

Workshop Report: 2nd Exchange of Experience Workshop

Green Infrastructure Planning, Policies and Instruments

Regional Environmental Center, Szentendre, October 11-12, 2012



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Introduction

The second exchange of experience seminar within the Green Infrastructure Network INTERREG IVC project was organised at the head office of the Regional Environmental Center for Central and Eastern Europe (REC) on October 11-12, 2012. The topic was green infrastructure planning, policies and instruments.

Bearing in mind the partners' diverse experience with green infrastructure policies, in agreement with Flevoland and the Centre of Applied Forest Research (CIEF), the REC suggested a simple methodology for facilitating the exchange of experience process at the seminar.

As a first step, each partner was requested to fill out a questionnaire to provide a quick pre-evaluation of the different green infrastructure (GI) elements in their area. The questionnaire took into consideration six factors relevant to the attributes of GI elements, and for each factor partners were requested to evaluate/score each of the green infrastructure elements in their territory according to the categories provided. The preferred focus of the evaluation was the regional/local level, but if this was not possible the evaluation could also be carried out for the national level.

As a second step, all partners were requested to give a brief overview of the results of the questionnaire and to present the two elements of green infrastructure that scored the highest and lowest in the evaluation questionnaire. During the afternoon session, partners discussed and fine-tuned the evaluation approach and the methodology and started analysing the results of the questionnaires. After the meeting, the REC team summarised the partners' experience with green infrastructure policies, based on their self-evaluation; the presentation of successful and unsuccessful practices; and the afternoon discussion. This systematised approach helped towards the development of a comprehensive chapter on green infrastructure policies in partner regions for the Green Infrastructure Action Toolkit. Partners were also asked to briefly justify their ranking in terms of the evaluation of different GI elements in order to provide the necessary information for the report.

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Methodology

The overall goal of the methodology was to set up a common language for the qualitative analysis of elements of green infrastructure in different countries and to pre-evaluate best practices for potential dissemination.

The evaluation comprised six steps:

- 1. The definition of the possible elements of green infrastructure in the different countries.
- 2. The identification of the main factors/attributes for the qualitative analysis.
- 3. The elaboration of a system for ranking the factors (where relevant) for the quantitative analysis.
- 4. The preparation of country profiles for further analysis.
- 5. Analysis of country profiles by main factor.
- 6. Initial conclusions regarding green infrastructure policies and planning instruments in the partner regions.

1. Possible elements of green infrastructure

The green infrastructure elements suggested for analysis were:

- National, regional or local ecological networks
- Natura 2000 network
- Legally protected areas
- Other nature reserves
- Areas with high nature value (e.g. farmland and forests)
- Other areas relevant for the protection of biodiversity (e.g. Ramsar sites)
- · Elements of green infrastructure in urban areas
- River floodplains, green corridors
- Designated landscapes
- Areas used for climate adaptation measures
- Green recreation areas
- Other initiatives



2. Proposed main factors and their ranking for the qualitative analysis

The aim of the evaluation was to collect information related to factors that function as qualitative or quantitative indicators. Data collection was carried out at the territorial level that the partners represent (regional, local) or --- where regional/local evaluation was not possible --- at national level. During the evaluation, a value between 0 and 3 was given for each factor. If precise data or information were not known, the assigned values could be based on expert judgement. Factors were selected based on parameters that allowed a comprehensive analysis of green infrastructure elements.

The following factors were used in the analysis:

- 1. Estimated level of connectivity
- 2. Estimated coverage of the element related to total surface
- 3. Legal background
- 4. Financial background
- 5. Methodology
- 6. Public awareness and acceptance

3. Scoring of the main factors for the qualitative analysis

In order to ensure the unbiased evaluation of the different GI elements by the partners, the REC provided the following guidance for completing the questionnaire.

Factor 1. Estimated level of connectivity: The permeability and connectivity of the given green infrastructure element within its set scope (national, regional, local level), which provides the ecological corridors and stepping stones necessary for animal and plant species.

Ranking:

- **high:** The territorial units of the element in question (e.g. Natura 2000 site) are overlapping or situated at a distance from each other that species are able to cover, therefore permeability is ensured.
- **medium:** The spatial coverage of territorial units is incomplete, or the distance between units is relatively big, but the ecological corridor more or less exists.
- **mosaic-like**: The territorial units of the green infrastructure element are scattered with large gaps in between, and the ecological corridor function



is limited (mostly available for species that can travel long distances).

• **fragmented:** The territorial units of the element are isolated and do not fulfil their ecological functions.

Factor 2. Estimated coverage of the element related to total surface: The spatial coverage of the element at the relevant level (national, regional, local).

Ranking:

- **high:** extensive coverage, with a minimum of 20 percent of the relevant territorial level covered.
- **medium:** medium coverage, with 5 to 20 percent of the relevant territorial level covered.
- **low:** low coverage, with less than 5 percent of the relevant territorial level covered.

Factor 3. Legal background: An analysis of the legal background of the green infrastructure element, including the existence of legal instruments and also relevant policies and implementing instruments that do not take the form of legal prescriptions (e.g. spatial plans), as well as their level of implementation.

Ranking:

- **strong:** A strong legal background or regulatory environment, which is implemented with sufficient force by the authorities.
- **medium:** A legal background of medium strength, incomplete and with limited implementation efforts.
- **weak:** The regulatory background lacks precise details or is only implemented partially.
- **no legal background:** No regulation is in place in relation to the element.

Factor 4. Financial background: An assessment of the availability of funding that influences the efficient functioning of the green infrastructure element. The evaluation of sources of funding (financial instruments applied by the EU or national or regional governments, e.g. management agreements, low-interest loans) covers their planning, legal background, communication and operation.

Ranking:

• **strong:** A stable financial background is present throughout the planning, drafting, communication and implementation of the GI element. (An indication should be provided here of processes that do not depend on the



availability of funding, such as volunteer groups, legal obligations.)

- **medium:** Financing is more or less adequate as a whole, but unavailable for certain phases (e.g. communication).
- **limited resources:** The financing of the GI element is inadequate; funding is rarely available and only for certain tasks/phases, which results in less efficient use.
- **no funding:** The are no sources of funding available, which limits the functioning of the GI element.

Factor 5. Methodology: A general methodological assessment of the given GI element and the possibility of it becoming best practice. The evaluation covers the drafting of the methodological background (criteria for area designation, databases, stakeholder involvement) and the institutional background, with the exception of issues covered by factors 3 and 4 (legal background and financial background).

Ranking:

- **high:** An excellent methodology in both theory and practice, with the inclusion of up-to-date methodological considerations. The institutional background is adequate and no increase is needed.
- **medium:** The methodology provides a sound scientific background, the institutional capacity is more or less sufficient to meet the challenges connected to the GI element. Problems are small in scale and do not hinder the functioning of the element.
- **Iow:** Due to the inadequate methodological and institutional background, implementation of the element is limited and the expected results cannot be achieved.

Factor 6. Public awareness and acceptance: An assessment of the public acceptance of the GI element, with special relevance to NGOs participating in the implementation process.

Ranking:

- **high:** Public awareness and acceptance of the element are high, indicated by bottom-up initiatives and volunteering.
- **medium:** Public acceptance of the green infrastructure element is significant, but the element is not among the most important public issues.
- **low:** Public acceptance is uncertain, and the issue is much debated in society.



Partner profiles

Based on the received questionnaires and justifications, the following partner profiles were drafted.

The Regional Environmental Center for Central and Eastern Europe (REC) (HU) – Central Hungary

Occupying an area of 93,028 km², Hungary is located at the crossroads of Central and South Eastern Europe. The country's total area is divided into 89,608 km² of land and 3,402 km² of water. With a large territory and fewer than 10 million inhabitants, the country has a low population density of just 107.2/km².

In terms of land use, 62.5 percent of the total territory is under agricultural cultivation, while 21.4 percent is under forestry management. The share of stateowned land is almost 20 percent. Areas under natural conservation and Natura 2000 sites are well established and highly regulated (9 percent and 21 percent of the total area of the country respectively).

Results of the questionnaire

In the case of the REC, the questionnaire was filled out for the national level, since national-level statistics from Hungary provide a sounder estimate than data from the local level. The analysis covered the national ecological network, the Natura 2000 network, the network of protected areas under national law, as well as locally protected areas, and areas with high nature values. The results of the analysis are summarised in the table below.



Table 1: Evaluation of green infrastructure in Hungary

			National ecological network	Natura 2000 site and/or network	Network of areas protected by national law	Network of locally protected areas	Areas with high nature values	Elements of green infrastructure in urban areas
(evalu	Level of evaluation ation is expected at national level or at the level of the given project partner - regional local)	Banking	Vational	Vational	Vational	Vational	Vational	Vational
ive factors	Factor 1.: Estimated level of connectivity	High: 3 Medium: 2 Mozaik-like: 1 Fragmented: 0	3	3	2	1	2	1
Qualitati	Factor 2.: Estimated coverage of the element related to total surface	High: 3 Medium: 2 Low: 1	3	3	2	1	1	1
	Factor 3.: Legal background	Strong: 3 Medium: 2 Weak: 1 No legal background: 0	2	2	2	2	2	2
icy factors	Factor 4.: Financial background	Strong: 3 Medium: 2 Limited resources: 1 No funding: 0	0	2	2	1	3	1
Poli	Factor 5.: Methodology	High: 3 Medium: 2 Low: 1	2	2	3	2	2	1
	Factor 6.: Public awareness and acceptance	High: 3 Medium: 2 Low: 1	1	2	2	2	3	2
Di	issemination/Transferability potential		11	14	13	9	13	8

During the evaluation, the Natura 2000 network ranked highest, followed by the network of protected areas and the national ecological network.





*Chart 1: Scores for Hungary compared to partnership averages*¹

Justifications per factor

Factor 1. Estimated level of connectivity

In terms of the connectivity of the green infrastructure elements, the Hungarian experience shows that at national level the national ecological network and the Natura 2000 network are the most relevant. Local initiatives have not yet been connected at national level, therefore these received a lower score for this factor (locally protected areas, elements of GI in urban areas). The maps that form the basis of the evaluation can be found in the annex.

Factor 2. Estimated coverage of the element related to total surface

In the analysis carried out by the REC, the national ecological network and the Natura 2000 network were found to have the largest coverage. In the justification part of the questionnaire the following coverage data were included: national ecological network –approximately 30 percent, of which 16 percent are core areas; Natura 2000 network (overlapping SPA and SAC areas) – 21 percent; protected areas – 9 percent; locally protected areas – 0.5 percent; areas with high nature values – designated areas 9 percent, of which 2 percent are eligible for area-based subsidies for nature protection. There are no coverage data available for urban green areas.

Factor 3. Legal background

According to the evaluation, GI elements in Hungary — especially the nationallevel networks — have a legal background of average strength. The analysis

¹ Charts only include those GI elements and levels of investigation (national/regional) for which we received data from partners.



showed that some elements of the related legislation are especially strong. However, for almost all the assessed GI elements there are legal gaps that hinder the proper implementation of the legislation.

The legal basis of the networks is given in Act 1996/LIII, which provides general, comprehensive protection for these areas. Regarding the national ecological network, the above act establishes the network's role in the territorial development process, while for protected areas, Natura 2000 sites and locally protected areas it determines the process of area designation, general goals and management principles. While there are several other government decrees supporting the implementation of the Natura 2000 network, Natura 2000 management plans are not clearly regulated, especially in terms of their entry into force and sanctions.

