRANCE

Key Message

This project was designed to ensure the optimal use of the Funds for activities that would generate capacity, tools and awareness required for long-term investment in the region's natural capital. In particular, it was designed to ensure that the needs of local stakeholders were taken into account and strong partnerships, which are key to ensuring effective mainstreaming of biodiversity objectives, were developed.

Area of focus

Green infrastructure, biodiversity, sustainable development, tourism, agriculture.

Type, size and source of funding

Total of € 18.8 million of which € 7.1 million is from ERDF. As of 2012, the Rhône-Alpes region had spent 35% of the available funds for the 2007-2013 period.

Project background

The natural heritage and biodiversity of the Rhône-Alpes region is threatened today by increased human activity which is the main cause of environmental degradation and pressure on biodiversity. In particular an acceleration of urban sprawl leads to increasing fragmentation of the natural environment by different types of infrastructure. In order to facilitate the movement of wildlife and preserve the rich local biological network, the region has adopted a strategy, the 'Regional Scheme of Ecological Coherence' (SRCE) to preserve and restore a series of 'Green Corridors' on its territory. The development of such regional schemes is a requirement established in the country's revised nature protection laws which applies to all regions. The ERFD provided the means to develop new operational and financial tools to fund projects to connect or re-connect different natural core areas in order to preserve the ecological continuity of the region.

The project

The 'Green Corridor Contracts' were agreed upon on the basis of a detailed action programme that is planned for a 5 year-period. A contractual document specifies the technical and financial commitments of the region, the organisation that is overall responsible for the contract, those responsible for implementing the actions, and other funders. The region's financial contribution on average covers about 50% of the project's cost and the grant finance may not exceed €1 million per contract.

The objectives of these Contracts are twofold: the restoration of corridors, ensuring their sustainability, and the improvement of knowledge on species and their habitat. They also encourage 'green' agricultural practices to protect biodiversity and counter obstacles to biodiversity continuity. The Contracts play a key role in the sustainable development of the region by mainstreaming biodiversity issues into all policies (urban, agricultural, etc.), fostering awareness-raising on the long term objectives, and creating long-lasting infrastructure that preserves the ecological continuity of the region.

The starting point for the process is the mapping of the ecological networks in the region, which forms the working basis for all local players wishing to engage in ecological projects in their areas and ensures they are both participants and beneficiaries of the project.

SOURCE. http://www.nrg4sd.org/sites/default/files/default/files/content/public/news/EGM/rhone_alpes.pdf

As of 2012, five Contracts had been agreed upon (covering 5% of the Rhône-Alpes region) and four others were in preparation, of which one is a cross-border Contract with Switzerland.

Each Contract is based on a detailed action programme, developed over a 5-year period, which identifies a leading partner and a provisional budget for each action. The region sets out its overall financial allocation to each objective of the Contract. The project is organised around 4 main types of actions: inclusion in regulatory instruments, restoration work, scientific monitoring and local governance.

Achieved multiple benefits

One of the objectives of the project was to take into account the services delivered by ecosystems sustaining livelihoods and jobs, economic activities, leisure activities and environmental education as well as their contribution to the improvement of quality of life and public health (reduction of pesticides in soils, water and agricultural products) and road safety (fewer collisions with wild animals).

The Contracts resulted in: the construction of crossing points for wildlife, the planting of hedgerows, the implementation of agro-environmental measures, the restoration of riverbanks, awareness-raising actions, the management of wetlands, and the acquisition of land by the regional authorities. Finally, the project allowed the mapping of ecological networks in Rhône-Alpes and enabled considerable progress in the understanding and consideration of biodiversity. For example, it has identified :

- 650 areas of conflict between nature and man-made infrastructures;
- 350 obstacles to ecological connectivity; and
- 1,800 weirs.

Moreover, the Contracts have created jobs, with the region financing 50% of the salary of the engineers responsible for their coordination.

Once the financing under the Contracts is absorbed, the cost of the daily functioning of the infrastructures is expected to be relatively small. Management costs should be relatively low and can be assured by local and regional authorities alone.

Key project lessons learned/success factors

Stakeholder involvement: With the ambition of being a leader in the development of a green infrastructure at the regional scale, the Rhône-Alpes region took a long-term perspective and laid down the basis of a new sustainable policy based on new governance principles and the integration of stakeholders in the decision-making processes. The partnership has allowed the stakeholders to develop a real sense of the issues linked to biodiversity conservation in their region. Thanks to

this approach, all stakeholders in the region are at the same time actors and beneficiaries of the project.

The way the Contracts are perceived as a means to reflect the reality of local stakeholders' needs (farmers, local authorities, equipment providers, NGOs, water boards, etc.). Contracts are drawn up through a permanent dialogue between the services of the State, the towns involved, associations and local stakeholders. This approach contributes to underlining the role of local governance in fostering dialogue and cooperation. Besides, the large number of stakeholders involved in this process enables the development of interregional and supra-regional partnerships.

Thus, a key success factor in the project was the development of strong partnerships: the actions are jointly led by local associations, road infrastructure organisations, infrastructure users, land owners, farmers, and local authorities. A total of 71 public partners, 19 associations, and 8 private companies are involved in this elaborate, multidisciplinary approach.

The above also lays the basis for the everyday functioning of green infrastructures after the initial, more important up-front investments supported by EU funding. Thus, while the mapping of the territory and the definition of ecological continuity are quite costly, **this is mainly an up front cost.** EU funding is therefore an important and necessary financial **injection** to a long-term approach aiming not only at changing the infrastructures of the region, but also at fostering awareness and the mainstreaming of biodiversity issues in all policies.

Transferability to other areas

Under a new legislation in France all French regions are expected to develop 'Regional Schemes of Ecological Coherence' (SRCE). This project provides an ideal framework for turning these schemes into practical measures on the ground using co-financing under the ERDF. Other EU regions could optimise this spatial planning if they adopt a similar approach to the one presented in this case study.

