

# Assessing Green Infrastructure Elements in the Visegrad Countries

*Analysing Green Infrastructure elements and connectivity at national level in the Czech Republic, Hungary, Poland and Slovakia*



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2011

CEEweb for Biodiversity is an international network of NGOs in Central and Eastern Europe. The mission of CEEweb is the conservation of biodiversity through the promotion of sustainable development.

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## Introduction

30% of significantly and moderately fragmented area, 22% of mammals in the danger of extinction and only 17% of favourable conservations status of habitats and species within the Natura 2000 network<sup>1</sup> - these are some of the sheer numbers that show that the EU's biodiversity is in extreme danger. The continuous crawl of grey infrastructure along with the spread of unsustainable land use practices trigger the number one factor of species, habitats and ecosystem services loss at the European level: fragmentation. Fragmentation is an enemy that we can only overcome by a thorough and long-term integrated tool of spatial planning if we are to save our still remaining natural heritage, which are still subsequently rich in the Visegrad countries of the Czech Republic, Hungary, Poland and Slovakia.

Green Infrastructure, the new policy tool of the European Union to halt biodiversity loss, aims to connect habitats and increase ecosystem resilience by creating a network of both artificial and natural corridors and areas. Green Infrastructure however is not a brand new idea: Member States have used certain elements of it for the very same reason – with more or less success.

To map the already existent elements and to see the related legislation, management, financing, and actual functionality, an assessment was compiled in the four countries of the Czech Republic, Hungary, Poland and Slovakia to investigate the status of the Green Infrastructure elements at national level. The results indicate that a new EU integrative spatial planning legislation – along with the new Biodiversity Strategy - will indeed aid the coordination and harmonization of different sectorial policies affected spatial planning for the sake of biodiversity. On the other hand, examples may also imply that, in order to thoroughly halt the decline of biological diversity not only spatial planning should be addressed. We would either need a very exhaustive review of the current framework or we need innovative tools that address the drivers of unsustainable land use encroachment, as well.

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<sup>1</sup> EUROPEAN COMMISSION.2012. The EU Biodiversity Strategy to 2020.

## **Biodiversity loss and fragmentation – effects and causes**

30% of the area of Europe is highly fragmented due to the level of urbanization and intensive land use. In the last decades, vast lands have been transformed into urban zones or cut up by infrastructure. Some 8,000 km<sup>2</sup> were concreted over during the 1990s, representing a 5% increase in sealed areas within only ten years. In addition, 15,000 km of new motorways were constructed in the EU between 1990 and 2003. Built-up areas have grown faster than Europe's total human population, indicating an increasing space claim per person.<sup>2</sup>

The spreading of infrastructure and unsustainable land use practices trigger habitat fragmentation and destruction, which are some of the main causes for the loss of biodiversity and ecosystem services (e.g. food production, recreation, flood prevention, pollination, etc.), and the loss of them is rather severe.

In the European Union's 27 Member States, 25% of animal species face the potential danger of extinction. Among them the most threatened are marine mammals (25% with the risk of extinction), amphibians (22% with the risk of extinction), reptiles (21% with the risk of extinction) and terrestrial mammals (15% with the risk of extinction), and although there are vast efforts to manage the Natura 2000 network, only 17% of habitats and species are assessed to be in favorable conservation status. Besides of this, most of European ecosystems are degraded thus unable to fully supply ecosystem services such as protection from natural disasters or climate change mitigation. In the meantime, European inhabitants consume twice as much as they ought to concerning natural resources.<sup>3</sup>

In spite of the tremendous amount of legislation and policies that aims to reduce the decline of biological diversity, the results show no promising outcomes, but a deepening biological crisis. For this very reason new integrative tools and innovative mechanisms at European level may seem necessary to yield positive trends in conserving our remaining natural heritage.

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<sup>2</sup> European Environmental Agency. 2010. The European Environment. State and Outlook. Land use.

<sup>3</sup> EUROPEAN COMMISSION. 2012. The EU Biodiversity Strategy to 2020.