Regarding protected areas, the evaluation shows that environmental management plans were not prepared for the whole of the network, which has an obvious impact on the implementation process. As for locally protected areas, the role of local governments is regulated in detail in the legislation. In the case of areas with high nature values, the highest regulatory level is a ministerial order, which can be regarded as satisfactory considering that the network serves the purposes of a funding policy.

In the case of urban green areas, the evaluation concluded that standardised implementation of the aims of the regulation depends on the local authorities to which competence has been delegated.

Factor 4. Financial background

For this factor, the results of the analysis by the REC for the different GI elements show a less homogeneous picture than, for example, in the case of factor 3. It is surprising that otherwise highly significant elements (such as the national ecological network) do not have their own funding sources. For factor 4, the highest score was assigned to the network of areas with high nature values, which provides compensation to farmers who voluntarily apply species and habitat protection measures. In the case of the Natura 2000 network, compensation and agri-environment payments form a diverse subsidy scheme, covering all levels. Unfortunately, the amount of compensation is very low (EUR 38/hectare/year). In the case of the network of protected areas, the funding schemes provide possibilities for the implementation of habitat development and species protection programmes, carried out by governmental organisations (e.g. national park directorates). Furthermore, a smaller amount of funding is available in Hungary for compensation for damage caused by protected species and restrictions related to such species.

Funding possibilities for locally protected areas are mostly aimed at the maintenance of arboretums and botanical gardens, while the analysis found no separate financing options for urban green infrastructure.



Factor 5. Methodology

In terms of the methodology of site designation and management, the REC's analysis ranked the network of protected areas on top. Besides having a detailed and well-regulated methodology for area designation, the network's scores were also raised as a result of stakeholders' high level of involvement in the participatory process for the designation of protected areas and in consultations about management requirements. Although the methodology can be considered a good practice, unfortunately it has to be noted that in most cases local stakeholders do not support the designation of protected areas, due to the expected land-use restrictions it would entail. The pace of designation of new areas has therefore slowed down in the past decade.

The analysis also revealed that in the case of the Natura 2000 network, the spatial databases used for designation have been developed; however, due to the lack of stakeholder consultations, the network could not receive the maximum score. The lack of consultations also had an effect on the public acceptance of the network. In addition, the necessary institutional development of nature protection agencies has not been carried out after site designation, thus there are several difficulties in implementation that have set back the proper functioning of the network, especially in relation to the physical presence of the authorities at the sites.

The designation of the national ecological network was carried out using the best available national-level data at the time, but the process lacked stakeholder involvement. In the case of locally protected areas, the designation methodology is regulated by the act on nature protection and is implemented by local authorities.

The evaluation of the designation methodology for areas with high nature values is again twofold. On the one hand, designation in Hungary did not closely follow the related project of the European Union: the methodology was only changed to acknowledge previous experience related to the subsidy system for high nature value protection (e.g. in the case of the Great Bustard and the Eastern Imperial Eagle — that is, the involvement of large-scale arable land around the habitats of the Great Bustard and the Eastern Imperial Eagle in the programme). The Hungarian designation process was based on feasibility studies prepared for the sites with the involvement of local stakeholders.

In the case of urban green areas, no standard methodological approach was identified. The municipalities responsible for maintenance may implement measures to protect woody plant vegetation and individual trees, and in some cases create a register of trees.



Factor 6. Public awareness and acceptance

When looking at the public awareness and acceptance aspect in the evaluation by the REC, the different GI elements show a varied picture. The lowest score was assigned to the national ecological network, due to the fact that this category serves mostly as a basis for spatial planning and is then implemented within the prepared plans. Urban green areas mostly generate higher awareness in larger cities, becoming evident once there is an infrastructural development threatening an area and leading to public outcry.

In the case of the Natura 2000 network, the lower scores were caused by the lack of stakeholder involvement already mentioned in connection with factor 5. However, this is continuously improving as a result of the related funding possibilities.

The analysis shows that the network of protected areas, which has long had a stable regulatory and institutional background, is seeing an increase in public acceptance due to the possibility of profiting from the ecosystem services offered by the sites (e.g. ecotourism services).

While locally protected areas enjoy varying levels of local acceptance, the evaluation ranked areas with high nature values as the most known and accepted GI element. This can be explained by the consultations included in the process of site designation and the creation of land-use requirements, as well as by the associated subsidies.



Flevoland Province Council (NL) – Province of Flevoland

Flevoland, situated in the central part of the Netherlands, is among the smallest Dutch provinces in terms of both total land area (1,419 km²) and population density (277 inhabitants/km²). The province comprises just six municipalities and is dominated by agricultural land (42 percent of the total area), followed by backwater ("binnenwater" in Dutch) (41 percent of the total area). Forest and nature cover 9 percent of the province's total territory. Nearly half of the inhabitants (395,525) live in Almere, the largest city in the province.

	% Flevoland	% the Netherlands
Traffic infrastructure	1	3
Developed landscape	3	8
Semi-developed landscape	1	1
Recreational sites	2	2
Agricultural area	42	55
Forest and nature	9	12
Backwater	41	9
Open water	0	10
Total	100	100

Table 2: Land use in Flevoland and the Netherlands, 2011

Source: Province of Flevoland www.flevoland.nl

The mainstay of green infrastructure in Flevoland is an area of natural habitat called Oostvaardersland. What was a reclamation project 40 years ago has been transformed into a new natural habitat. Work on the ambitious plan began in 2006 and includes the conversion of 1,800 hectares of agricultural land in order to reach a foreseen area of 15,000 hectares. The emphasis is on achieving a much-desired harmony between ecology, recreation and the economy in order to fulfil multiple functions. Unfortunately, despite a promising beginning, project implementation has recently become mired in problems after the Dutch national government withdrew financial support with no new agreement in sight. In addition, the conversion of farmland to a nature conservation area poses a major challenge. As a result, the project has come to a halt.



Results of the questionnaire

			hoursen loops longisch	ואפנוטוופו פרטוספורפו וופראיטו	Natura 2000 site and/or	network	Network of areas	protected by national law	Network of locally protected areas	Areas with high nature values	Elements of green	areas	River floodplains, green corridors		
(evalu	Level of evaluation Jation is expected at the level of the given project		cional	giona cal	cional	giona	ional	giona	giona cal	giona	ional	giona	cal cal		
	partner - national or regional/local)	Ranking	Nat	Re I/Io	Nat	Reg I/lo	Nat	Reg I/lo	Reg I/lo	Reg I/lo	Nat	Reg I/lo	Nat Reg I/Io		
ive factors	Factor 1.: Estimated level of connectivity	High: 3 Medium: 2 Mozaik-like: 1 Fragmented: 0	2	1	2	2	0	0	0	0	2	2			
Qualitat	Factor 2.: Estimated coverage of the element related to total surface	High: 3 Medium: 2 Low: 1	1	2	2	2	1	1	1	1	1	1	Partially included in		
	Factor 3.: Legal background	Strong: 3 Medium: 2 Weak: 1 No legal background: 0	2	2	3	3	0	0	3	1	0	0	national ecological network as green corridors,		
Policy factors	Factor 4.: Financial background	Strong: 3 Medium: 2 Limited resources: 1 No funding: 0	1	1	2	2	1	1	2	1	3	3	regionally no rivers, but complete connection		
	Factor 5.: Methodology	High: 3 Image: 3								1	2	2	of sweet water lakes (see		
	Factor 6.: Public awareness and acceptance	High: 3 Medium: 2	2	2	1	1	1	1	2	3	3	3	related map in annex)		
D	i issemination/Transferability potential	1.000.1	11	11	13	11	4	4	8	7	11	11			

Table 3: Evaluation of green infrastructure in Flevoland

Based on the assessment carried out at national and regional levels, the Natura 2000 network was assigned the highest score on the national level as well as on the regional/local level along with the national ecological network and elements of GI in urban areas. In Flevoland, 40 percent of territories, 9 percent of land and 100 percent of waters are designated as Natura 2000 protected areas, which in total accounts for almost 317,000 ha.



Chart 2: Scores for the Netherlands and the Province of Flevoland compared to partnership averages



Justification per factor

Factor 1. Estimated level of connectivity

Green infrastructure is still incomplete, with only a few robust ecological corridors. Most of the green areas are isolated and the general level of connectivity is rather poor. Although the total Natura 2000 protected area is quite sizeable, the success of conservation very much depends on the adjacent areas outside the Natura 2000 network. The overall status of GI in Flevoland further suffered when the plans to develop the large natural habitat Oostvaardersland stalled and were later cancelled altogether. The upside is good connectivity of the waters around Flevoland.

Factor 2. Estimated coverage of the element related to total surface

With regard to the coverage of particular GI elements in relation to the total surface, the highest scores were ascribed to the national ecological network and the Natura 2000 network. Given the small area and high population density in the Netherlands, land coverage is rather low compared to some of the other countries. Thus the national ecological network, which scores the highest points, accounts for only 10 percent of the land and 85 percent of waters at national level, and 8 percent of land and 90 percent of waters at regional level. The national ecological network is on a par with the Natura 2000 network, which covers 5 percent of land (SAC and SPA) and 90 percent of waters at national level and 4 percent of land and 90 percent of waters at regional level.

The network of protected areas (Ramsar sites) fully coincides with Natura 2000 water bodies at both national and regional levels. Very little coverage is ascribed to the network of locally protected areas, areas with high nature values and elements of GI in urban areas, all with a range of 1 to 2 percent.



Factor 3. Legal background

The legal provisions enforcing various levels of protection contain both national and regional laws and regulations, including the national legal system that sets out rules for offsets and compensations, and other prominent legislation such as the National Act for Nature Conservation and the Species Protection Act.

While the Natura 2000 network enjoys the strongest protection at the national and regional levels, characterised by the individual assessment (habitat checks) of each of the submitted projects, the protection of the national ecological network is fully at the discretion of the provinces enforcing the national legislation. No special legislation is in place for Ramsar sites, since all of them are part of Natura 2000, SPA and/or SAC. Finally, the elements of green infrastructure in urban areas are treated at the community level by carrying out an impact assessment and by the formal requirement to receive a permit.

Factor 4. Financial background

A variety of financial sources are used to ensure the ongoing stewardship of GI. These include funding provided by the national government, project funding from national lotteries, private funds via membership contributions, agricultural payment schemes to limit the excessive use of agricultural land, which would threaten avifauna, and finally funding programmes such as LIFE+ and ERDF.

Factor 5. Methodology

The methodological assessment of GI and of the possibility of it becoming a best practice involved mapping out the methodological and institutional background of each of the GI elements. Green infrastructure in the Netherlands has a long history and continuous efforts have been made to preserve natural reserves and connect the core, larger areas with ecological corridors. In this sense, the national ecological network at regional level ranked the highest, with ongoing monitoring and surveying of the state of biodiversity. The Natura 2000 network benefits from the best available techniques and databases but lacks stakeholder involvement during site designation. No special legislation has been put in place for the network of protected areas, since all Ramsar sites are Natura 2000 sites, SPA and/or SAC and thus guaranteed a high level of protection.

The category "areas with high nature values" is based on voluntary participation among farmers, and ecological criteria for offset payments are imposed only if the area becomes designated. As for GI elements in urban areas, no uniform methodology exists. However, forests near cities are part of the regional ecological network.

Factor 6. Public awareness and acceptance

The highest level of public awareness and acceptance was observed in areas with high nature values due to the long history of protection of meadow birds and compensation for grazing geese and swans among farmers and the public at the



local, regional and national levels.