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BENEFITS OF GREEN INFRASTRUCTURE

SOCIO-ECONOMIC IMPORTANCE OF CONSTRUCTED URBAN WETLANDS

Nummela, FINLAND

Key Message

Constructed wetlands can help increase biodiversity while at the same time providing ecosystem services such as erosion and flood control, reduction of pollutants in runoff water, and opportunities for recreation and education. Such benefits can be successfully integrated into urban planning and management processes. Supporting the development of urban wetlands with an aim to achieve benefits for both biodiversity and human wellbeing are well suited for funding under the EU Cohesion Policy that promotes resource efficiency (e.g. cost-effective solutions) in risk prevention and management, with a dedicated emphasis on green urban regeneration.

Area of focus

Green infrastructure, nature based water management, green urban regeneration.

Type, size and source of funding

Initial project costs related to the construction of the wetland were around €65,000, of which €40,000 came from Vihti municipality and €25,000 came from the state's regional authority of the Uusimaa Centre for Economic Development, Transport and the Environment (UUDELY). The project has continued with a 2012-2017 joint EU funded project Urban Oases, with a total budget of €3.4 million, to the University of Helsinki Department of Forest Sciences the Municipality of Vihti, the UUDELY, and the Water Protection Association of the River Vantaa and Helsinki Region.

Project background

Land-use changes and management practices (mainly related to agriculture and urban development) within the Lake Enäjärvi watershed (Municipality of Vihti, Uusimaa Region, Southern Finland) have resulted in poor water quality and related adverse impacts such as increased algal blooms and fish mortality. Within the Enäjärvi watershed, a 550 hectare sub-watershed, covering 15% of the entire area, has been particularly affected by intense land-use around the Vihti suburb of Nummela. This has resulted in a significant flow of waste- and runoff water into the lake and/or one of its tributary streams, Kilsoi. Furthermore, land-use practices within the Kilsoi watershed cause rain and snowmelt events to be followed by flashy flows of polluted runoff water into the stream, degrading the stream ecosystem. As a consequence, problems such as erosion, flooding, draught, habitat degradation and low water quality have been common in the area, limiting local people from access to and enjoyment of their surrounding natural environment.

The project

To improve the situation, the existing unsustainable means of disposal of runoff water was examined at the watershed level, seeking solutions through a holistic assessment of watershed processes and dynamics. As a result, new wetlands were created along the heavily degraded stream corridor to compensate for land-use changes within the watershed and to restore lost stream corridor habitats. In addition, a large wetland park named the Nummela Gateway Wetland Park was established at the mouth of the Kilsoi stream. The construction of wetlands was led by the project team and supported by a range of local and regional stakeholders (see below).

SOURCE. http://www.helsinki.fi/urbanoases/Nummela/Prototypes/index_proto.html

Achieved multiple benefits

The results clearly show that the constructed wetlands play a crucial role in regulating the flow of runoff water and improving water quality within the watershed. The Nummela Gateway wetland has successfully reduced sediment loads to Lake Enäjärvi, even during snowmelt runoff in spring when biological activity of wetlands is low. Furthermore, the overall capacity of the wetland to improve water quality increases each year as the vegetation coverage increases and matures. However, weather conditions throughout the hydrological year impact the wetland's overall capacity to clean-up during snowmelt. For example, heavy and eroding rain events in early winter may saturate wetland sediment holding surfaces, resulting in a lower sediment trapping capacity during snowmelt the following spring. Improvements in water quality also contribute to reducing health risks (e.g. toxic algal blooms) and fish mortality in Lake Enäjärvi.

In addition to the water related environmental benefits, the constructed wetland areas have provided a range of recreational and cultural benefits. The areas are a popular destination for everyday recreation (jogging, dog walking etc.) and they also serve educational purposes. A nature trail leads visitors past different types of landscapes, from dry meadows to wetlands, all the way to the lake Enäjärvi shore. Along the trail there are illustrative signs that provide useful information on the site history, watershed characteristics, and site design goals and establishment, as well as the on-site vegetation and fauna.

With regards to biodiversity, wetland vegetation was allowed to self-establish on constructed landforms. This resulted in a rapid establishment of taxonomically rich flora, dominated by native wetland species. The wetlands have become a habitat for threatened amphibian species (frogs and a salamander) and several bird species (e.g. mallard, goldeneye, teal, nightingale and willow warbler). Numerous insect species also inhabit the wetlands and the Gateway Wetland includes spawning grounds for the lake fish.

It was estimated that the cost of enhancing the existing stream corridor and establishing the wetland park to manage runoff from the altered watershed was significantly less than the costs of constructing pipe and culvert storm / runoff water drainage systems. The implementation costs of restoring 250 meters of the most severely eroded and altered Kilsoi stream into an open and vegetated stream corridor amounted to €25,000 (total). The estimated costs of conventional conveyance culverts (i.e. pipes allowing continuous flow of runoff water underground) would have been €125,000 (€ 50,000 per 100 meters) at the clayey site. Similarly, the total cost of establishing the Nummela Gateway Wetland Park was €62,000 for two hectares of park area (including the construction of 1 hectare of inundated area, nature trail, and 125 planted native trees). The estimated cost of a conventional park was € 100 per m2 (amounting to several hundred thousands of euro for 2 ha area). Also, no re-planting of implemented vegetation – which is typically essential for urban parks after the first two years - was necessary, making the one-off costs of the wetland park a cheaper option. Further, the maintenance costs of the wetland park are foreseen to be minimal, including upkeep of the nature trail (annual), and maintenance of wetland open meadows and sediment trapping pool (once every five to ten years).