## **Green Infrastructure Strategy and affiliates – new policy tools to come**

Since the loss of biodiversity, along with the eminent factor of fragmentation, does not only lead to a biological disaster but it can also trigger economic and social problems, the European Commission decided to address this issue by a new strategic framework, the Green Infrastructure Strategy. The strategy sets the targets to reconnect fragmented habitats and to restore their functionality under a new network in order to provide adequate ecosystem services and benefits for both human and biodiversity. Green Infrastructure *per se* can be defined as a strategically planned network of green areas and other environmental features that are able to provide numerous benefits and services including supplying and contributing to fresh drinking water, rich soil development, recreational areas, adaptation to climate change and mitigation of its impacts such as for instance, flooding. This new EU-wide network will consist of natural and semi-natural assets ranging from green spaces in urban to rural, from terrestrial to freshwater, from coastal to marine areas<sup>4</sup>.

The new strategy, to be adopted in 2012, will be in effect with additional strategic approaches prescribed by the second target of the new Biodiversity Strategy to 2020. As there is a global and EU target to restore at least 15% of degraded ecosystems, the EU proposes a framework to be developed by Member States and the European Commission to establish priorities for restoring ecosystems at all levels by 2014 aided by maps and assessments on the state of ecosystem services and their potential monetary values. The 'Ensuring no net loss of biodiversity and ecosystem services' initiative will be implemented by ensuring that no detrimental activities and impacts are realized without adequate compensation or offsetting.

Although these strategies and initiative look all very promising and also exceedingly crucial, they are on one hand no binding legislation – implying no obligatory measures to be carried out by Member States – and on the other hand, do not tackle the drivers of the loss of biodiversity. Not addressing the root causes that trigger the degradation of ecosystems and the decline of species resulted in not fulfilling the 2010 targets and the global goals of achieving no biodiversity loss. We would need to deal with those activities that are the major factors of this global phenomenon – and also the engine of our current economic and social system.

Our analysis on the four countries' green infrastructure elements also indicates that there should be attempts on achieving biodiversity targets through exhaustively implementing actions by the current measures and applying additional tools in order to address both the input and output mechanisms of biodiversity loss.

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<sup>4</sup> European Commission DG Environment's site on Green Infrastructure:  
[http://ec.europa.eu/environment/nature/ecosystems/index\\_en.htm](http://ec.europa.eu/environment/nature/ecosystems/index_en.htm)

## Assessing Green Infrastructure elements in the Visegrad countries (Czech Republic, Hungary, Poland and Slovakia)

### *The project*

In 2011, CEEweb for Biodiversity with BROZ Slovakia, Daphne CZ, Ecological Institute for Sustainable Development and Naturalists Club Poland initiated a common project to assess green infrastructure elements at national level in order to form a common Visegrad position that feeds into national and EU policies and to suggest other tools to save our remaining natural heritage.

To map these elements and networks, a questionnaire was compiled (*Annex 1*), which focused on the assessment of green infrastructure related legislation, their executions and administration, integration to spatial planning, monitoring, financing and transboundary issues besides providing a general picture on these countries green and grey areas.

### **The results of the analysis**

#### *General overview in terms of natural and artificial areas*

All countries submitted data in terms of general information on area and population, ratio of protected areas' sites and categories, artificial areas (according to the CORINE system), the percentage of 'natural habitats' based on the overlapping of Habitats Directive's Annex I habitats and natural heritage sites, and length of roads and waterways.

Country	Protected areas (%)	Natura 2000 sites (%)	Natural heritage overlapping with natural habitats	Artificial areas (%)	Length of roads (km)	Length of regulated waterways (km)
<b>Czech Republic</b>	16,43	18,82	19	10,87	55653	2736
<b>Hungary</b>	10,5	21	~10	5,69	31664	940
<b>Poland</b>	32	19,9	~15	4,77	268000	1689
<b>Slovakia</b>	23,1	32,7	n/a	4,6	17975	7898

The numbers indicate that all countries have a relatively high rate of protected areas and Natura 2000 network whereas strictly considered artificial areas can be seen as moderately low. Despite this, the natural heritage sites overlapping with Annex I habitats (forming an indicative number of adequately functioning ecosystems) are *de facto* quite low in comparison to the protected sites. The length of roads and regulated

waterways may indicate that there are many fragmented spots in these countries.