The national and regional ecological networks enjoy average levels of awareness and acceptance. Thanks to public debates there are generally high levels of acceptance for environmental protection but less public awareness of policy. The Natura 2000 network suffers from negative associations resulting from the lack of stakeholder involvement during site designation. The drafting of management plans, on the other hand, attracts a lot of public involvement and support. The network of protected areas is a well-known network with stable rules and procedures. High acceptance levels are indicated by people's efforts to conserve the last remnants of pristine areas. Similarly, the network of locally protected areas enjoys a high level of acceptance and awareness at local level. Green infrastructure elements in urban areas are well accepted, although the level of related public activity is very low.



Plovdiv Regional Development Agency (BG) – Plovdiv region

The green infrastructure concept is relatively new in Bulgaria and is therefore not high on the region's political agenda. The concept has been introduced in Bulgaria in the Environmental Protection Act, the Protected Areas Act and other relevant national ecological and environmental legislation, and in international conventions to which Bulgaria is a signatory. Green infrastructure is most commonly understood in Bulgaria as protected areas and strict nature reserves (although not interconnected), and spatial planning is limited to the management of nature reserves.

There are two national reserves, seven natural sites and 32 protected areas on the territory of Plovdiv region, which are mainly located in three mountain regions: the Rhodopes, the Central Balkan Mountains and Sredna Gora. The Regional Inspectorate of Environment and Water is the managing authority of all reserves, Natura 2000 sites and water sites. Most of the protected areas are managed by both the Regional Inspectorate of Environment and Water and the Regional Directorate of Forestry.

Results of the questionnaire

In the case of Plovdiv Regional Development Agency, the questionnaire was filled in for both national level and regional/local level. The analysis covered the national ecological network, the Natura 2000 network, the network of areas protected by national law, and locally protected areas. Areas with high nature values, green infrastructure in urban areas and green corridors and floodplains were also analysed. The results of the analysis are included in Table 4.



Table 4: Evaluation of green infrastructure in Bulgaria and Plovdiv region

			Matterial Factorial Matterials	National Ecological Network	Natura 2000 site and/or	network	Network of Protected Areas by	national law	Network of Locally protected	areas		Areas with High Natural Values	Network of other areas (eg.	Ramsar sites)	Elements of green infrastructure	in urban areas		kiver tioodplains, green corridors	Other initiatives (please	describe)
Level of evaluation (evaluation is expected at the level of the given project patter - pational or		Ranking	National	Regiona I/local	National	Regiona I/Iocal	National	Regiona I/Iocal	National	Regiona I/local	National	Regiona I/local	National	Regiona I/local	National	Regiona I/local	National	Regiona I/local	National	Regiona I/Iocal
ve factors	Factor 1.: Estimated level of connectivity	High: 3 Medium: 2 Mozaik-like: 1 Fragmented: 0	2	1	2	1	2	2	1	1	2	1	2	1	1	1	1	1		
Qualitative	Factor 2.: Estimated coverage of the element related to total surface	High: 3 Medium: 2 Low: 1	2	2	2	1	2	2	1	1	2	1	2	1	1	1	1	1		
	Factor 3.: Legal background	Strong: 3 Medium: 2 Weak: 1 No legal background: 0	2	2	2	2	2	2	2	2	2	2	1	1	2	2	1	1		
olicy factors	Factor 4.: Financial background	Strong: 3 Medium: 2 Limited resources: 1 No funding: 0	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1		
	Factor 5.: Methodology	High: 3 Medium: 2 Low: 1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1		
	Factor 6.: Public awareness and acceptance	High: 3 Medium: 2 Low: 1	_1	_1	2	2	1	1	1	1	1	_1	1	1	1	2	1	1		
Diss	emination/Transferability potential		11	9	12	8	10	9	7	7	9	7	8	2	7	8	6	6		

In general, GI elements at national level were assigned a higher score compared to GI elements at regional level, with the exception of GI in urban areas.

At national level, the Natura 2000 network ranked highest, followed by the national ecological network and the network of areas protected by national law. At regional level, the network of areas protected by national law ranked the highest, followed by the national ecological network, the Natura 2000 network and GI in urban areas.







Justifications per factor

Factor 1. Estimated level of connectivity

In terms of the connectivity of green infrastructure elements, the Bulgarian experience shows that at national level the national ecological network, the Natura 2000 network, the network of areas protected by national law, areas with high nature values and network of other areas are the most relevant. At regional level, the network of other areas is not present apart from where the sites are located in the Natura 2000 network.

Since protected areas are designated at national level, the network of locally protected areas is of less importance and therefore received a lower score for this factor both at national and regional level. River floodplains and green corridors also scored lower, the main reason being that rivers are generally protected under the same regulations as the land in the given territory.

The network of areas protected by national law was assigned an average score, justified by the existence of relatively few, small sites in the region. At regional level, there is limited presence of Natura 2000 sites and in general the connectivity of the green infrastructure elements is lower, although many cities in the region have fragmented or basic GI elements.

The maps that form the basis of the evaluation can be found in the annex.

Factor 2. Estimated coverage of the element related to total surface

In the evaluation made by Plovdiv RDA, the national ecological network, the



network of areas protected by national law, the Natura 2000 network, the network of other areas and areas with high nature values were found to have average coverage at national level, while the score remains the same also at regional level for the first three elements. The scores for coverage of GI elements in urban areas, river floodplains and green corridors and the network of locally protected areas were lower at both national and regional level.

The scores for the coverage of GI elements at regional level are lower than the scores at national level, the main reason being the limited presence of protected areas and Natura 2000 sites in the region. Although the score for GI in urban areas is the same at national and regional level, it should be noted that GI elements in the cities are above the national average.

The Natura 2000 network covered approximately 34.3 percent of the territory of Bulgaria as of May 2011. Under the Birds Directive, there are 118 SPA sites (22.6 percent of the territory of the country) and under the Habitats Directive there are 231 SAC sites (approximately 30 percent of the territory of the country).

The national ecological network has been developed according to the Biological Diversity Act. Its objectives include the long-term conservation of biological, geological and landscape diversity in the country; the provision of sufficient areas for wildlife to breed, feed and rest; the creation of conditions for genetic exchange between separate populations and species; the participation of Bulgaria in European and global environmental networks; and the limitation of negative anthropogenic impacts on protected areas. At present there are 955 protected areas designated in Bulgaria, covering approximately 5.1 percent of the country's territory.

According to the Protected Areas Act, there are six categories of protected areas: reserves (55), national parks (3), natural monuments (350), managed nature reserves (35), nature parks (11), and protected sites (501). There is also a pilot network (under Natura 2000) of small protected sites for plant species in Bulgaria using the plant micro-reserve model.

Ten Bulgarian wetlands, with a total area of 20,306 hectares, are now covered by the Ramsar Convention: Lake Atanasovsko, the Belenski Marshes, Lake Durankulak, Ibisha Island, Lake Shabla, Poda Protected Area, Lake Pomorie, the Ropotamo Complex, Silver Lake and Lake Vaya. Bulgarian legislation does not specifically address Ramsar sites, but according to the Biodiversity Act these sites are included in the national ecological network.

Along the lower Danube River, the restoration of floodplains is providing room to retain and safely release floodwaters. In 2000, Bulgaria, Romania, Moldova and Ukraine agreed to restore 2,236 km² of floodplain to form the 9,000 km² "Lower Danube Green Corridor".



Factor 3. Legal background

Environmental protection is mostly regulated at national level, and the regional enforcement of the legal provisions is carried out by the regional inspectorates of the Ministry of Environment and Waters. There is a strict legal framework for regulating protected areas in Bulgaria.

The national ecological network consists of protected areas declared under the Protected Areas Act and also includes Ramsar sites and important plant and bird areas that are considered priorities. At present, 955 protected areas have been declared in Bulgaria covering approximately 5.1 percent of the country's territory. The protected areas are part of the European ecological network, the Natura 2000 network, which in Bulgaria is regulated by the Biological Diversity Act.

The regulations for most GI elements were given average scores in the evaluation at national level, with the exception of the network of other areas, river floodplains and green corridors, which were evaluated by Plovdiv RDA as weak. It should be noted that the country faces problems with the enforcement of the regulations. The implementation of the legislation for the national ecological network is based on spatial planning procedures. A legal framework for designating areas with high nature values exists, and the process started in 2002. There is no specific designation of Ramsar sites or other such areas, which is reflected in the assigned score. The Biodiversity Act includes Ramsar sites in the national ecological network.

The Plovidiv Regional Inspectorate of Environment and Water is the regional body of the Bulgarian Ministry of Environment and Water implementing activities related to environmental protection and conservation.

In terms of ownership, protected areas in Bulgaria are in general state property. The regional authorities have limited power in terms of the management of the territories and land use. The Ministry of Agriculture and Forestry is responsible for the management and protection of protected areas that are not state property. If the GI is municipal property, the policy framework is developed by each municipality through the seven-year Municipal Development Plan, which is evaluated and updated each year.

In the case of urban green areas, competences for their protection and maintenance are delegated to local authorities.

Factor 4. Financial background

The evaluation results for this factor show that GI elements in Bulgaria are underfunded, and this is especially problematic at regional and local level. An average score was assigned at national level to the national ecological network, the Natura 2000 network and the network of areas protected by national law, while the rest of the GI elements received a lower score at both national and regional level.



In general, even the funding for the first two elements (the national ecological network and the Natura 2000 network) was evaluated as insufficient compared to the needs. The financing of the network of other areas (e.g. Ramsar sites) is not relevant for the regional/local level, and at national level there is no special financing for such sites and sometimes they are treated under other categories.

For the national ecological network there are some options for private financing, and for the Natura 2000 network possibilities for financing via the CAP and other methods exist, but the funds are not sufficient. In the case of the network of areas protected by national law, financing aims to support habitat development and compensation is available for species protection measures. Financial support for locally protected areas is isolated and handled by the local authorities.

Funding possibilities for compensating farmers working in areas with high nature values exist, but the overall impact remains insignificant. Financing for GI elements in urban areas is problematic as the funds are not sufficient for the proper maintenance and development of GI. The financing of river floodplains protection is not considered a priority and is usually dealt with by the owners.

Factor 5. Methodology

In terms of the methodology of site designation and management, the analysis carried out by Plovdiv RDA shows that there are gaps and insufficient methodological means at both national and regional level in the majority of the analysed GI elements.

The national ecological network was ranked top with an average score for both national and regional level, and the Natura 2000 network was assigned an average score at national level. For the rest of the elements there is a homogeneous picture showing that the methodology of site designation and management is less developed.

It should be noted that Bulgaria follows a centralised approach, as the methodology in most cases is defined at national level and regions have a limited role in this process. In the case of the Natura 2000 network and areas with high nature values, the methodology includes practices and lessons from other EU member states, but for other elements, such as the network of protected areas, experience from other countries is not taken into consideration. Regarding the national ecological network, advanced techniques and databases are available for spatial designation but this is hampered by poor stakeholder involvement. River floodplains are not treated as a separate issue. Green corridors are a relatively new topic and there is no methodology adopted for them.

The Bulgarian Ministry of Environment and Water has initiated the development of guidelines for the integration of environmental policy during the programming period 2014–2020, which are awaiting discussion and adoption.



Factor 6. Public awareness and acceptance

When looking at the public awareness and acceptance aspect in the evaluation by Plovdiv RDA, the different GI elements show similar scores. The highest result was achieved by the Natura 2000 network at national and regional level and by GI in urban areas at regional level, which received an average score, while the rest of the elements at both national and regional level were evaluated as less known and accepted. In the case of the Natura 2000 network, there was poor stakeholder involvement during the designation of the sites and no overall public consensus was reached on the subject, which led to the reopening of the debate on site designation and on how well the measures are enforced. The limited awareness and acceptance of the rest of the elements is indicated in the analysis by the assigning of a lower score.