Strategic procedures and lessons learned

Participatory land-use planning: Participatory methods were used to integrate the needs of local people into the design, planning and implementation of the project. This planning process resulted in the municipality acquiring land along the stream and dedicating it as a 'functional' zone for water protection. Securing this core zone – and positive results in managing it - provided a starting point for further development of urban green infrastructure in Nummela. Further plans for constructing a continuous buffer wetland park along the stream corridor has already been integrated into municipality's land-use plans (see also below).

Building partnerships: Participatory approach and engagement of local stakeholders in the design and implementation of the process were found beneficial to long-term success. The project was initiated in partnership with environmental, planning and technical authorities, and led by active team of researchers from the University of Helsinki. In addition, the local association for water protection (VESY ry) supported the project from the very beginning with several voluntary actions related to public engagement. The Uusimaa Centre for Economic Development, Transport and the Environment (UUDELY) has participated in project management and monitoring, providing guidance and support at the regional level. Appropriate technical expertise (e.g. sustainable landscape design and monitoring) has been secured by involving experts from the University of Helsinki, Luode Consulting Oy, the UUDELY, and the Water Protection Association of the River Vantaa and Helsinki Region. Finally, the Finnish Association for Nature Conservation (SLL) supported communication and environmental education activities.

Importance of monitoring outcomes: Convincing decision-makers and stakeholders of the multiple benefits related to investment in natural solutions such as wetland creation is a common barrier to financing green infrastructure under the EU Cohesion Policy. This case study shows how investment in monitoring facilitates the verification of wetland restoration and/or creation benefits. Valuation of the gained benefits allows for fully informed decisions, increasing political and public support. The verified positive outcomes of Nummela Gateway Wetland Park have supported the construction of another multipurpose wetland park in Nummela named the 'Niittu' Wetland initiated in winter 2013. The Niittu wetland is planned to include intermittently inundated wet meadows and clay stream habitat, with water flowing through wide areas of wetland vegetation increasing water purification capacity.

Transferability to other areas

The Nummela case study provides a good evidence base for exploring the possibilities of nature based water management – with associated multiple benefits - in other urban areas within the EU. Monitoring was carried out for many parameters in implemented water mitigation landscapes of varying design. Monitoring demonstrates the links between a designed structure and a verified outcome. The knowledge gained supports informed decision-making for large scale urban planning and site design alike.

Contacts

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Source

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SOCIO-ECONOMIC BENEFITS RELATED TO THE INVESTMENT IN PROTECTED AREAS

AZORES ISLANDS

Key Message

In addition to improving nature conservation efforts, the Natura 2000 network of protected areas is also a core element of EU-wide green infrastructure supporting human welfare and bringing considerable economic and social benefits. For example, the protection and/or restoration of wetlands and peat bogs can provide resource effective, nature-based solutions for water management and climate change mitigation while biodiversity and landscape values help to bring tourism to the area. Consequently, while traditionally funded by EU's Rural Development or LIFE Programmes, the management of Natura 2000 sites is also a suitable investment under the EU Cohesion Policy.

Area of focus

Socio-economic benefits of protected areas, recreation and tourism, nature-based management of water resources.

Type, size and source of funding

The total cost of the project is €2.2 million, of which €1.6 million contribution from the EU LIFE Programme.

The project and its background

Covering an area of over 6,000 hectares and hosting a range of endemic and/or rare species, the Pico da Vara / Ribeira do Guilherme Natura 2000 site comprises the last remaining large area of the altitudinal Laurel Forest in São Miguel Island (Azores Archipelago, Portugal). In addition to its biodiversity value, the site is also of high socio-economic importance as it is located in the area of Nordeste and Povoação on the Island of São Miguel - two of the most rural communities in the area with 6,700 inhabitants (1,300 families) and 5,200 inhabitants (1,000 families), respectively. It provides important benefits to the local communities.

A dedicated assessment of the socio-economic benefits associated with Pico da Vara / Ribeira do Guilherme site was carried out in the context of an EU LIFE project established to preserve an endemic Azorean bird species (Priolo, the Azorean Bullfinch) (LIFE Priolo, 2003-2008). Based on the results (see below) a follow-up LIFE project (LIFE Sustainable Laurel Forest) was initiated to continue implementing both conservation measures and dedicated actions to preserve ecosystems and their benefits for the rural population.

The LIFE Sustainable Laurel Forest (2009-2012) was a partnership of the Society for the Study of Birds, with the Secretariat for the Environment and the Sea and the City Council of Povoação. The project aimed to protect existing natural habitats Pico da Vara / Ribeira do Guilherme Natura 2000 site, including the native Laurel Forest. In addition, the project had a number of goals contributing to the sustainable development of the region. These included supporting sustainable ecotourism activities in the area and restoring peatland habitats (raised bogs) for water management. Establishing partnerships between institutions and private sector was foreseen to be a key factor for achieving these set goals.

SOURCE: www.centropriolo.spea.pt

Achieved multiple benefits

The socio-economic assessment carried out in 2003-2008 concluded that national and international **tourism** is an increasing component of the local economy in the Azores. According to the study, the value of tourism in Pico da Vara / Ribeira do Guilherme Natura 2000 site was estimated €74,629/year. Furthermore, the landscape and amenity value of the Povoação area, combined with the estimated existence value of endemic species, was estimated to be worth €3 million. Building on this information, one of the key socio-economic benefits addressed in the context of the LIFE Sustainable Laurel Forest was the systematic promotion of sustainable tourism in the region. A range of activities, including courses for tour guides, lectures and workshop on sustainable tourism and a touristic guide of the site, were developed during the duration of the project.