### *Green Infrastructure systems of the Visegrad countries*

As it was mentioned before, Green Infrastructure and integration of natural elements into spatial planning are not brand new ideas. Various forms of the Green Infrastructure elements (protected areas, ecological corridors, urban green areas, old trees - in many cases of cultural importance -, line vegetation along streams, permanent grasslands, natural forests, cycling paths, vegetation functioning as a windbreak, city parks, gardens, water bodies such as streams, ponds, lakes and wetlands including fens, marshlands, etc.) are integrated to various legislation and planning tools in these four countries. On the other hand their integration to systems and their levels to protection largely differ.

The **Czech Republic's TSES** (Territorial System of Ecological Stability) - an ecological network based on hierarchical levels at national, sub-national (regional) and local level consists of biocentres, biocorridors and interaction features. TSES along with Slovakia's USES, RUSES systems, is probably the most successful and integrative tool in including GI elements. Within TSES, biocentres and biocorridors are interacting elements that are included into the ecological network. These are linear assets creating favourable conditions for the fauna and flora and affecting the surrounding ecologically less stable landscape with the local system of ecological stability (see box below). TSES is considered as one of the best operative GI network. Besides TSES, there is the so-called ILE (Important landscape elements), which covers the ecologically, geomorphologically or aesthetically valuable part of landscape and aims to protect its typical appearance or contribute to maintaining its stability. ILE represents a category of protection of those segments of unprotected landscape, which do not achieve parameters to be declared as protected areas. In addition to these two networks, natural parks and memorial trees are also covered and protected by the law in the Czech Republic.

The same **Slovakian system, the USES (Territorial System of Ecological Stability)** and **RUSES (Territorial System of Ecological Stability at the Regional Level)** also integrates the green infrastructure elements of protected areas, line vegetation, vegetation along streams, streams as well as wetlands, permanent grasslands and natural forests as biocorridors and/or biocentres at local, regional and national level.

In **Poland**, no ecological network is officially designated, however, separate GI elements (forests, agricultural lands, wetlands, water bodies, trees and ecological corridors) are subjects of national law. These elements and their spatial use are regulated by different policies, relevant management and land-use plans and authorities. **Ecological corridors** are generally mentioned in legislation, but no strict regulations are applied. In addition to these regulations, there are soft recommendations with some scientific maps and articles, for instance, in case of wolfs and bear corridors, which are also used for the spatial development strategy.

### **TSES – the Czech good example**

TSES, The Territorial Systems of Ecological Stability is a category of generally protected areas as defined in the Nature Conservation Act of the Czech Republic. According to section 4 of this act, TSES shall ensure the preservation and reproduction of natural health, a favourable effect on the surrounding less stable part of the landscape, and the establishment of a foundation for the multilateral utilization of the landscape. The main aims of such a network in the landscape are: supporting a multiplicity of functions of the landscape, conserving and supporting the development of biodiversity, enabling migration of organisms, supporting and regeneration of energy, information and substance flow, landscape components regeneration, having a positive impact on the surrounding less ecologically stable parts of the landscape (large parts of arable land and forest monocultures), preserving important landscape phenomena, soil protection from erosion, moderation of water flow during floods and rainstorms and raising water retention of the landscape. There are three TSES categories: supraregional, regional and local. TSES is established by plans that should include a draft map of proposed elements, a table describing functional and spatial factors and measures to be implemented to maintain this status. TSES is determined and assessed by the physical planning and nature conservation authorities in cooperation with authorities for water management, agricultural land resource protection and the State Forestry Administration. The system is lined up in cooperation with spatial planning bodies and serves as documentation for a processing of territorial planning documentation, land consolidations and land replotting, forest management plans, water management documents and other documents regarding protection and restoration of the landscape.