There is limited public discussion and awareness of the network of protected areas (e.g. Ramsar sites), apart from among some environmental NGOs. Regarding locally protected areas, the public are aware of most regional reserves and other GI elements, but there is little debate and their priority is relatively low.



Stara Zagora REDA (BG) – Stara Zagora region

The green infrastructure concept is relatively new in Bulgaria and is therefore not high on the region's political agenda. The concept has been introduced in Bulgaria in the Environmental Protection Act, the Protected Areas Act and other relevant national ecological and environmental legislation, and in international conventions to which Bulgaria is a signatory. Green infrastructure is most commonly understood in Bulgaria as protected areas and strict nature reserves (although not interconnected), and spatial planning is limited to the management of nature reserves.

Stara Zagora region has several protected areas located exclusively or partially on the region's territory. These include one national park (Central Balkan National Park), four reserves, four Natura 2000 sites, and 13 protected areas.

Results of the questionnaire

In the case of SZREDA, the questionnaire was filled in for both the national level and the regional/local level. The analysis covered the national ecological network, the Natura 2000 network, the network of areas protected by national law, as well as locally protected areas. Areas with high nature values, green infrastructure in urban areas and green corridors and floodplains have also been analysed. The results of the analysis are summarised in the table below.



Table 5: Evaluation of green infrastructure in Bulgaria and Stara Zagora region

				National ecological network	Natura 2000 site and/or	network	Network of areas	protected by national law	Network of locally	protected areas	Areas with high nature	values	Network of other areas	(eg. Ramsar sites)	Elements of green	Infrastructure in urban areas	River floodplains, green	corridors
(evalı	Level of evaluation Jation is expected at the level of the given project partner - national or regional/local)	Ranking	National	Regiona I/local	National	Regiona I/local	National	Regiona I/local	National	Regiona I/local	National	Regiona I/local	National	Regiona //local National Regiona		National	Regiona I/local	
Qualitative factors	Factor 1.: Estimated level of connectivity	High: 3 Medium: 2 Mozaik-like: 1 Fragmented: 0	2	1	2	1	2	1	1	1	2	1	2	0	1	2	1	1
	Factor 2.: Estimated coverage of the element related to total surface	High: 3 Medium: 2 Low: 1	2	1	3	1	3	1	1	1	1	1	2	0	1	2	1	0
Policy factors	Factor 3.: Legal background	Strong: 3 Medium: 2 Weak: 1 No legal background: 0	2	2	3	2	2	2	2	2	2	2	1	0	2	2	1	1
	Factor 4.: Financial background	Strong: 3 Medium: 2 Limited resources: 1 No funding: 0	2	1	2	1	2	2	1	1	1	1		0	1	1	1	1
	Factor 5.: Methodology	High: 3 Medium: 2 Low: 1	2	2	2	1	1	1	1	1	1	1	2	1	1	2	1	1
	Factor 6.: Public awareness and acceptance	High: 3 Medium: 2 Low: 1	1	1	2	2	1	1	1	2	2	2	1	1	1	2	1	1
D	issemination/Transferability potential		11	8	14	8	11	8	7	8	9	8	8	2	7	11	6	5

At national level, the Natura 2000 network ranked highest, followed by the national ecological network and the network of areas protected by national law. At regional/local level, elements of green infrastructure in urban areas ranked the highest, followed by the national ecological network, the Natura 2000 network and the network of locally protected areas.



Chart 4: Scores for Bulgaria and Stara Zagora region compared to partnership averages



Justifications per factor

Factor 1. Estimated level of connectivity

In terms of the connectivity of GI elements, Bulgarian experience shows that at national level the national ecological network, the Natura 2000 network, the network of areas protected by national law and the network of other areas are the most relevant.

Since protected areas are designated at national level, the network of locally protected areas is of less importance and therefore received a lower score for this factor. River floodplains and green corridors were also scored lower, the main reason being that rivers are generally protected under the same regulations as the land in the given territory.

At regional level there are a limited number of Natura 2000 sites (mainly at the periphery) and in general the connectivity of the GI elements is lower, with the exception of GI elements in urban areas. The region's main cities have several local GI elements.

The maps that form the basis of the evaluation can be found in the annex.

Factor 2. Estimated coverage of the element related to total surface

In the evaluation made by SZREDA, the network of areas protected by national law and the Natura 2000 network were found to have the largest coverage, followed by the national ecological network and the network of other areas.



The scores for the coverage of GI elements at regional level are lower than the scores for national level, the main reason being the limited number of protected areas and Natura 2000 sites in the region. However, the number of GI elements in urban areas in the region is above the national average.

The Natura 2000 network covered approximately 34.3 percent of the territory of Bulgaria as of May 2011. Under the Birds Directive there are 118 special protection areas (SPAs) (22.6 percent of the territory of the country), and under the Habitats Directive there are 231 special areas of conservation (SACs) (approximately 30 percent coverage of the territory of the country).

Factor 3. Legal background

Environmental protection is mostly regulated at national level, and the regional enforcement of legal provisions is carried out by the regional inspectorates of the Ministry of Environment and Water. There is a stringent legal framework for regulating protected areas in Bulgaria. The framework for the national ecological network comprises the Environmental Protection Act, the Biological Diversity Act, and the Protected Territories Act. The regulations governing the Natura 2000 network included in the Biological Diversity Act are evaluated as especially strong, and the legislation for most of the remaining GI elements is of average strength. It should be noted that the country faces problems with the enforcement of the regulations. The implementation of the legislation for the national ecological network for designating areas with high nature values exists, and the process started in 2002. There is no specific designation of Ramsar sites or other such areas; only the Biodiversity Act includes these areas in the national ecological network.

The Ministry of Environment and Water is responsible for the protection of rivers, but the status of their floodplains is not sufficiently regulated. Green corridors are considered in the general ecological framework, but to a limited extent.

In terms of ownership, protected areas in Bulgaria are in general state property. Regional authorities have limited power in terms of the management of territories and land use. The Ministry of Agriculture and Forestry is responsible for the management and protection of protected areas that are not state property. If GI is municipal property, the policy framework is developed by each municipality through the seven-year Municipal Development Plan, which is evaluated and updated yearly.

In the case of urban green areas, competence for their protection and maintenance is delegated to local authorities

Factor 4. Financial background

The results of the evaluation for this factor show that GI elements in Bulgaria are underfunded, and this is especially problematic at regional and local level. An average score was assigned to the network of areas protected by national law at



both regional and national level, and the national ecological network and Natura 2000 network also received the same score at national level. The rest of the elements received a lower score, indicating limited financial resources to support GI elements. In general, even the funding for the first three elements was evaluated as insufficient compared to the needs. For the national ecological network, there are some options for private financing; and for the Natura 2000 network there are possibilities of financing via the Common Agricultural Policy (CAP) and other methods. In the case of the network of areas protected by national law, financing aims to support habitat development and compensation is available for species protection measures.

Funding possibilities for compensating farmers working in areas with high nature values exist, but the overall impact remains insignificant. Financing GI elements in urban areas is problematic as the funds are not sufficient for the proper maintenance and development of GI. The financing of river floodplains protection is not considered a priority and is usually dealt with by the owners.

Factor 5. Methodology

In terms of the methodology of site designation and management, the SZREDA analysis ranked on top, with an average score, the national ecological network, the Natura 2000 network and the network of other areas; and at local/regional level, GI in urban areas. It should be noted that Bulgaria follows a centralised approach, as in most cases the methodology is defined at national level and regions have a limited role in this process. In the case of the Natura 2000 network and areas with high nature values, the methodology adopts practices and lessons from other EU member states, but for other elements, such as the network of protected areas, experience from other countries is not taken into consideration. Regarding the national ecological network, advanced techniques and databases are available for spatial designation, but this is hampered by poor stakeholder involvement in the process.

The methodology applied at regional level for GI in urban areas is slightly more advanced than at national level. River floodplains are not treated as a separate issue, and green corridors are a relatively new topic and no relevant methodology has been adopted.

Factor 6. Public awareness and acceptance

When looking at the public awareness and acceptance aspect in the evaluation by SZREDA, the different GI elements show a diverse picture. The highest score at both national and regional level was assigned to the Natura 2000 network and areas with high nature values, while at local level the network of locally protected areas and GI in urban areas are the most widely known and accepted GI elements. In the case of the Natura 2000 network, there was poor stakeholder involvement during the designation of the sites, and no overall public consensus was reached on the subject, which led to the reopening of the debate on which areas are designated and how well the measures are enforced. The limited public



discussions on and awareness of the rest of the elements are indicated in the analysis through a lower score for these elements.



Nicosia Development Agency (CY) – Cyprus

Cyprus is a small European island country located in the north-eastern corner of the Mediterranean Sea. The island covers 9,251 km² and has a population of 1,138,071 people, 70 percent of whom live in urbanised areas. Geographical features include the central plain, the Mesaoria Plain, which is bordered by the Kyrenia and Pentadactylos mountains to the north, and the Troodos mountain range to the south and west. There are also scattered but significant plains along the southern coast. The natural environment and biodiversity are varied due to the geographical position of the island. Some of the more significant environmental issues include water resource problems, coastal degradation and the loss of wildlife habitats as a result of urbanisation.²

Results of the questionnaire

During the assessment, the national ecological network, Natura 2000 sites, areas protected by national law, areas with high nature values, the network of other areas (e.g. Ramsar sites), river floodplains as well as GI elements in urban areas were evaluated. Locally protected areas were not analysed as a separate group, since in Cyprus all protected areas are designated and managed at national level. River floodplains are part of the evaluation, but in fact they are not considered separately from the surrounding territories (and therefore receive the same scores as other protected areas). The reason for this is the temporary nature of river flows on the island (only in the winter).

The assessment was carried out for national and local level. However, local authorities in Cyprus (municipalities and community councils) have very limited jurisdiction for creating, developing and implementing policies and actions regarding green infrastructure. Most activities in this field depend on the control of the central government through the Department of Environment of the Ministry of Environment and Natural Resources. The scores for local level are therefore omitted from the detailed evaluation.

The results of the assessment are summarised in the table below.

² Source: CIA World Factbook



Table 6:	Evaluation	of areen	infrastructure	in Cyprus
	LValuation	or green	minustructure	in oyprus

			National ecological network	Natura 2000 site and/or network	Network of areas protected by national law	Areas with high nature values	Network of other areas (eg. Ramsar sites)	Elements of green infrastructure in urban areas	River floodplains, green corridors
(evalu	Level of evaluation ation is expected at the level of the given project partner - national or regional/local)	Ranking	National	National	National	National	National	National	National
tive factors	Factor 1.: Estimated level of connectivity	High: 3 Medium: 2 Mozaik-like: 1 Fragmented: 0	1	2	0	1	0	0	1
Qualitat	Factor 2.: Estimated coverage of the element related to total surface	High: 3 Medium: 2 Low: 1	3	3	1	1	1	1	1
	Factor 3.: Legal background	Strong: 3 Medium: 2 Weak: 1 No legal background: 0	2	2	3	2	2	1	2
Policy factors	Factor 4.: Financial background	Strong: 3 Medium: 2 Limited resources: 1 No funding: 0	2	2	2	2	2	0	1
đ	Factor 5.: Methodology	High: 3 Medium: 2 Low: 1	2	2	2	2	1	1	1
	Factor 6.: Public awareness and acceptance	High: 3 Medium: 2 Low: 1	1	1	1	1	1	1	1
Di	issemination/Transferability potential		11	12	9	9	7	4	7

Based on the assessment, the highest score was given to the Natura 2000 network, followed by the national ecological network. Of all the groups, GI elements in urban areas received a significantly low score.





