

Development of green infrastructure in EU regions

Nature-based solutions delivering
multiple benefits

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

Introduction

What is green infrastructure?

Green infrastructure has been defined as “strategically planned network of high quality natural and semi-natural areas with other environmental features, which is 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.¹



Figure 1: Green infrastructure elements²

The EU Green Infrastructure Strategy, officially titled, Green Infrastructure (GI) - Enhancing Europe's Natural Capital³, is the key EU level policy document in terms of green infrastructure development. It was adopted in May 2013. The EU Biodiversity Strategy to 2020 and the Roadmap to a Resource Efficient Europe included commitments for the Commission to draw up a Green Infrastructure Strategy. Besides, green infrastructure contributes to all 6 targets of the EU Biodiversity Strategy - in particular to the implementation of the Birds and Habitats Directive (target 1) and to maintaining and enhancing biodiversity in the wider countryside and the marine environment (targets 3 and 4).

¹ Green Infrastructure (GI) – Enhancing Europe's Natural Capital, COM (2013) 249 fin

² Trinomics, Supporting the Implementation of Green Infrastructure, Final report for EC, 2015

³ COM(2013) 249 final

The EU Green Infrastructure Strategy promotes the development of green infrastructure across the EU delivering multiple benefits and contributing to sustainable growth. It guides its implementation at EU, regional, national and local levels. Integration of green infrastructure in spatial planning and territorial development is also encouraged whenever it offers an alternative to, or complements grey infrastructure. Other actions that the Strategy foresees include improving the knowledge base and promoting innovation in relation to green infrastructure, and evaluating opportunities for developing a trans-European green infrastructure network (TEN-G), similar to the existing networks for transport, energy and ICT.

A key feature of green infrastructure is its multi-functionality, i.e. the ability to deliver several benefits on the same spatial areas in contrast to grey infrastructure solutions. These include environmental benefits, such as conserving biodiversity or adapting to climate change, social, such as providing green space and better access to nature for people, and economic, such as boosting jobs and providing business opportunities.

Why green infrastructure at regional level?

Green infrastructure is an emerging concept in many European regions where new ways to biodiversity conservation and ecosystem protection are combined with other land-use objectives, such as agriculture, forestry, recreation, mitigating and adapting to climate change, etc. Examples of innovative approaches to effective application of the green infrastructure at local and regional level already exist, particularly in terms of methodologies, tools, process management, and implementation of green infrastructure solutions in wider contexts.



At local and regional level green infrastructure solutions can contribute significantly to implementation of regional policies where all or some of the objectives can be achieved through nature-based measures. For example, integrating green infrastructure into the transport sector to help to minimise fragmentation of nature networks, preserve habitats and reduce noise levels. The benefits go beyond biodiversity as such solutions have positive impacts on regional economies, public health, and resilience of the transport systems. In the water sector, integrating green infrastructure aspects into water and river basin management has the potential to significantly contribute to the improvement or preservation of water. Local authorities can also take actions to stimulate the exploitation of the flood protection functions of green infrastructure. An example of water-related functions of green infrastructure include Natural Water Retention Measures (NWRM), which are multi-functional measures that aim to safeguard water resources using natural means and processes.⁴

⁴ Trinomics, Supporting the Implementation of Green Infrastructure, Final report for EC, 2015

Green infrastructure solutions are especially relevant in urban areas. For example, stimulating the incorporation of green infrastructure features in the building sector will contribute to the reduction of energy consumption in buildings. Urban parks, and tree-lined streets reduce an area's overall energy demand and moderate the 'urban heat island' effect. In addition, the elements of green infrastructure bring health-related benefits, help combat social exclusion and isolation and provide appealing places to live and work.



Green infrastructure in the context of European territorial cooperation

European Territorial Cooperation programmes are an important driving force for policy improvement with regards to development of green infrastructure in regions and cities, and especially in those that are not so advanced in planning such measures. The INTERREG IVC Programme supported such actions. For example, the INTERREG IVC GRaBS project focused on the links between development of green and blue infrastructure and adaptation to climate change in urban areas.

Integrating green infrastructure elements in building sector: a good practice from GRaBS project

The **Green Space Factor and Green Points System** are innovative planning instruments used to secure a minimum amount of green space and the incorporation of adequate and functional green infrastructure in new building lots. The system was pioneered in Germany and Sweden and was adapted and transferred for use by other GRaBS partners. In submitting plans, developers must describe in detail how they would achieve the requested green space factor.

Source: <http://www.ppgis.manchester.ac.uk/grabs/>

Another example is the INTERREG IVC GreenInfraNet project, that was a partnership of 12 European regions focused on the development and implementation of green infrastructure in EU regions in order to conserve biodiversity and ecosystem services in close cooperation with other policy measures related to, for example, agriculture, urban development, climate change adaptation.