The results of the 2003-2008 assessment also indicated high socio-economic importance of the Pico da Vara / Ribeira do Guilherme Natura 2000 site in terms of **water management**. Despite high rainfall, seasonal water scarcity is a critical issue in the Azores and for this reason Pico da Vara's role in supporting water supply was considered of highest importance. Laurel forest vegetation cover allows for replenishment of the aquifer, important for ensuring the availability of water in dry periods and for reducing the cost of water supply for public suppliers and for the local community. The value of water regulation (mitigation of flooding and landslides) and water supply were estimated to be €20 million/year and €604,997/year. Water purification was estimated to be €110,556/year. Building on these results, one of the aims of the LIFE Sustainable Laurel Forest was to recover 81 hectares of raised bogs within the site, with a view to both improve site's conservation status and enhance its capacity to manage water resources in the area.

Finally, the 2003-2008 assessment also identified a significant socio-economic importance of **forest-based resources** to local communities. For example, harvesting the Azorean Blueberry (*Vaccinium cylindraceum*), used traditionally for cooking, might represent a potential economic benefit if adequately promoted by local institutions. Similarly, there has been an increasing demand for ornamental plants from the Laurel Forest. Consequently, LIFE Sustainable Laurel Forest included a component focused on recovering native Azorean vegetation by establishing a nursery of Azores plant species and coordinating their planting. A total production of the nursery was over 60,000 plants with 38,000 produced native plants planted by the project. The collection included, for example, cuttings and selection of samples of Azorean Blueberry for demonstrative orchard.

Key project success factors

Socio-economic assessment of benefits: Identifying the socio-economic benefits associated with the site helped to (re)define its management priorities, with an increased focus on preserving functionality of the habitats and consequently supporting the sustainable provisioning of ecosystem services and related goods for local communities. The assessment of benefits also supported cooperation between different stakeholders during the project, helping to ensure effective development, communication and uptake of results. Finally, the results of the socio-economic assessment played an integral role in successfully establishing a follow-up project, LIFE Sustainable Laurel Forest, in the area.

Capacity building and skill development: Dedicated efforts were made during the project to increase the human capital within the rural areas of Povoação and Nordeste. A range of training and capacity building activities have been carried out to further develop and diversify local skills, including training related to services within the tourism sector. This emphasis on capacity building has played an important role in ensuring the uptake of project results and insights in the long run.

Transferability to other areas

The case study provides good evidence on how protected areas are an important part of regional green infrastructure, providing benefits to both biodiversity and people. It also shows how systematic identification, promotion and management of these socio-economic benefits (e.g. by using socio-economic assessments) can contribute to increasing well-being in rural areas around the EU.

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Source

http://www.ics2011.pl/artic/SP64_1955-1959_A.%20Cruz.pdf

LANDSCAPE PROGRAMME AND LAND USE PLAN

Bremen, Germany

Key Message

Incorporation of ecosystem services into Land Use Plans can be achieved through better coordination and co-operation of different Spatial Plans. In this case the coordination between the environmentally focused Bremen Landscape Plan and the Bremen Land Use Plan resulted in the consideration of ecosystem services (climate change adaptation and green infrastructure), improved spatial planning and likely socio-economic benefits. Even if not directly relevant to Cohesion Policy investment the case study shows how investments into ecosystem services can be further enhanced through land use planning.

Area of focus

Land use planning and ecosystem services.

Type, size and source of funding

The external costs are about € 110,000 per year for the Landscape Programme with the funding is coming from the Department for Nature and Water.

Project background

The Landscape Programme in Germany is part of the landscape planning for the whole territory of a federal state. It is fixed in the national law of nature conservation. The actual Landscape Programme of the federal state of Bremen has been running since 1991.

The preparatory Land Use Plan for the city of Bremen was drawn up in 1983 and newly published in 2001. Because these planning instruments were outdated, in 2009 politicians decided they had to be realigned for the next five years. The Landscape Programme has been developed for the city of Bremen and the intention is to prepare, combine and integrate both Plans for the city simultaneously. In this way, all aspects of urban ecology, conservation of biodiversity, habitat connectivity and adaptation to climate change can be included in the Land Use Plan.

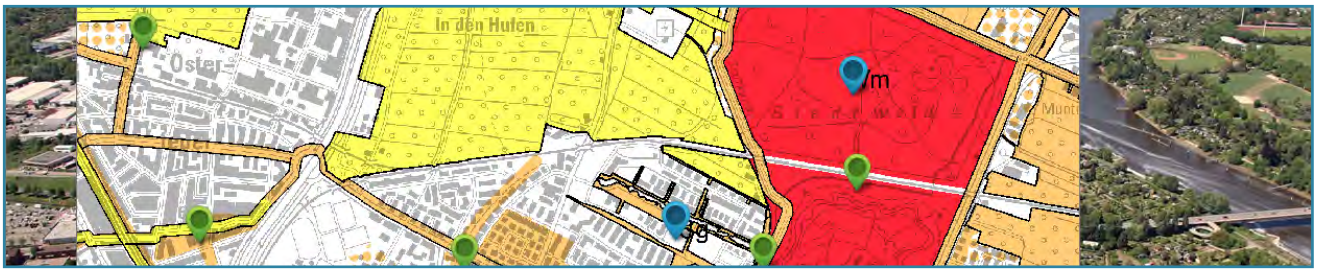
The project

The integrated realignment of the Landscape Programme and the Land Use Plan makes it possible to fix information on natural values, habitat connectivity and areas of high biodiversity in the basic Plan for Urban Development. The expected results are a base for urban development, the conservation of biodiversity and implementation of a habitat network in the state of Bremen.

Both Plans were prepared simultaneously on a scientific basis with information about urban development, social needs, demographic changes, results of monitoring nature and external expertise on soil, water, climate, biodiversity, landscape and public green spaces.

THE PROJECT DEVELOPER AND STAKEHOLDERS' INVOLVEMENT

The Landscape Programme is implemented by employees of the Department for Nature and Water the Land Use Plan by employees of the Department of Urban Development, both within the government agency, Senator for Environment, Urban Development and Traffic).