Chart 5: Scores for Cyprus compared to partnership averages

Justifications per factors

Factor 1. Estimated level of connectivity

The first two factors were scored for each element based on the maps in the annex to this document.

At national level, the connectivity of the Natura 2000 network was given a medium score, as the ecological corridor is more or less existent. The national ecological network and areas with high nature values show greater gaps in their connectivity, while the rest of the elements completely lack connectivity between the sites.

Factor 2. Estimated coverage of the element related to total surface

In terms of estimated coverage, the examined elements form two groups. Coverage is extensive in the case of the national ecological network (almost 30 percent) and the Natura 2000 network (28.4 percent). The network of protected areas, areas with high nature values and Ramsar sites cover significantly smaller territories (0.01 to 1.69 percent).

Green infrastructure elements in urban areas are an exception in this case, as there is no related management system in place. Green areas exist in urban environments but they are not yet considered an element of green infrastructure as they are scattered and lack connections to each other. Land and plots are mostly in private ownership, which limits opportunities for collective design and management. (Their scores for the other factors also reflect this situation.)


Factor 3. Legal background

In terms of legal background, the network of protected areas has the strongest basis. The national ecological network, the Natura 2000 network and areas with high nature values have a legal background of medium strength, as most national acts have already been harmonised with EU legislation, but implementation efforts are still limited. Ramsar sites also received a medium score as they are regulated by a special law, while GI elements in urban areas have no specific legislation related to them.

Factor 4. Financial background

In terms of funding options, most elements received a medium score. For the national ecological network, Ramsar sites and protected areas, there is some financing available at national and EU level, but the amounts are not always sufficient. Areas with high nature values are supported with two funding schemes, which, however, did not employ adequate environmental safeguards and in some cases supported damaging agricultural practices. Financing options tied to the Natura 2000 network are twofold. On the one hand, there are secured funds from the government and the LIFE+ programme for drafting and implementing management plans; on the other hand, Natura 2000 payments for farmers are not implemented. There is no funding available for urban GI elements.

Factor 5. Methodology

As for the methodologies behind GI elements, most of the groups have a medium-strength scientific and institutional background, with the exception of Ramsar sites, which have no specific methodology and the measures used are the same as for other areas. The Natura 2000 network and areas with high nature values share the problem that the developed management plans are not implemented and are usually of low quality. The institutional background of the national ecological network is sufficient, but responsibilities are dispersed between various governmental institutions. The network of protected areas is characterised by the continuous development of implementation plans, which, however, lack the integration of good practices from abroad. There is no methodology applied for urban GI elements.

Factor 6. Public awareness and acceptance

Awareness of the importance of the environment in general is quite low; other land uses are more important in the eye of the public. In the case of many elements, society is basically aware of the existence of the sites but they are rarely the topic of discussion (except among some related NGOs). There is greater public awareness of the Natura 2000 network, but it also generates many negative opinions among private landowners.



Barcelona Province Council (ES) – Barcelona Metropolitan Region

Barcelona Metropolitan Region is located in the Autonomous Community of Catalonia within the Province of Barcelona. This north-eastern region of Spain, bordering France and the Mediterranean Sea, represents 6 percent of the national territory. Barcelona Metropolitan Region is the second most important urban agglomeration in Spain after Madrid. With a population of more than 4 million, it is the most populous metropolitan area on the Mediterranean coast, and is the sixth most populous urban area in the European Union after Paris, London, the Ruhr area, Madrid and Milan.

Results of the questionnaire

The questionnaire was filled in for the Barcelona Metropolitan Region, a subregional level within the Province of Barcelona. The analysis covered the national ecological network, the Natura 2000 network, the network of areas protected in national law, as well as locally protected areas, areas with high nature values, elements of green infrastructure in urban areas and rivers. The results of the analysis are summarised in the following table.



Table 7: Evaluation of green infrastructure in the Barcelona Metropolitan Region

			National ecological network	Natura 2000 site and/or network	Network of areas protected by national law	Network of locally	Network of other areas (ee Ramsar sites)	Elements of green Infrastructure in urban	River floodplains, green corridors
(ovalu	Level of evaluation		ona al	ona al	ona	ona	ona	ona	ona al
levan	partner - national or regional/local)	Ranking	Regi I/loc	Regi I/loc	Regi I/loc	Regi	Regi I/Ioc	Regi I/loc	Regi I/loc
ive factors	Factor 1.: Estimated level of connectivity	High: 3 Medium: 2 Mozaik-like: 1 Fragmented: 0	3	2	2		2 1	. 1	1
Qualitat	Factor 2.: Estimated coverage of the element related to total surface	High: 3 Medium: 2 Low: 1	3	3	3		8 1	. 1	1
	Factor 3.: Legal background	Strong: 3 Medium: 2 Weak: 1 No legal background: 0	2	3	3		3 3	3	2
Policy factors	Factor 4.: Financial background	Strong: 3 Medium: 2 Limited resources: 1 No funding: 0	1	1	1		2 1	. 2	1
	Factor 5.: Methodology	High: 3 Medium: 2 Low: 1	3	2	2		2 2		2
	Factor 6.: Public awareness and acceptance	High: 3 Medium: 2 Low: 1	2	2	2		2 2	3	3
D	issemination/Transferability potential		14	13	13	14	10	11	10

Based on the evaluation, the network of areas protected by national law ranked the highest, followed by the national ecological network.



Chart 6: Scores for Barcelona Metropolitan Region compared to partnership averages



Justifications per factor

Factor 1. Estimated level of connectivity

The degree of connectivity of natural and semi-natural land is quite high in the Barcelona Metropolitan Region in the case of the national ecological network, although there are some areas with poor connectivity around the city of Barcelona. Natura 2000 sites, areas protected by national law and locally protected areas have a medium level of connectivity, as connectivity is good in inland and coastal areas but poorer in the plains and around cities. The lowest level of connectivity applies to GI elements in urban areas, as there are only a few, small green spaces in urban areas and they are not connected. There are many interruptions along rivers, as these areas are usually occupied by urban settlements and other intensive land uses

Factor 2. Estimated coverage of the element related to total surface

According to the analysis, the national ecological network has the largest coverage related to total surface, at 70.4 percent. Coverage data show large coverage of protected areas based on the regional planning scheme: the Natura 2000 network and the network of areas protected by national law cover 29 percent of the total surface; and locally protected areas rise to 32 percent (many areas are protected at both levels).



Factor 3. Legal background

According to the evaluation, GI elements in the Barcelona Metropolitan Region have a well-developed legal background in Natura 2000 sites, the network of areas protected by national law, locally protected areas and urban areas. The general law ensures the basic conservation of the network, and specific plans (not for all areas, but at least for the most significant ones) contain details of the concrete rules and management. In terms of the national ecological network, the regional planning scheme contains general rules (no new housing, no new farming intensification, no new infrastructure in special protection areas), but specific rules for each area should be developed in more detailed sub-regional spatial plans. There are also strict regulations about the occupation of river beds and their closest area of influence, but no global river plans have been approved for the protection and management of the general river system.

Factor 4. Financial background

The region does not have an appropriate financial background for GI. There is a lack of direct and engaged funding in terms of most GI elements. Not all protected areas (including Nature 2000 sites) have an appropriate budget for management. Areas managed by the local administration (the Province Council) have comparatively more suitable economic, technical and human resources. In the case of GI elements in urban areas, the situation is quite good, as big investments are made by local authorities in the biggest cities.

Factor 5. Methodology

In terms of the methodology of site designation and management, the analysis ranked the national ecological network on top. There is a very detailed analysis of the natural and socio-economic values of non-urban land that was the basis for regional planning decisions in protected areas. The Natura 2000 network and other protected areas have good databases and analysis procedures. It is difficult to establish and develop protection schemes in some areas because of high pressure from economic activities. Some cities or small towns have developed plans and actions related to green areas. However, there is no clear coordinated policy, either in Catalonia or in the Barcelona Region.

Factor 6. Public awareness and acceptance

The different GI elements enjoy different levels of public awareness and acceptance in the Barcelona Metropolitan Region. A lower score was assigned to the national ecological network, the Natura 2000 network, areas protected by national law and locally protected areas, although in general there is quite a high degree of acceptance and valuation from most of society. Social institutions and economic sectors have a positive opinion with respect to nature conservation; by contrast, landowners and "hard" economic sectors are in many cases not supportive. Public awareness and acceptance of GI elements is far higher in urban areas and the vicinity of rivers.



Valencia Regional Government (ES) – Valencia Region

Valencia Region is situated in south-eastern Spain on the Mediterranean coast. It covers an area of approximately 23,000 km², representing 4.6 percent of the whole country. Its population of over 4.5 million represents 10.5 percent of the population of Spain. Valencia Region is one of 17 autonomous regions of Spain. It is divided into three separate provinces: Castellon, Valencia and Alicante. Valencia Region has an east-west gradient that is relatively constant throughout the territory. The gradient begins at the very densely populated and developed coastal zone and moves into the interior highland areas, which are relatively well conserved natural and semi-natural areas with a very small population and low level of human impacts.

Results of the questionnaire

In the case of Valencia Region, the questionnaire was filled in for the regional level. The analysis covered the national ecological network, the Natura 2000 network, the network of areas protected by national law, as well as locally protected areas, areas with high nature values, floodplains and green corridors, and coastal areas. The results of the analysis are summarised in the following table.



Table 8: Evaluation of green infrastructure	in the Valencia Region
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			National ecological network	Natura 2000 site and/or network	Network of areas	protected by national law	Network of locally protected areas	Areas with high nature	values Network of other areas	(eg. Ramsar sites)	Elements of green infrastructure in urban	River floodplains, green	corridors	Coastal areas
	Level of evaluation		onal	onal	onal	1	onal	onal	onal	_	onal	onal	_	onal al
(evali	uation is expected at the level of the given project partner - national or regional/local)	Ranking	Regi /loca	Regi	Regi	/loce	/loca	Regi	Regi	/loca	Regi /loca	Regi	/loca	Regi /loca
ive factors	Factor 1.: Estimated level of connectivity	High: 3 Medium: 2 Mozaik-like: 1 Fragmented: 0	2		2	2	2		2	1	1		1	1
Qualitat	Factor 2.: Estimated coverage of the element related to total surface	High: 3 Medium: 2 Low: 1	3	3	5	3	2	:	2	2	1		1	1
	Factor 3.: Legal background	Strong: 3 Medium: 2 Weak: 1 No legal background: 0	3		2	3	3		3	3	3		2	2
olicy factors	Factor 4.: Financial background	Strong: 3 Medium: 2 Limited resources: 1 No funding: 0	1	1		1	1		1	1	1		1	2
	Factor 5.: Methodology	High: 3 Medium: 2 Low: 1	3	3		3	2		2	2	2		1	2
	Factor 6.: Public awareness and acceptance	High: 3 Medium: 2 Low: 1	2	2	2	3	3		3	2	2		2	3
D	issemination/Transferability potential		14	13	1	5	13	13	3	11	10		8	11

Based on the evaluation, the network of areas protected by national law ranked the highest, followed by the national ecological network.

Based on the evaluation, the network of areas protected by national law ranked the highest, followed by the national ecological network.