Therefore, TSES remarkably complies with the requirement of Green Infrastructure as the aim of the legislation is the preservation of ecological stability. The TSES is defined by the national law, and the designation of national, regional and local level is based on subsidiarity. The TSES scheme takes into account the system of ecological corridors, and the optimal prospects for connectivity.

In **Hungary**, the **Hungarian Ecological Network** is designated as a Green Infrastructure Framework. The ecological network is a separate protection zone within the National Land Use Planning Strategy, which includes the system of natural, and semi-natural areas with national significance and the ecological corridor between them. The network consists of the core areas, the ecological corridors and the puffer zones. This in theory is determined by the settlements or the counties' land use plans. The ecological network's protection can be integrated at lower level, however, these regulations and policies at settlement level are hardly laid down.

Artificial and semi-natural structures enhancing connectivity, like wildlife crossings and tunnels are relatively common in the four countries, but only incidental with regards of the needs. Large games, especially species like bears and wolfs, and amphibians are in the focus of these efforts. There are also increasing numbers of fish passes, however,

only at newly built dams and water plants.

It can be seen therefore that in theory, three Visegrad countries have a *quasi* well-developed and regulated Green Infrastructure network that aims to achieve nature protection with integration of biological corridors and core areas. In Poland, separate elements are protected by various laws and authorities. Besides, it has to be mentioned that all countries have an elevated Natura 2000 network and protected area ratio, which are the to be core areas of the new Green Infrastructure Strategy. On the other hand, all countries indicated that the actual implementation and thus the proper functionality of these systems are often in question especially at local level.

### *Legislation and governmental tools*

In the **Czech Republic** all of the basic Green Infrastructure (GI) elements are an obligatory part of land-use planning documentation including not only green areas in urban villages, but also protected areas, TSES, important landscape elements, natural parks. The actual tool is *land-use (spatial)* and *comprehensive landscaping* at a smaller scale. All *land-use planning* documents are based on the Act No. 183/2006, on land-use planning and construction code (Construction Act). Land-use planning is a process of several degrees: at the national level, there is a national land-use development policy for which the Ministry for Regional Development is responsible. It coordinates preparation and updating principles of land-use planning and preparation of strategies by other public authorities. This policy is binding also for preparation of land-use plans and for related decision-making. Land-use planning documentations are prepared by individual municipalities. The tasks of these documentations are, among others, the protection of natural, civilizational and cultural values of a territory, protection of natural habitat types and habitats of species, protection of a territory according to special legislation against negative influences in cases of evident public interest.

*Comprehensive landscaping* (based on the act No. 139/2002 on landscaping and land offices) is a tool that tackles changes of legal status of land parcels. It brings spatial and functional reorganization of land parcels (their uniting or division) to arrange for their accessibility, change of land-use or alignment of boundaries so that there are conditions for their new rational use for determined purposes (e.g. TSES corridor).

In **Slovakia**, the main pieces of legislation to support development of Green Infrastructure elements and their inclusion in legislation and decision making documents including documents related to regional/local development, are the *Law on nature conservation* (No. 543/2002), process of *Environmental Impact Assessment (EIA)* and the generally binding legal regulation (*VZPM*) of a city and *rural development plans*. GI elements are included for example, in spatial planning documents (*VZPn and rural development plans*), which have been developed for several cities in Slovakia. These plans have been implemented through ÚSES and/or RÚSES in addition to designation of for instance, different urban zones or zones for recreation, sport and nature protection. In general, development (e.g. building of houses, roads, industry, etc.) is forbidden in these zones and they are managed also to protect species and habitats.

In **Poland**, local governments are responsible for land-use planning. There is legal obligation that land use plans should take into consideration requirements of

environment protection, water management, protection of forests and agricultural lands. Before preparing land-use plans, so called “physiographic study” describing natural conditions should be prepared along with SEA procedure. There are two types of land-use plans prepared and established by local governments:

1. “*land use directions*”: general study and plan covering all community territories (as a result, 100% national territory covered), binding for future detailed land-use plans, although not legally binding generally and
2. *detailed land-use plans*, legally binding (nevertheless, not obligatory for the whole territory, present coverage in Poland is approximately 24% of the total territory, in some regions less than 10%).