SOURCE. http://www.lapro-bremen.de/

The Bremen Land Use Plan evolved through broad discussions with many stakeholders and the public and in the end provided an opportunity to integrate natural values and needs for conservation within urban planning. This approach enabled the identification of habitat corridors and the creation of a habitat network and areas of high natural values. It also introduced climate change adaptation as part of urban development and nature conservation measures.

The final decision on the Plans by the Parliament of Bremen is expected at the end of 2014, following the consultation of public agencies and the public in 2012 and 2013.

Achieved multiple benefits

The Landscape Programme improved the Land Use Plan and vice-versa. Traditionally, these two Plans have been developed in isolation from each other but the cooperation and consultation amongst key stakeholders resulted in the improvement of both Plans. A new category of special biological values were included in the Land Use Plan, while the Landscape Programme was adapted to better incorporate industrial areas. Separate SEAs were developed for both plans in house (but by different teams), providing an additional communication source for developing the plans. It is likely that both the Bremen Landscape Programme and the Bremen Land Use Plan will provide socio-economic benefits through measures considering climate change adaptation, the greening of urban areas and the prevention of urban sprawl.

Key project lessons learned

Land use planning as an opportunity for preservation of biodiversity. The combined preparation of the Land Use Plan and the Landscape Programme enabled the integration of urban development and preservation of biodiversity as a basis for communal planning.

Co-operation and coordination: The broad discussion with many stakeholders and the public enabled the identification of habitat corridors, creation of a habitat network and areas of high natural values. It also introduced climate change adaptation as part of urban development and nature conservation measures.

Transferability to other areas

The approach is transferable to other areas in terms of the coordination of different kind of spatial plans and the benefits that this co-ordination can bring in terms of improved plans that consider mutually the need for development and the benefits from ecosystem services.

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Source

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BENEFITS OF GREEN INFRASTRUCTURE

SOCIO-ECONOMIC IMPORTANCE OF RESTORING WETLAND BIODIVERSITY

Thessalia, Greece

Key Message

Developing a large wetland area, as part of the restoration of an ecosystem, delivers strong economic, social and cultural benefits. Several ecosystem services, such as local water and soil management, the sourcing of water and flood control provide infrastructure that generates jobs, better drinking water for residents and opportunities for eco-tourism. Investing in a Lake's flora and fauna supports biodiversity, the economy and people's health and livelihoods.

Area of focus

Green infrastructure, eco-tourism, biodiversity restoration, wetland areas, local economy.

Type, size and source of funding

Between 2007-2013, the Lake Karla project received €38 million in co-funding from Cohesion Policy. The full investment over the period was €50 million. At the national level, the project was supported by the Operational Programme (OP) 'Environment and Sustainable Development', under Priority Axis 9 'Protection of the Environment and Biodiversity'. Total investment since 1999 (with funding from 2000 – 2006) was around €250 million.

Project Background

Lake Karla sits in the south-eastern part of the Thessaly plain. It is Greece's biggest plain and most fertile agricultural area. During the early 20th century, the Pinios River often overflowed, flooding the Thessaly valley. Dams were built to resolve this problem. However, the waters of Lake Karla were no longer renewed; inevitably their quality declined and mosquitos and malaria thrived. In 1962, the lake was fully drained to create more farmland; later water tanks were built to irrigate the wider Thessaly valley. This caused radical ecological and socio-economic changes in the lakeside. Fishermen became farmers and water extracted for irrigation depleted groundwater levels. As the land became less suitable for productive use, people migrated to the cities, and the local economy stagnated. To tackle this problem, a project to re-create approximately 15,000 hectares of the Lake was initiated between 2000 and 2006 supported by the Cohesion Fund (the Lake's surface area before drainage was around 53,000 hectares).

The project

A follow-up project, funded by the 2007 – 2013 national-level OP, aimed to complete the reconstitution of Lake Karla. It should be completed by 2013. The project addresses the energy-intensive use of boreholes, the overuse of underground waters and the destruction of biodiversity.

Specific objectives include finding alternatives to provide surface water to farmers for irrigation, providing water to the nearby

THE PROJECT DEVELOPER AND STAKEHOLDERS' INVOLVEMENT

There are two entities managing the OP and overseeing the implementation of the project, one at national level and one at regional level. The unit managing the implementation of the initiative from Athens is Unit D7 of the Ministry of Public Works (today called Ministry of Environment, Energy and Climate Change) and it cooperates with the respective regional division of the Ministry based near Lake Karla. The engagement of local actors from the beginning of the intervention is seen as a key success factor.

An Institute for the Management of the Eco-development Area of Karla, was set up in 2003. The project foresees €4 million for the Institute's operation. However, it is not yet fully functioning, despite the budget being available and the staff resources allocated. Its mission is to combine the preservation and protection of aesthetic, ecological and cultural value of Lake Karla and the region-Montenegro-Velestinou Kefalovriso.

city of Volos from surface waters, rather than underground water reserves; re-instating the habitats of plantation, birds, animals and fish in the lake. Birds, in particular, used to use Lake Karla as a stop-over on their emigration route to the South, valorising this habitat and boosting economic development via light-touch tourism, such as offering spots for bird-watching, bicycle routes and a local museum.

Infrastructure and eco-tourism works carried out include building a natural history museum and an information centre. Each year 5,000 visitors are expected. The project will also complete work started in 2000-06 on managing the local water and soil ecosystem, together with local archaeological studies.

Multiple benefits achieved

The ake Karla project is an excellent example of a 'win-win' intervention, restoring the ecological status of an area while simultaneously creating a wide range of socio-economic benefits. While the project devoted some funds to support sustainable tourism, the majority went directly to restore the lake and its ecosystems. Through this, the project is expected to provide benefits for fisheries, tourism, water supply for agriculture and urban use and flood prevention.

There are some early environmental successes. A number of bird species have been observed and roughly 160 species of birds - including some endangered ones- are expected back once restoration is complete. Fish have reappeared in the lake, and underground water levels have risen and continue to rise.