Chart 7: Scores for Valencia Region compared to partnership averages

Justifications per factor

Factor 1. Estimated level of connectivity

The degree of connectivity of natural and semi-natural land is good in Valencia Region in the case of the national ecological network, Natura 2000 sites, areas protected by national law and locally protected areas, as there is a large territory where there is only small infrastructural impact. In spite of these areas, there are some territories where there is lower connectivity closer to coastal areas. As areas with high nature values are very isolated in Valencia Region, the connectivity of GI elements is low. The level of connectivity is also low in wetlands, urban areas, floodplains and coastal areas due to human impacts (agriculture, water management, tourism etc.).

Factor 2. Estimated coverage of the element related to total surface

According to the analysis, the national ecological network, the Natura 2000 network and the network of areas protected by national law were found to have the largest coverage related to total surface. The following data illustrate the large proportion of coverage: national ecological network – 1,247,090 hectares of forest soil; Natura 2000 network (overlapping SPA and SAC areas) – 780,000 hectares; protected areas and natural parks (including areas with high nature values) – 150,000 hectares. The coverage of GI elements is very low in urban areas, floodplains and coastal areas.

Factor 3. Legal background

According to the evaluation, GI elements in Valencia Region have a welldeveloped legal background in the national ecological network, in the network of areas protected by national law, in locally protected areas, in areas with high



nature values, in wetlands and in urban areas. The legal basis of the networks is given in National Law 42/2007 on Natural Heritage and Biodiversity, Decree 60/2012, Valencian Law 11/1994 on Protected Areas, Law 4/2006 on the Protection of Big Trees, Decree 65/2006 on Cave Protection and the Law on Coasts. In the case of urban green areas, the evaluation indicated that the Green Infrastructure Territorial Action Plan is currently being developed.

Factor 4. Financial background

The financial system in Valencia Region has been dramatically altered as a result of the financial crisis in recent years. The management of natural parks has become uncertain, and park managers have had to develop creative ideas in order to maintain national parks and protected areas. Natura 2000 areas, areas protected by national law and protected areas with high nature values have poor future perspectives. In the coming years there will be an increasing need for private funds. The analysis made clear that the integration of the GI concept in agricultural areas very much depends on EU funding possibilities. Locally protected areas face a different situation as their financial background very much depends on the situation of local councils. In the case of river floodplains, the situation is now the same as for other elements, although the Water Framework Directive and the national government's campaign have ensured some financial background in the last years. Coastal areas are in a better situation, as these areas are of value for tourism, thus municipalities are able to divert some of the resources obtained from tourism towards the maintenance of beaches.

Factor 5. Methodology

In terms of the methodology for site designation and management, the analysis ranked at the top the national ecological network, the Natura 2000 network and the network of areas protected by national law. Experience in the conservation and restoration of habitats is high with regard to these areas in Valencia Region. The Green Infrastructure Territorial Action Plan has led to the dynamic development of the territorial planning concept. Active NGOs, such as Fundacio Agro or Avinenca, contribute to these projects. Interesting experience and good practices in the conservation of small areas with high nature values have emerged: the "Micro-reserves of Flora" methodology developed by Valencia Region has been transferred to other European regions. The analysis shows that experience in restoring wetland habitats is far greater than experience in the restoration of coastal areas from LIFE projects. On the other hand, there is little experience of the restoration of river floodplain areas.

Factor 6. Public awareness and acceptance

The different GI elements enjoy different levels of public awareness and acceptance in Valencia Region. The lowest score was assigned to the national ecological network, the Natura 2000 network, urban areas and river floodplains, because these concepts have not been developed locally and the level of acceptance is therefore lower. Locally protected areas, such as areas with high



nature values, locally protected areas or areas protected by national law, have higher levels of local acceptance as these natural spaces, specially those close to cities, are intensively used by the region's population. There is a high level of public acceptance of the Law on the Protection of Big Trees, which is the only law in Valencia Region that has been approved unanimously by all political groups.



Fingal County Council (IR) – Fingal County

Fingal County borders the northern part of Dublin. The county occupies an area of 452.7 km² and has a population of 273,051, or 6 percent of the national population. Fingal is known throughout Ireland and beyond for the exceptional quality of life enjoyed by its residents.³ It is a significant horticultural region, producing 50 percent of the nation's vegetable crops.

Results of the questionnaire

The results of the evaluation are summarised in the table below.

³ Fingal County Council. "Connecting, Success, Living."



Table 9: Evaluation of green infrastructure in Fingal County

			Natura 2000 site and/or	Network of areas	protected by national law	Network of locally	protected areas	Areas with high nature	values	Elements of green	River floodnlains green	corridors
(evalu	Level of evaluation ation is expected at the level of the given project partner - national or regional/local)	Ranking	Regiona	Regiona	/local	Regiona	/local	Regiona	/1004	Regiona	Regiona	/local
ive factors	Factor 1.: Estimated level of connectivity	High: 3 Medium: 2 Mozaik-like: 1 Fragmented: 0		3	2	-	2		2			3
Qualitat	Factor 2.: Estimated coverage of the element related to total surface	High: 3 Medium: 2 Low: 1		2	2		3		3	1	L	1
	Factor 3.: Legal background	Strong: 3 Medium: 2 Weak: 1 No legal background: 0		3	3		1		1		3	1
Policy factors	Factor 4.: Financial background	Strong: 3 Medium: 2 Limited resources: 1 No funding: 0		L	1		1		1		3	1
-	Factor 5.: Methodology	High: 3 Medium: 2 Low: 1		2	2		2		2	3	3	2
	Factor 6.: Public awareness and acceptance	High: 3 Medium: 2 Low: 1		L	1		2		2	3	3	1
Di	issemination/Transferability potential		12	2	11		11	1	1	14	ŀ	9

GI and GI policies

Over the last few years, GI policies have been gradually developed. In 2003, a biodiversity study programme was launched with the priorities of data collection and habitat mapping. In 2005, Fingal County Council adopted the first Fingal Heritage Plan. More recently, in 2010, Fingal developed its Biodiversity Action Plan, which introduced the Fingal Ecological Network. In 2011, the county council adopted the Fingal Development Plan 2011–2017, which includes GI as a major theme, addressing several interlinked policy areas including biodiversity,



landscape, parks and open spaces, sustainable water management and archaeological and architectural heritage.

The plan integrates land use with provision for transport, physical and social infrastructure while protecting the environment. The plan is woven into the current regional and national policy framework by the requirement for compliance with regional planning guidelines and the National Spatial Strategy.

The assessment of GI in Fingal revealed that GI elements in urban areas are the most effectively protected type of GI, with a direct source of funding in place and a firm methodology for its implementation. Given the public exposure, public awareness is high and the sites (i.e. GI elements) are well used and known by the public. On the downside, GI elements in urban areas are scattered and hence enjoy a low level of connectivity. In addition, the total area covers a mere 4.5 percent of the land area of the county.

The second highest score was assigned to the Natura 2000 network, which enjoys strong protection rooted in Irish law and fully integrated into the land-use planning code. While acceptance of the importance of the Natura 2000 network is moderate, public awareness is rather low. Coupled with limited financing, these factors lead to less than adequate management and maintenance of these sites.

The score for the network of areas protected by national law was on a par with the scores for the network of locally protected areas and for areas with high natural values. The connectivity of all three areas is described as medium, due to the fact that many of the nationally protected areas occupy coastal territory and are located close to each other. In the case of the network of locally protected areas and areas with high natural values, connectivity is improved via rivers or other types of sites.

In terms of area covered, the network of locally protected areas covers approximately 23 percent of the land area of the county, compared to 19 percent in the case of areas with high natural value and 7 percent for the nationally protected areas. Regarding the methodology, a general improvement in implementation is needed. While the methodology used for the network of locally protected areas and areas with high natural value mainly draws on local data collection, a national methodology is used for the identification and designation of nationally protected areas. The data also show a difference in legal background, which is strong in the case of the network of areas protected by national law but insufficient in the case of locally protected areas and areas with high natural value. Finally, acceptance of the need to protect areas is at medium level, despite the low levels of public awareness, with the exception of special amenity areas.

Finally, river floodplains and green corridors scored only nine points, mainly due to their small total area but also because of poor legal protection, inadequate funding and limited public awareness and acceptance.





Chart 8: Scores for Fingal County compared to partnership averages

Justification per factor

Factor 1. Estimated level of connectivity

Most of the GI elements in Fingal offer a medium level of connectivity, the majority being coastal areas lying close to each other. Many of the sites are connected by a river or via other site types (e.g. Natura 2000). The Natura 2000 network consists of many overlapping SACs and SPAs, which ensure connectivity that has been observed when tracking birds.

The elements of GI in urban areas are mainly parks and open spaces, which are relatively isolated from each other due to the urban fabric that surrounds them, hence the low level of overall connectivity. River floodplains and green corridors are, on the other hand, well connected because most river corridors allow unimpeded movement.

Factor 2. Estimated coverage of the element related to total surface

The assessment shows that the network of locally protected areas has the largest coverage (23 percent), followed closely by areas with high nature values (19 percent). Less than half this area is occupied by the network of nationally protected areas (7 percent) and the Natura 2000 network (6.5 percent). Elements of GI in urban areas and river floodplains and green corridors cover an area of 4.5 percent and 4 percent respectively.



Factor 3. Legal background

The Natura 2000 network, together with the network of nationally protected areas and elements of GI in urban areas, have strong legal protection. The protection of the Natura 2000 network is part of Irish Iaw, and Natura 2000 requirements are fully integrated into land-use planning legislation. With regard to the network of nationally protected areas, statutory nature reserves and refuges for fauna are strongly protected in primary and secondary legislation. The proposed natural heritage areas have only weak protection via the planning code, but most sites are effectively protected because they are within SACs or SPAs.

Within the category of locally protected areas (or areas with high nature values, which are the same in Fingal), there is strong protection for the Liffey Valley and Howth Special Amenity Areas, based on the Planning and Development Acts 2000–2011, with additional protection measures included in the Fingal Development Plan 2011–2017. For other types of site in this category, protection is low, thus the overall rating given in the analysis is low.

Elements of GI in urban areas are well protected because they are owned by the council or subject to long-term legal agreements with landowners to keep the land as open public areas. By contrast, river floodplains and green corridors enjoy only a basic measure of legal protection via the Fingal Development Plan 2011–2017.

Factor 4. Financial background

The financing available is inadequate for the proper management and maintenance of GI in Fingal. In the case of the network of locally protected areas (and areas with high nature values), limited financial sources are available via the LEADER programme or as a result of levies associated with the Howth Special Amenity Area. Elements of GI in urban areas, on the other hand, receive direct funding from the county council and are therefore financially more viable.

Factor 5. Methodology

The methodology for the identification and designation of GI elements in urban areas was positively assessed, partly because these processes are based on local data collection and overall implementation is high. The methodology for the rest of the elements, including the Natura 2000 network, has been developed but there is still room for improvement when it comes to implementation. A similar conclusion was reached in the assessment of river floodplains and green corridors, the implementation of which is in an early phase.

Factor 6. Public awareness and acceptance

Similar to the situation in other countries, public awareness of the Natura 2000 network and the network of nationally protected areas is low, even though the need to protect these sites is generally accepted. The network of locally protected areas and areas with high nature values are generally in a slightly better position thanks to the special amenity areas, which enjoy average acceptance but a low



level of public awareness. River floodplains and green corridors receive little public attention due to their low importance. In contrast, GI elements in urban areas are well known and regularly used by the public.