In **Hungary**, most of the green infrastructure elements are affected by the legislation and the practice of *spatial planning*. The *National Land Use Plan* enlists the ecological network as well as their segments to be considered in local and regional plannings, as well. However, there are significant differences in the implementation of the legislation between protected and non-protected areas. The protected natural areas are protected by the law which is firm and clear. Most of them have conservation management plans, which must be considered in the planning processes. At smaller settlements, the local governments deal with spatial planning and the integration of GI elements, whereas at cities it is more typical that the artificially created urban green spaces of the GI (parks, alleys, etc.) are prioritized in the decision-making.

Generally, the assessments indicate that although in theory green infrastructure elements are to be taken into consideration at land-use plans, they are often neglected on the account of other interests. As there are significant differences between protected and non-protected areas, the latter are often overseen and perceived as a limiting factor in spatial planning. Public investments and smaller individual private investments may be authorised without detailed land-use plan on the base of individual decision.

In all four countries, the legal feasibility is given to design GI systems on the basis of existing land use planning schemes and nature conservation, which could also be seen in already realized GI projects (see below). Moreover, basic norms of spatial planning and territorial subdivisions of authorities provide a further possibility to integrate elements of green infrastructure to land use planning schemes. In addition to the national level, local governments often have the same possibility. This *per se* may have some difficulties in effective implementation, especially on local level, where it is more difficult to reconcile conflicting interests.

In **Slovakia**, small ponds and embankments as well as dry polders were constructed. During heavy downpours, water is kept in the ponds and out of human settlements to hinder heavy floods and their impacts, which were very common over the last few years triggering huge economic and social detriments.

In **Poland**, some projects of restoring river ecological corridors are implemented: namely, the construction of the ecological corridor of Biala river to enhance water wildlife, the conservation of Visztula's wild river and alluvial forests in Warsaw as elements of urban ecosystems and the blue corridor of Ina River.

### *Integration to EIA and SEA*

Regarding this important issue of assessments, the four countries have similar features. Some GI elements (e.g. water bodies, forests, wetlands, etc.) as well as ecological network and connectivity are usually taken into consideration by impact assessments (with the exception of Czech Republic, where connectivity is usually not considered). In Slovakia, impact of an activity on the landscape in general, and GI elements particularly, is among the main criterion for the final decision if the activity is negatively influencing the environment. In Poland, EIA and SEA requirements are not very precise for these issues, although they may and should be interpreted in a way including connectivity. In good EIA reports connectivity is included, if not NGOs are usually successful in opposing this in appellation procedure. For Natura 2000 management – the perceived core areas of the GI network –, there is a clear obligation to "*analyse impact on connectivity with other sites*".

As in some cases EIA and SEA regulations are rather vague, it can mean that in reality these processes do not mean the prevention of obstructing measures causing real and severe problems in connectivity of the sites.

### *Mapping and monitoring*

In the **Czech Republic**, the Central List of Nature Conservation concentrates foundation deeds and expert documentation on protected areas, memorial trees, contractually protected areas and Natura 2000 sites country-wide. Chosen documents are published electronically in the Digital register of the Central List of Nature Conservation, however this register is not GIS-based. The Agency of Nature Conservation and Landscape Protection of the CR administrates also Information System of Nature Conservation, which contains – among others – a GIS based map server. These data are public and usually the updating is continuous; it is the responsibility of a relevant authority to submit current data into the registers. Within these systems, not all the GI elements are monitored. There is existing monitoring of habitat types and species according the Habitats and Birds Directives. There is also a biotope mapping realized in 6-year cycles. On the other hand, there is no separate monitoring of TSES, ILE and other GI elements.

In **Slovakia**, the majority of GI relevant data are processed in GIS and transferred into maps. Data processing is ongoing and not yet fully processed in GIS. Coverage of the data varies, could reflect situation from country/regional/local level or even from a specifically selected small area's point of view. Documents of USES as well as development plans and city spatial plans are publicly accessible in addition to the GIS data. The registers are updated at different levels. There is no regular monitoring of changes in the GI network in place.