Using spatial planning methodologies for the protection of natural values: an example from INTERREG IVC GreenInfraNet project

The **SITxellmodel** (Territorial Information System for the Network of Open Areas in the Province of Barcelona, Spain) is an integrated geographic information system used to assess natural and socio-economic land values as a basis for green infrastructure policies. The unique added value of the SITxell model is its ability to compare different land-use characteristics and environmental aspects, and to establish a balanced and reliable picture of the territory that can be used as a basis for further planning. The good practice was transferred to the Central Hungary region and was used by Hungarian partners to develop a new approach to harmonise the needs of natural areas with spatial planning aspects in two pilot micro-regions in Central Hungary.

Source: <http://www.greeninfranet.org>

Actions focused on green infrastructure are also supported under the Interreg Europe Programme. For example, the Interreg Europe PERFECT project aims to improve regional development policies for the protection of natural heritage through green infrastructure development. The project recognises and aims to explore the multiple benefits of green infrastructure.

The Bicester story and the role of high quality green infrastructure

Green infrastructure plays a fundamental role in the planned growth for Bicester, which has over the years had the status of Eco Town, Garden Town and Healthy New Town. The Cherwell Local Plan, adopted in July 2015, sets out measures to maintain and enhance the District's green infrastructure network, ensuring that green infrastructure network considerations are integral to the planning of new development. It also includes a policy which requires 40% of the North West Bicester eco-town to be green space, with at least 20% of it accessible to the public. PERFECT partners learnt about how various stakeholders are being engaged and partnerships developed to maximise the social, economic and environmental potential of natural heritage in large scale new development.

Jenny Barker, Bicester Delivery Manager, Cherwell District Council, UK during the study tour organised by Interreg Europe PERFECT project⁵

5

https://www.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/PERFECT%20Study%20Tour%201%20write-up.pdf

The way forward

Boosting investments in green infrastructure

Investments in green infrastructure represent effective win-win solutions that go beyond the areas of biodiversity and can bring benefits for regional economies, tourism and recreation, water management, sustainability of energy and transport systems, etc. There is a need to increase public investments in green infrastructure solutions, where these meet multiple objectives across different policy areas. PERFECT project partners agreed that communication on the economic benefits of green infrastructure is key to securing its investment. In addition, they highlighted that there is a need to make the case to decision-makers that the natural heritage covers many benefits and not investing in natural heritage can result in a higher burden to the public sector in terms of costs (e.g. health costs)⁶

Strengthening the knowledge base

Knowledge of green infrastructure needs to be improved, and concrete examples are needed at regional level on how to quantify and promote their economic and social benefits. In addition, there is a need for more examples of efficient green infrastructure solutions (e.g. design options for climate change adaptation, examples of mainstreaming green infrastructure in the construction of buildings, neighbourhoods and business parks, etc.). Mapping of green infrastructure elements in the regions or at the local level will help to highlight the multi-functional aspects of green infrastructure for example by identifying the beneficiaries of ecosystem services in view of establishing Payments for ecosystem services (*PES*) schemes. These are areas in which regions have the possibility to learn from each other, exchange views and information, and enhance their capacity and knowledge. Also, better visibility of green infrastructure will help to raise awareness about the various objectives to which it contributes.

Improving planning

There is a need to give higher priority to green over grey infrastructure as natural solutions can often provide more benefits at lesser cost than grey infrastructure which can be more expensive to build and maintain. PERFECT project partners noted that a place-based approach to green infrastructure is important to ensure that a holistic approach and good design is at the forefront. Planning has a vital role in this through consulting with multiple stakeholders and ensuring there is a robust bank of evidence around needs and requirements⁷.

6

https://www.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/PERFECT%20workshop%201%20write-up.pdf

7

https://www.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/PERFECT%20workshop%201%20write-up.pdf

Sources of further information:

- EC, Green Infrastructure (GI) – Enhancing Europe's Natural Capital, COM (2013) 249 fin, 2013
- EC, Our life insurance, our natural capital: EU Biodiversity strategy to 2020, COM (2011) 0244 fin, 2011
- IEEP and Milieu, The Guide to Multi-Benefit Cohesion Policy Investments in Nature and Green Infrastructure, A Report for the European Commission, 2013
- Trinomics, Supporting the Implementation of Green Infrastructure, Final report for EC, 2015
- Ecologic institute and GHK Consulting, Design, Implementation and Cost Elements of Green Infrastructure Projects, Final report for EC, 2011
- IEEP, Green Infrastructure Implementation and Efficiency, Final report for EC, 2011
- EC, Science for Environment Policy, In depth report Multi-functionality of green Infrastructure, 2012
- RPA, Economic and Social Benefits of Environmental Protection and Resource Efficiency related to the European Semester, Final report prepared for DG Environment, 2014
- IEEP, Common Framework for Biodiversity-Proofing of the EU Budget: General guidance. Report to the European Commission, 2014
- ENEA-MA Working Group on 2014-2020 Cohesion Policy and Biodiversity, Position paper on Integration of biodiversity and Natura 2000 in Partnership Agreements and Operational Programmes 2014-2020, 2013
- INTERREG IVC. Good practice database: <http://www.interreg4c.eu/good-practices/index.html>

#GreenInfrastructure #biodiversity #multi-benefits #cooperation
#PolicyLearning #InterregEurope # #GreenBuildings

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