Emilia-Romagna Region (IT)

Emilia-Romagna is an administrative region in northern Italy. Its capital is Bologna. It has an area of 22,123 km² and about 4.4 million inhabitants. Nine of the region's cities have over 100,000 inhabitants. Geographically, 25 percent of the territory is mountainous, 17 percent covered by hills and 48 percent by plains (the Po valley), with a seaboard of 130 km.

Regarding the infrastructural framework, Emilia-Romagna Region has a dense road network: the Bologna area is at the junction of three trans-European transport networks.

Results of the questionnaire

The questionnaire was filled out at the level of the region. During the assessment, Natura 2000 sites, other areas protected by national law, the network of national/local protected areas as well as GI elements in urban areas and other initiatives were evaluated. The results of the assessment are summarised in the table below.



Table 10: Evaluation of green infrastructure in Emilia-Romagna Region

			Natura 2000 site and/or	network	Network of areas protected by national law	Network of locally protected	areas	Arose with high mature values		Network of other areas	(LANDSCAPE HERITAGE)	Elements of green infrastructure	in urban areas	Other initiatives (Archeological	sites + landscape heritage	defined by Ministerial Decree)
(evalu	Level of evaluation ation is expected at the level of the given project partner - national or regional/local)	Ranking	Regional/	local	Regional/ local	Regional/	local	Regional/	level	Regional/	local	Regional/	local	Regional/	local	level
ive factors	Factor 1.: Estimated level of connectivity	High: 3 Medium: 2 Mozaik-like: 1 Fragmented: 0		1	1		1		1		3		0			1
Qualitat	Factor 2.: Estimated coverage of the element related to total surface	High: 3 Medium: 2 Low: 1		2	2		2		2		3		1			1
	Factor 3.: Legal background	Strong: 3 Medium: 2 Weak: 1 No legal background: 0		3	3		1		3		3		1			3
Policy factors	Factor 4.: Financial background	Strong: 3 Medium: 2 Limited resources: 1 No funding: 0		1	2		1		2		1		1			1
	Factor 5.: Methodology	High: 3 Medium: 2 Low: 1		2	2		1		2		2		1			2
	Factor 6.: Public awareness and acceptance	High: 3 Medium: 2 Low: 1		1	2		1		1.5		1		2			1
Dis	ssemination/Transferability potential			10	12		7	1	1.5	1	.3		6			9

Based on the assessment, the highest score was given to the network of other areas (landscape heritage), followed by areas protected by national law, areas with high nature values and the Natura 2000 network.



Chart 9: Scores for Emilia-Romagna Region compared to partnership averages



Justifications per factor

Factor 1. Estimated level of connectivity

The assessment of the network component for Emilia-Romagna shows that there is no national ecological network in place, but rather regional ones due to the regional administrative set-up in Italy. The network of other areas (landscape heritage) ranked the highest among the GI elements as the level of connectivity here is good, as compared to the other elements where connectivity is low or insufficient.

Factor 2. Estimated coverage of the element related to total surface

Regarding the estimated coverage of the GI elements compared to the total surface, the highest score (40 percent) was given to the network of other areas (landscape heritage), followed by areas with high nature values (14.5 percent) and Natura 2000 sites (12 percent).

The assessment shows insignificant coverage of GI elements in urban areas. No reference is given to green corridors. Other initiatives, such as archaeological and landscape heritage sites defined by a ministerial decree, occupy 7 percent of the territory.

Factor 3. Legal background

According to the assessment, in Emilia-Romagna the various GI elements are supported by a strong legal background. Only the legislative background for the network of locally protected areas and for GI elements in urban areas can be considered weak.

The designation and management of Natura 2000 sites is implemented in line with the relevant EU legislation. Natura 2000 sites and the network of areas



protected by national law are supported by Regional Law 6/2005 in Emilia-Romagna.

Under the network of locally protected areas, ecological networks are set up via provincial planning. Areas with high nature values are selected on the basis of EU legislation regarding Natura 2000 sites and legislation about areas designated as areas protected by national law and by Regional Law 6/2005.

Networks of other areas include landscape heritage elements defined by national and regional law on the basis of their geographical, morphological and cultural characteristics. River floodplains are included in landscape heritage protection, while there is still only a plan to include green corridors.

Archaeological sites and special landscape sites are defined by the national law on cultural heritage. Each area is identified by a ministerial decree.

Factor 4. Financial background

The assessment shows a diverse picture for the various green infrastructure elements, with limited levels of funding. No financial support is available for the network of locally protected areas, the network of other areas, GI elements in urban areas and other initiatives. Natura 2000 sites receive some regional funding, while the network of areas protected by national law enjoy a medium level of financial coverage with national and regional funding.

Factor 5. Methodology

Regarding the methodology for the designation of GI elements, there is a homogeneous picture (medium score) as the methodology is improving but is still bureaucratic. In the case of locally protected areas and GI elements in urban areas, methodology received a low score as there are no shared and ongoing methodologies in place yet.

Factor 6. Public awareness and acceptance

Based on the assessment, there is a relatively low level of public awareness and acceptance of GI elements, with a slightly better ranking for the network of areas protected by national law. Public awareness of these areas is fairly good because the parks have been established for many years and a series of brochures, books and posters about them have been published.

Locally protected areas (ecological networks, in this case) are quite new in the region so very few people know the value of these networks; they are considered as obstacles (to be overcome) to land transformation. With respect to GI elements in urban areas, there is strong demand for green areas among the population but the GI concept is not well implanted.



Latvian Ministry of Environmental Protection and Regional Development (LV)

Latvia is the central of the three Baltic States on the east coast of the Baltic Sea. Spreading across $64,589 \text{ km}^2$, the country has a population of 2.3 million people, 70 percent of whom live in urbanised areas.

The territory of Latvia consists of fertile lowland plains and moderate hills, most of the land being less than 100 metres above sea level. The country has an extensive network of rivers, thousands of lakes and hundreds of kilometres of undeveloped seashore lined by pine forests, dunes, and continuous white sand beaches. With over 44 percent of its territory covered by forests and a vast network of free-flowing rivers, Latvia is one of Europe's best-preserved havens for a wide variety of wildlife.⁴

Results of the questionnaire

The questionnaire was filled out for the national level, as the whole country constitutes a single NUTS 2 region. During the assessment, Natura 2000 sites, other protected areas (i.e. Ramsar sites in this case), the network of national/local protected areas as well as GI elements in urban areas and river floodplains and green corridors were evaluated. The results of the assessment are summarised in the table below.

⁴ source: The Latvian Institute; http://latvia.lv/library/latvia-brief



Table 11: Evaluation of green in	nfrastructure in Latvia
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			National Ecological Network	Natura 2000 site and/or network	Network of Protected Areas by national law	Network of Locally protected areas	Areas with High Natural Values	Network of other areas (eg. Ramsar sites)	Elements of green infrastructure in urban areas	River floodplains, green corridors
Level of evaluation (evaluation is expected at national level, and at the level of the given project partner - regional, local)		Ranking	National	National	National	National	National	National	National	National
e factors	Factor 1.: Estimated level of connectivity	High: 3 Medium: 2 Mozaik-like: 1 Fragmented: 0	2	3	3	2	1	1	2	2
Qualitative	Factor 2.: Estimated coverage of the element related to total surface	High: 3 Medium: 2 Low: 1	2	2	2	2	2	2	2	2
Policy factors	Factor 3.: Legal background	Strong: 3 Medium: 2 Weak: 1 No legal background: 0	0	3	3	2	2	3	2	2
	Factor 4.: Financial background	Strong: 3 Medium: 2 Limited resources: 1 No funding: 0	2	2	2	2	1	2	2	1
	Factor 5.: Methodology	High: 3 Medium: 2 Low: 1	2	2	2	2	1	2	2	2
	Factor 6.: Public awareness and acceptance	High: 3 Medium: 2 Low: 1	1	2	2	2	2	1	3	1
Disseminat	tion/Transferability potential		9	14	14	12	9	11	13	10

Based on the assessment, the highest score was given to the Natura 2000 network and the network of areas protected by national law, followed by GI elements in urban areas and the network of locally protected areas.





Chart 10: Scores for Latvia compared to partnership averages

Justifications per factors

Factors 1 and 2. Estimated level of connectivity and estimated coverage of the element related to total surface

All of the analysed GI elements in Latvia seem to have relatively sufficient coverage (12 to 25 percent at national level). However, only the Natura 2000 network and protected areas have a high level of connectivity between the sites — this can be explained by the high percentage of the national territory that is covered by forests and extensively managed meadows that serve as corridors between the protected areas. Other groups show only medium connectivity, except for areas with high nature values and the network of other areas (Ramsar sites in this case), which are highly fragmented.

For these factors, GI elements in urban areas should be looked at separately as their values need to be compared only to the total urban areas. In the expert evaluation, both their coverage and their connectivity received medium scores.

Factor 3. Legal background

In terms of the legislative background, the Natura 2000 network, the network of protected areas and the network of other areas all received maximum scores, as these networks are properly regulated at national level (in national law and by regulations of the Cabinet of Ministers). Locally protected areas and urban GI elements are regulated at lower levels, by municipalities and in development plans. Areas with high nature values are partly regulated at national level, but depend mainly on voluntary action, just like the national ecological network that completely lacks a regulatory background.



Factor 4. Financial background

Most of the GI elements in Latvia are funded solely through state and EU funding mechanisms. In the case of GI elements in urban areas, financing is provided through EU co-financed projects implemented by local governments. As for locally protected areas, the respective municipalities provide financing.

It should be noted that, according to the evaluation, the adequacy of funding was scored as medium in most cases, except for areas with high nature values and river floodplains and green corridors, where financial resources are limited.

Factor 5. Methodology

A sound methodological background for the designation of GI elements in Latvia is available for more or less all types of elements. Only in the case of areas with high nature values does the lack of a good methodology hinder implementation. In other cases, area designations must be based on scientific justification and best available data. Locally protected areas are designated according to a methodology developed by the local authorities, while the definition of GI elements in urban areas forms part of spatial plans and development plans.

Factor 6. Public awareness and acceptance

Based on the assessment, only GI elements in urban areas enjoy a high level of public awareness and acceptance. The public are less interested in elements defined as other areas and in river floodplains and green corridors. The rest of the elements attract some public attention, since local stakeholders are generally provided with information about their development. In the case of areas protected by national law, stakeholders also have the opportunity to review the nature conservation plans in their development phase.



Ghajnsielem Municipality (MT) – Malta and Gozo island

Malta is an archipelago in the central Mediterranean with an area of 316 km² and approximately 420,000 inhabitants. In terms of land cover, 51 percent of the territory is agricultural land, 22 percent is urbanised, and 18 percent is covered by natural vegetation. Only the three largest islands — Malta (Malta), Gozo (Ghawdex) and Comino (Kemmuna) — are inhabited, and these are surrounded by a number of uninhabited islets. It is also one of the most densely populated countries worldwide.

The harbour village of Ghajnsielem is situated on the south-east coast of the island of Gozo, overlooking the channel separating Gozo from the mainland island of Malta. Historical records date the establishment of the village to the 1700s. Ghajnsielem developed around a freshwater spring, from which the village probably took its name. Ghajnsielem covers an area of 7.2km², including the small island of Comino, which lies in the Malta–Gozo channel and which falls administratively within the Ghajnsielem Local Council boundary. The population of Ghajnsielem is approximately 3,000 (2,570 according to the 2005 census), representing some 8 percent of the total population of Gozo.