In **Poland**, as a coherent ecological network is non-existent, only certain elements are mapped including parcel registry with land-use categories (forests, meadows, pastures, waters) and water cadastre containing all information about water use permits besides Natura 2000 sites and protected areas. Land evidence (land cadastre) covers the whole

territory of the country on what data are available - however only in paper form. These data are generally GIS-based, however often dispersed and not directly accessible. Access to GIS data is only possible for governmental administration for justified purposes. Water cadastre covers 100% of water areas and data are publicly available on request and with the access fee. Regarding monitoring there is no procedure of survey and general review and monitoring – at least not from a GI perspective.

In **Hungary**, the main form of GI monitoring is the Nature Conservation Information System (NCIS). It is a professional information system realized by complex geospatial supporting with continuous uploading, it is also compatible with the systems of the European Union. Its registries are at local scales and also suitable for processing coordinates. The complete registry is not available for the public. The monitoring of GI elements is restricted to Hungarian wildlife monitoring within the National Biodiversity Monitoring System, which monitors 24 groups of organisms and the obligatory monitoring related to the Natura 2000 sites.

It can be seen that only certain parts of GI elements and land use changes are monitored in each country and most often not in an integrated level. The elements' registers are public, but the correspondence between the registers of different scale and/or by different owner is significantly low. Land cadastres, urban spaces and protected areas as well as the Natura 2000 sites enjoy priority in terms of mapping and monitoring. Only the GI elements under specific regulation – like Natura 2000 areas - are monitored on a regular basis. Thus, in terms of data and monitoring of GI elements, there are obvious differences between protected and non-protected areas. As these activities are rather cost consuming, frequent update and constant data processing are often lacking behind. Every element under legal protection is assigned to a certain authority responsible for inspection reported negative effects and possible intervention. There is no rigorously designed monitoring system with automatic signalling and response measures in neither of the examined countries.

Responses in case of unfavourable changes show rather disappointing results, with no integrated approach existing how negative changes are responded to conserve the integrity of the ecological network.

### *Financing*

Similarly to the EIA and SEA processes, the financing of management and maintenance of GI elements is rather similar in all four countries. There are no separate financial mechanisms for the preservation and development of green infrastructure *per se*. Certain GI elements such as protected areas and Natura 2000 sites (along with the already existing GI networks) are financed by the state budget and/or regional authorities' budget complemented largely by various EU sources, most importantly by EARDF and Operational Programmes. Moreover, the finance, especially project funding, is contingent and can cover only restoration/designation costs, but not maintenance. Maintenance and management costs are not covered from funds, despite the urgent need of many cases to preserve the current accomplishments. Most frequently, the costs

are rather for designation and establishments.

Designation, management and maintenance of urban green spaces or locally relevant sites (e.g. parks, tree lanes, etc.) are covered from the local authorities' budgets and often not specified. Maintenance and management of artificial or semi-natural assets, such as ecoducts or fish-passes, are often implemented by the owner of the assets (e.g. railway/roadway managers and water plant owner).

On the other hand, it has to be mentioned that there are some elements of GI that in fact do not need financing, which potential should be better used in future policies. Within this, the main goal would be not to destroy certain elements including e.g. natural refugia such as plots for small water pools, fens, etc.

### *Transboundary issues*

Regarding transboundary issues, there are not many examples within the CEE region. The countries do not design their ecosystem networks with regard to the connection to ecological networks of neighbouring countries (with the exception of the Czech Republic and Slovakia where the system is connected). Neither there are conscious measures to ensure the enhancement of crossborder ecological connections. However, there are examples of environmentalist protests aiming to prohibit development projects negatively affecting the ecosystems on both sides of the border.