With regard to tourism, the area is expected to attract visitors such as bird-watchers, school children on study trips and amateur fishermen. This will create a small number of jobs in the area, to staff the management institute, the information centre and museum. Furthermore, private sector initiatives in the sustainable tourism sector, offering camping sites, horse raising farms etc. are also expected. Additionally, the 2Bparks organisation, under the ERDF Programme, is raising awareness about this natural wonderland through information days, conventions, exhibitions and marketing campaigns

The project also dovetails with other environmental initiatives. A nationally funded irrigation project is helping to make local agriculture more sustainable. Some interest has also been shown by the private sector in developing renewable energy sources, using the Lake's water.

The longer term strategic plan is for the area to move gradually from conventional agriculture to organic, sustainable farming, in line with EU policy.

Key project lessons learned

Investment in the rehabilitation of natural capital: through Cohesion Policy can result in significant socio-economic gains, including the leveraging of national and private sector initiatives which complement the environmental investment. The Cohesion Policy funded investments in Lake Karla were undertaken with primarily environmental objectives. Nevertheless, thanks to the participation of a wide range of stakeholders and a solid understanding of the local socio-economic situation, the project is making a major economic contribution across many sectors. Furthermore, the project has tapped into important national and private sector initiatives that will benefit the wider Thessaly valley.

Stakeholder consultation and cooperation: are vital in a project that impacts livelihoods. The recreation of Lake Karla faced initial opposition from local stakeholders, mainly farmers who owned wells and did not want to relinquish existing irrigation methods through the use of boreholes. To overcome these and other objections by local farmers, dependent upon existing

SOURCE. http://e-thessalia.gr/?p=27133

irrigation systems, project funding was made contingent upon national support for investments providing surface water supply. The engagement of local actors has been key to the success of the project. Solutions have been found which are good for the environment, but also for all stakeholders over the long term.

Transferability to other areas

The case of Lake Karla is good example of a situation where the degradation of natural resources was a key factor affecting the prospects for local economic development. Cohesion Policy funding aimed at environmental improvement is an important catalyst for the development of such areas, particularly in Member States or regions that would otherwise not be able to undertaken such investments. The approach, results and lessons can therefore serve as a model.

Source

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http://www.fdkarlas.gr/Context.aspx

Study Center for the Protection of the Environment and Heritage Lake Voiviida-Karla (KEMEVO)
http://www.boebes-karla.gr/sites/07.html

Region of Thessaly Intermediate Managing Authority
http://www.thessalia-espa.gr/

Website of the Greek Operational Programme 2007-2013 on 'Environment and Sustainable Development' http://www.epper.gr/

GREEN INFRASTRUCTURE FOR PROTECTION OF ECOSYSTEMS AND NATURAL RISK PREVENTION

POLAND

Key Message

Green infrastructure can deliver direct ecosystem services, such as flood control and the renovation of water storage systems. It can also provide biodiversity benefits. Poland's Infrastructure and Environment Operational Programme provides a good example of this synergy. Using co-financing from the ERDF and the Cohesion Fund, the Operational Programme integrates biodiversity and nature conservation across its activities. A specific forestry project is showcased here.

Area of focus

Green infrastructure, synergies with climate change adaptation and the integration of biodiversity and ecosystem services into the Operational Programme

Type, size and source of funding

Poland's Infrastructure and Environment Operational Programme for 2007-2013 is supported by the ERDF and Cohesion Fund. It is a sectoral Programme, with a total budget of €37.56 billion: €22.18 billion from the Cohesion Fund, €5.74 billion from the ERDF and the balance from Polish sources. It is both the largest Operational Programme (OP) in Poland and the largest-ever OP in the EU.

The Programme

The Programme supports the development of all types of infrastructure. It also seeks to protect and improve the natural environment, health, cultural identity and territorial cohesion. Environmental objectives lie in Priority Axis 5, 'Environment protection and the promotion of ecological habits' which aims to reduce environmental degradation, natural resource loss and the deterioration of biological variety; it also seeks to promote active environmental protection in special areas. This priority is allocated € 90 million from the ERDF, about 0.24% of the whole budget.

It is worth noting how biodiversity and nature conservation issues were recognised, even though transport and energy projects received the greatest funding. Although not systematically integrated across all activities, the way they are interlinked with many Priority Axes creates a good basis for achieving multiple benefits. An example of inter-linkages is in Priority Axis 2 'Waste management and the protection of earth'. It sees land rehabilitation as including the restoration of natural land features. The activities undertaken aim to maintain (or improve) the ecological functions of the area and maintain or restore biodiversity and the traditional landscape. This fully supports the benefits envisioned by Priority Axis 5.

Biodiversity and nature conservation are clearly mentioned in the SWOT analysis and the Programme clearly explains how the principle of sustainable development will be implemented through both direct and indirect initiatives: 'Solutions [for the integration of nature protection objectives] will be taken into consideration in a horizontal way at the level of

SOURCE. http://www.fundusze.lubuskie.pl/

preparation, assessment and project implementation under the priority axes'.

Moreover, each Priority Axis contains a paragraph on the 'complementarity and demarcation' of the Priority Axis with initiatives co-financed with other priorities of the Operational Programme and other funding instruments (EAFRD, EFF, EDF, LIFE +).

This recognition of nature and biodiversity at the strategic level and across the Programme created innovative opportunities, such as the example below. It shows how projects financed by the ERDF and Cohesion Fund for climate adaptation and risk prevention can support nature conservation, biodiversity and green infrastructure.

The project

Forest ecosystems in Poland have long suffered from drought. From the mid-90s, the Polish forest management authority undertook a variety of small-scale water retention works, financed from a combination of its own and external funds (i.e. the Polish Ecofund, and the Polish National Fund for Environmental Protection and Water Management).

In 2006, the authority consolidated all its initiatives into a single project 'Increasing retention and preventing floods and droughts in forest ecosystems in lowland areas' under Priority axis 3: 'Resource management and counteracting environmental risks.' It is the first to be conducted on such a large scale, combining water retention in forest ecosystems with the protection against surface water run-off. It is coordinated by the Coordination Centre for Environmental Projects (CCEP), established in 2008 to act as a Project Implementation Unit for the Infrastructure and Environment Operational Programme. The project beneficiary is the State Forests - National Forests Holding. The project runs from 2007-2014 with an allocation of approximately €50 million, including €34.2 million in co-financing from the Cohesion Fund.

The project aims to stop or slow down the outflow of surface water near small catchment areas and to develop the natural landscape. The activities include the construction or renovation of several thousand water storage systems in lowland forests throughout the country. A major goal is to support ecologically sound methods of water retention.

Achieved multiple benefits

The improvement of water balance enhanced the biodiversity in the forest ecosystems. It restored wetlands and marshy areas and improved the lowland forest ecosystems. With water from the forest stimulating animals, birds and insects, the trees' biological resilience was strengthened. Additionally, rare species of fauna and flora were better protected.

Other benefits achieved include the lessening of drought, the counteraction against floods as well as the reduction of fire hazard. It is in fact estimated that due to the implementation of a small-scale retention program in the forest ecosystems, the costs for fire protection activities are going to be reduced by 10%.

Other benefits regard the improvement in landscape values and as a consequence the increased tourist attractiveness of forests (as a result of increase in resources of mushrooms, berries and other forest fruit, improvement of tree stand quality, improvement of local climate, reduced losses from fires, etc.). The increase of the absorption capacity of greenhouse gases due to the proliferation of plant mass is another beneficial consequence.

Key lessons learned

Structure of the Operational Programme: The Infrastructure and Environment Operational Programme integrated biodiversity and nature conservation issues into its different sections in the SWOT analysis and in its objectives and activities by using clear indicators. There were good interlinkages between different Priority Axes, ensuring that nature and biodiversity were supported through opportunities outside Priority Axis 5.

Implementation arrangements: Special practical provisions eased the preparation and application of such a large, dispersed project. Handbooks for beneficiaries were issued by CCEP. In addition, direct support was provided to Regional Directorates and Forest Districts. Another example of good practice is the setting-up of a database for monitoring investments and expenditures.

Transferability to other areas

The project 'Increasing retention and preventing floods and droughts in forest ecosystems in lowland areas' provides a good evidence base for exploring possibilities for nature based water management that enables both biodiversity and economic benefits. The OP Infrastructure and Environment represents a good example of integrated policy planning that addresses both environmental and economic development objectives.

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DELIVERING LOCAL ECONOMIC DEVELOPMENT BENEFITS THROUGH THE NATURAL ENVIRONMENT AND BIODIVERSITY

Wales

Key Message

The implementation of the West Wales and the Valleys Operational Programme (OP) is a good example of how to achieve benefits for regional and local economic development through investment in the natural environment, without dedicating direct funding to it. The OP features strong implementation arrangements, especially regarding the Programme promotion, the project selection practices and the integration of cross-sectoral principles that can be considered by other EU Cohesion Policy Programmes.

Area of focus

Programme implementation arrangements; green infrastructure; delivery of benefits to disadvantaged groups; improving community sense of ownership for biodiversity and the natural environment on its 'doorstep'.

Type, size and source of funding

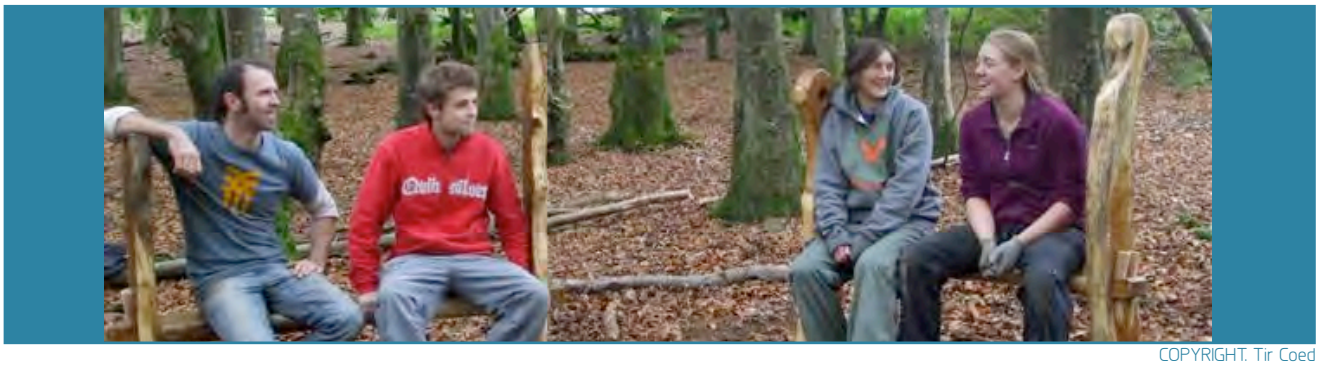
West Wales and the Valleys is one of two Convergence regions in the UK. It has been allocated a total of €2.2 billion in Cohesion Policy funding for the 2007-2013 period. The EU contribution is divided into € 1.3 billion from the ERDF and € 887 million from the ESF. Approximately 18% of the ERDF co-funding was allocated to Priority 4 'Creating an attractive business environment' of which over € 75 million have been invested in the Theme 3 'Environment for Growth (E4G)'. Although no direct funding was allocated to code 51 'Promotion of biodiversity and nature protection', other codes related to nature protection are represented in the budget allocation: 55 'Promotion of natural assets' (€23 million), 56 'Protection and development of natural heritage' (€53 million), and 61 'Integrated projects for urban and rural regeneration' (€171million).