## **Some points to consider for implementing the Green Infrastructure Strategy in the Visegrad countries**

From the above analysis, we can draw some major points with the aim to feed into further policies and plans. Firstly, we can see that ecological networks in most countries are already designated to enhance connectivity and ensure better ecosystem functioning. These networks are based on several pieces of national legislation and complemented by further EU requirements built on for instance, the Habitats Directive or the EIA Directive. These networks define assets such as biocorridors, core areas (puffer zones) and interaction features and integrate most of the natural areas into it. These spatial networks along with other natural and semi-natural elements (such as urban green spaces, ecoducts and parks) are all indicated in spatial planning and relevant maps and data – although often in not a very updated form. These networks and additional information on other relevant GI elements can serve as a very good base for the further Green Infrastructure Strategy in the Visegrad countries. On the other hand, not all countries have similar networks and they also differ in terms of GI elements included, monitoring and data. Therefore, a precise list of GI elements and their exact definition will be inevitably necessary.

As the results demonstrate, the construction of a network as such by regulations of various kinds is usually not enough for reaching the actual purpose: connecting natural areas. As it is implied above, GI elements are often neglected in spatial planning and development plans in spite of the numerous regulations at various levels. This is often due to the fact that there are other 'overriding interests', which may (or may not) face severe difficulties if the certain GI element is protected by the national law. Also, even

though EIAs and SEAs are in theory should take into consideration Green Infrastructure elements, along with connectivity in most cases, this often does not happen. This may raise the question how a new (and also non-binding) strategy can tackle this issue both in theory and practice.

An additional difficulty is the financing issue. There are already obvious hardships in financing even in relation to those elements' management and maintenance, which are supported from various EU funds and the national sources, not mentioning costs of monitoring, mapping and interventions in terms of unfavorable changes. If the strategy and the affiliated restoration and mapping targets of the EU are to be realized, significant sources should be ensured on one hand, to improve and integrate the already existent, but not duly thorough and separated mapping and monitoring systems, and on the other hand, to manage and maintain a new, completed system of all GI elements. Although, here, we also have to mention those natural elements, where no interventions and therefore no financing for management are required. Transboundary issues, rather the lack of them, will also make it difficult to create an EU-wide and coherent system as the already operating networks do not offer cover the same elements or often it is non-existent.

On the other hand, even if a coherent and an EU-wide Green Infrastructure is set including all relevant elements with proper monitoring, financing and management in an ideal case, what would ensure that the future spatial planning as well as related impact assessments would consider GI elements equally with grey infrastructure development – since it is not the case now in spite of various legislation. Built on this, what would ensure that the pre-set biodiversity, connectivity and restoration targets for 2020 will be achieved by these tools? What underlying principles have to be fulfilled to halt ecosystem fragmentation and what additional tools may be used within what types of framework?

### CEEweb for Biodiversity recommendations:

**If we are to reach efficient and effective biodiversity conservation through Green Infrastructure policies**, where all elements are adequately covered by EU and nation-wide legislation and strategies, **it is time to integrate the various related concepts into a common framework with the following requirements:**

- The **elements of GI should be clearly defined** to be either real physical structure located in the geographical space or it must be a structure important for the functioning of the ecosystem, i.e. necessary for ecosystem health.
- The **GI shall not be separated from grey and black infrastructures**, but shall be regulated through an integrated policy aiming at the reduction of total environmental pressures. This shall stop the current practice that pressures from unregulated use cancel conservation efforts in other areas.
- The **regulation** of different land uses shall be significantly improved, which **shall cover all land users**. Standardized monitoring and information systems shall be elaborated at an appropriate scale. The monitoring shall be linked with proper responses in case of unfavorable changes along with the clear identification of responsibilities.
- There **shall be a moratorium for land use with significant negative impact on ecosystems** and cross-border connectivity of habitats shall be significantly improved.
- **Both ecosystem and sustainable use approaches** should be applied: GI elements should be used and managed in a non-destructive way in order to enable continuous ecosystem functioning to provide ecosystem services at the same time.
- **Financial mechanisms shall be developed** for the GI, which creates revenues within a scheme. This mechanism shall give direct feedback on the environmental performance of land users, who shall be subsidized or discouraged depending on whether they create positive or negative externalities to nature conservation and the society.
- Elements and areas of **'no financing and actions'** should be developed to allow their proper functions (e.g. wildlife refugia, natural rivers and forests).