Programme background

The importance of a healthy environment to a robust and sustainable economy, and the economic benefits of maintaining a high quality environment have long been recognised in government strategies and policy documents in Wales. The Welsh Government acknowledges the role of biodiversity and nature in the new Natural Environment Framework *'Sustaining a Living Wales'* (2012) which proposes an ecosystem approach to managing Wales' natural resources. The *'Green Jobs Strategy for Wales'* (2009) Priority 3 'Investing in a more sustainable economy' is also of particular relevance for biodiversity. Both these strategies have the ambitious objective of a better quality of life and future prospects for the people of Wales through sustainable development, combining economic growth, social cohesion and environmental resilience.

The Programme

As a Convergence region, Cohesion Policy funding for West Wales and the Valleys represents a significant investment in the development of the area. The managing authority is the Welsh European Funding Office (WEFO), a governmental institution created specifically for the management of EU-funded Programmes throughout Wales. The 'Environment for Growth'



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(E4G) theme promotes sustainable recreation and economic activity linked to the natural environment in order to achieve sustainable tourism, for example around important conservation and Natura 2000 sites. It recognises the importance of the environment as a stimulus for growth and jobs; and seeks to integrate environmental sustainability across projects.

There are six strategic projects within the 'Environment for Growth' (E4G) theme covering heritage, tourism, regeneration and development. The E4G steering group consists of representatives from the Welsh government departments and from the Welsh Local Government Association (WLGA), the Environmental Agency Wales, the Forestry Commission Wales and the Countryside Council for Wales (CCW).

The project

Communities and Nature (CAN) is a project financed under the E4G theme. It was developed by the Countryside Council for Wales (CCW) to enable a wide range of public and charitable sector organisations to access EU funding as part of this strategic partnership approach, with CCW as the Lead Sponsor. CAN aims to generate economic benefits for local economies by increasing visits to, and enjoyment of the natural environment. It also promotes the sharing of economic benefits with local communities, especially through involving disadvantaged groups in activities. It also encourages those working in the environmental sector to use their sites / skills beyond traditional conservation, to that of job and enterprise creation.

Achieved multiple benefits

The CAN project, financed under the E4G theme, demonstrates how a strategic investment in the natural environment and biodiversity can offer multiple benefits beyond nature conservation - namely local economic growth and community cohesion. Most of the initiatives under CAN financed green infrastructure, sites improvement and restoration, high quality recreational assets for tourism and improvements to footpaths and cycle ways to connect people to nature.

Direct economic benefits include job creation and the creation of new business initiatives linked to the development of the natural environment. Examples of jobs created, besides those attached to the new enterprises, include a site warden and grounds man.

Social benefits include the development of new skills linked to the environment and tourism for disadvantaged groups through employment, training and volunteering opportunities. Examples of training and volunteering opportunities have included survey work, conservation management, construction work on green (eco) buildings and carpentry work on outdoor furniture. In addition, new high quality leisure facilities close to homes are regularly used and valued and lead to social and health benefits for all groups.

Key lessons learned

The OP West Wales and the Valleys and the CAN project is an interesting example of Programme and project implementation arrangements.

Awareness raising and publication of project opportunities: The ERDF Indicator Definitions supplied by the WEFO

Monitoring and Evaluation team set out the parameters for the E4G projects. The early setting of ERDF indicators eased the clear definition of criteria for project promotion and development. CCW held a CAN seminar 8 January 2008 in order to launch the project. An independent facilitator was engaged to plan and run the event. This enabled CAN to capture a host of ideas on which to base project activity. A circulation list and a webpage to inform interested parties were established.

Project pre-selection (screening): Following these promotional activities, a database of project ideas was compiled. The purpose of this list was to demonstrate where demand exists and enabled CCW to draw up the Communities and Nature business plan around this demand. Different projects were prioritised. The CAN Project Board advertised externally for members of an independent Project Selection Board with the delegated powers to assess and prioritise applications received and to make recommendations for funding. Criteria for the assessment awarded higher score to proposals that addressed the cross-cutting theme of environmental sustainability, including demonstration of how this would be achieved.

Project application support: Four calls for projects were advertised on 'Sell2Wales', the Welsh Government supported web-site offering procurement and joint sponsorship opportunities. Guidance throughout the application phase was provided. The CAN Handbook was prepared as a guide to best practice for CAN initiatives.

Targeting the right applicants: The selection criteria and an invitation to tender/submit applications were made available on the 'Buy4Wales' website, the sourcing portal for the Welsh public sector. The invitation to tender targeted those organisations with sites and/or the expertise to provide enhanced visitor experience of natural heritage and biodiversity.

Maximise synergies between initiatives: During all stages of project development, selection and implementation, the management and delivery of CAN was closely aligned to all other strategic projects operating under the E4G theme. Coordination was achieved through regular meetings of the E4G Steering Group. This enabled all strategic projects' project managers to discuss progress and learn from each other's respective problems and approaches.

Cross-cutting theme on environmental sustainability and equal opportunities: Specific guidance documents for integrating the cross-cutting themes of environmental sustainability and equal opportunities were prepared by WEFO and made available both on the WEFO website and on the CCW website. The CAN Team monitors progress towards meeting the objectives set out in these action plans as part of the quarterly reporting cycle.

Transferability to other areas

The OP West Wales and the Valleys is a good example of how the natural environment can be utilised to generate enhanced economic benefits as also demonstrated by the CAN strategic project. It is important in showing **(i)** how the natural environment can be utilised to generate significant benefits for the 'visitor economy' and **(ii)** how local communities and disadvantaged groups can share in some of these economic benefits. CAN has also delivered actions which support biodiversity through the use of the cross-cutting themes' monitoring plans which are agreed upon with each component initiative within the strategic project. Individual actions of the various initiatives addressing environmental sustainability create a bedrock of environmental actions running through the project.

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