Ghajnsielem has an extensive rural hinterland, which extends north to Nadur and west to Xewkija and Sannat. Much of its territory is designated as an area of agricultural value and its coastal environment is recognised as an area of high landscape sensitivity, part of which includes the special area of conservation Mgarr ix-Xini, an important area for seabirds as well as vegetation communities and related biodiversity. The coastal environment is also protected through planning policies.

Comino is important as a special area of conservation and special protection area. In addition, the marine environment in the area supports important beds of seagrass, most prominently *Posidonia oceanica*.

Results of the questionnaire

The questionnaire was filled out at local level for the village of Ghajnsielem, but also with a reference to the findings at national level. Gozo is rural in character and overall is considered more so than Malta, which is more densely populated and urbanised. This is reflected by the Eco-Gozo project⁵, which seeks to establish Gozo as an eco-island by 2020, with the support of a keen and committed sustainable community. Ghajnsielem village has a population of around 3,000 and includes Mgarr Harbour, which provides the only link between Gozo and the other islands (Malta and Comino).

⁵ <u>http://www.ecogozo.com</u>



During the assessment, the national ecological network, Natura 2000 sites, other areas protected by national law, the network of national/local protected areas as well as green infrastructure elements in urban areas were evaluated. The results of the assessment are summarised in the table below. (N.B. "Local level" indication in the table refers to Ghajnsielem village.)

Table 12: Evaluation of green infrastructure in Malta and Gozo island

			National ecological network		Natura 2000 site and/or	network	Network of areas	protected by national law	Network of locally protected areas	Elements of green	ul Elements of green – infrastructure in urban areas		corridors
Level of evaluation (evaluation is expected at the level of the given project partner - national or regional/local)		Ranking	National	Local	National	Regiona I/local	National	Regiona I/local	Local level	National	Local	National	Regiona I/local
ive factors	Factor 1.: Estimated level of connectivity	High: 3 Medium: 2 Mozaik-like: 1 Fragmented: 0	2	1	1.5	3	2.5	3	2	0	1	3	3
Qualitat	Factor 2.: Estimated coverage of the element related to total surface	High: 3 Medium: 2 Low: 1	3	3	2	3	3	3	2	1	1	3	3
	Factor 3.: Legal background	Strong: 3 Medium: 2 Weak: 1 No legal background: 0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Policy factors	Factor 4.: Financial background	Strong: 3 Medium: 2 Limited resources: 1 No funding: 0	2	2	2	2	2	2	2	2.5	2.5	2	2
	Factor 5.: Methodology	High: 3 Medium: 2 Low: 1	2	2	2	2	2	2	2	2	2	2	2
	Factor 6.: Public awareness and acceptance	High: 3 Medium: 2 Low: 1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Di	issemination/Transferability potential		13.0	12.0	11.5	14.0	13.5	14.0	12.0	9.5	10.5	14.0	14.0

Based on the assessment, at **national level**, the highest score was given to green corridors (specifically taking into consideration the rubble walls that are a feature of the rural environment, which are legally protected and provide important habitats and corridors for a variety of species of fauna) and areas protected by national law, followed by the national ecological network and the Natura 2000 network. At **local level**, the highest score was given to green corridors, areas protected by national law and the Natura 2000 network, which received the same score, followed by the national ecological network.



Chart 11: Scores for Malta and Gozo island compared to partnership averages



Justifications per factor

It should be recognised that Malta has a centralised planning system and therefore the assessment scores and explanations are generally applicable to each level of the hierarchy.

Factor 1. Estimated level of connectivity

The spatial coverage of designated areas in the south of Malta and Gozo is rarely overlapping, and the distance between ecological elements found in the rest of Malta is quite high (apart from the urban footprint in between). An ecological corridor exists along the west coast of Malta. On Gozo, designated protected areas could also be considered to be isolated, although, due to its rural nature (Gozo is a rural conservation area), it can be considered that ecological corridors are generally existent. Within Ghajnsielem, the territorial units of the designated areas are scattered with a large gap between them, which is largely taken up by the village itself and therefore the ecological corridor function is considered to be limited.

For Malta and Gozo, the Natura 2000 network and the network of areas protected by national law can be regarded as the most essential in terms of GI elements. However, the green corridors, in particular those ensuring links between rural/natural environments that are interrupted by urban environments, need to be strengthened.



Factor 2. Estimated coverage of the element related to total surface

The highest values were given to green corridors (mainly represented by rubble or dry-stone walls), the national ecological network and the network of areas protected by national law, which showed extensive coverage (more than 20 percent of the relevant territorial level covered) both at national and regional/local level. Natura 2000 sites provide medium coverage of the relevant territorial level (13.5 percent).

For GI elements in urban areas, information was provided at local level and reveals low coverage (less than 5 percent of the relevant territorial level covered). Elements of GI in urban areas are isolated and do not fulfil their ecological functions because of a relatively high degree of fragmentation. In Ghajnsielem, GI features are scattered with large gaps in between, giving a mosaic-like picture.

With respect to green corridors, extensive coverage can be observed at both national and local level (more than 20 percent of the relevant territorial level covered). Most of the land cover in Malta is agricultural land. Rubble (dry stone) walls have been shown to support a high level of biodiversity and act as ecological corridors connecting natural and rural sites. As a result, it is considered that the land cover offers potential for the high permeability of species throughout the territory.

Factor 3. Legal background

According to the assessment, the various GI elements in Malta are supported by a strong legal background. In general, however, there is further room for improvement on the aspects of effective enforcement.

Planning policies are developed through a robust process including scientific surveys by qualified personnel within the Malta Environment and Planning Authority and effective public consultation. It appears from the assessment that the national ecological network is well established in the planning system and well supported by legal protection (through LN311 of 2006), together with the Natura 2000 network, where legislation is in place in accordance with the Habitats Directive. Management plans are being elaborated.

Elements of green infrastructure, particularly in urban environments, can be considered as having a weak legal background. These are designated in local plans, for example for areas for recreation and public open spaces. As mentioned above, there is room for improvement with regards to implementation and enforcement. Despite the centralised system, local councils have possibilities to integrate the GI concept in their new strategic plans.

Rubble walls, which feature throughout the rural environment and are corridors for biodiversity, are strongly protected under specific legislation, and there is a desire for further improvement of law enforcement.



Factor 4. Financial background

The assessment shows a homogeneous picture for the various GI elements, with a medium level of funding. Funding is generally adequate for all GI elements, and is provided by public-private partnerships and EU funds. However, there is room for improvement in relation to the spread of funds over the stages of projects, with issues primarily related to ensuring effective and complete implementation.

Factor 5. Methodology

Given the centralised system regarding the methodology for the designation of GI elements, a homogeneous result was also obtained (medium level). The criteria/ institutional background for designation is robust, appropriate expertise is applied and public consultation/engagement is well established. However, there is room for improvement in terms of implementation.

Factor 6. Public awareness and acceptance

Awareness of the importance of the environment in general is relatively high, as evidenced by the Public Attitude Survey carried out by the Malta Environment and Planning Authority (MEPA) in 2008 as part of the State of the Environment Report.

However, there is limited awareness about protected areas per se and their objectives and functions. In this sense, the level of public awareness and acceptance of GI elements can be considered to be relatively low.



Azores Regional Government (PT) – Azores Islands

Situated in the Atlantic Ocean approximately 1,450 km west of its mainland, the Azores Autonomous Region of Portugal consists of nine volcanic islands. The total surface area of the nine islands of the archipelago is 2,333 km²; the biggest island, Sao Miguel, is 759 km² while the smallest, Corvo is only 17 km². According to the latest census, carried out in 2011, the population in the Azores was 246,746 inhabitants; giving a density of 106 inhabitants per square kilometre.

Since the nine islands stretch over 600 km from the north-west to the south-east, the region possesses a sea zone (an exclusive economic zone prescribed by the United Nations Convention on the Law of the Sea) of 1,100,000 km², which provides the archipelago with special rights over the exploration and use of marine resources (such as water and wind).

The Azores economy is based mainly on agriculture, fishing and tourism. The GDP per capita was EUR 15,200 in 2010, which is the result of an average annual 1 percent growth rate in the last decade.

In terms of terrestrial biodiversity, rare and diverse ecosystems can be observed on each of the nine islands. There are 4,467 known species and subspecies of plants and animals in the archipelago. Of these, 420 are endemic, some of them only being found in a few locations or one location. In terms of marine biodiversity, there are 17 marine areas classified as sites of community importance in the Azores.

The Azores Regional Strategy for Biodiversity Conservation has been approved for the period 2012 to 2022 and is the first major conservation strategy within the archipelago, apart from Natura 2000 network management plans for terrestrial and marine areas. Its three main priorities are the promotion of environmental awareness for all; the improvement of ecosystems' resilience and biodiversity conservation management practices; and the development of knowledge on Azores biodiversity issues and of an information and monitoring system.⁶

6

Sources:

http://www.netbiome.org/index.php?option=com_content&view=article&id= 65&catid=51&showall=1 http://www.biomareweb.org/3.5.html http://www.azoresbioportal.angra.uac.pt/pesquisa.php?sstr=5&lang=en



Results of the questionnaire

For the Azores Islands, the questionnaire was filled in exclusively for the regional level. The analysis covered the regional ecological network (including river floodplains as green corridors), the Natura 2000 network, the network of areas protected by national law (including Ramsar sites), as well as locally protected areas, areas with high nature values and GI initiatives in urban areas. The results of the analysis are summarised in the table below.

Table 13: Evaluation of green infrastructure on the Azores Islands

			National ecological network	Natura 2000 site and/or network	Network of Protected Areas	(including varies) Network of locally protected areas	Areas with high nature values	Elements of green infrastructure in urban areas
(evalua	Level of evaluation ation is expected at the level of the given project partner - national or regional/local)	Ranking	Regional/ local	Regional/ local	Regional/	Regional/	Regional/ local	Regional/ local
ive factors	Factor 1.: Estimated level of connectivity	High: 3 Medium: 2 Mozaik-like: 1 Fragmented: 0	3	3		1 3	3	1
Qualitat	Factor 2.: Estimated coverage of the element related to total surface	High: 3 Medium: 2 Low: 1	3	3		2 3	3	2
	Factor 3.: Legal background	Strong: 3 Medium: 2 Weak: 1 No legal background: 0	3	3		2 3	3	1
Policy factors	Factor 4.: Financial background	Strong: 3 Medium: 2 Limited resources: 1 No funding: 0	1	1		0 1	. 1	1
	Factor 5.: Methodology	High: 3 Medium: 2 Low: 1	2	2		1 1	. 2	1
	Factor 6.: Public awareness and acceptance	High: 3 Medium: 2 Low: 1	1	2		1 1	. 1	1
	Dissemination/Transferability potential		13	14		7 12	13	7

During the evaluation, the Natura 2000 network ranked highest, followed by the regional ecological network and areas with high nature values. The network of



protected areas (including Ramsar sites and GI elements in urban areas) scored the lowest.

Chart 12: Scores for the Azores Islands compared to partnership averages



Justifications per factor

Factor 1. Estimated level of connectivity

The Azores Islands show a high level of connectivity of GI elements in the case of the regional ecological network and the Natura 2000 network, the network of locally protected areas and areas with high nature values. At the same time, mosaic-like connectivity was reported for the network of protected areas (including Ramsar sites) and for GI elements in urban areas. The maps that form the basis for this evaluation can be found in the annex.

Factor 2. Estimated coverage of the element related to total surface

In the analysis carried out for the Azores Islands, it was found that all GI elements have high or medium coverage related to the total surface of the archipelago. The regional ecological network, the Natura 2000 network, the network of locally protected areas and areas with high nature values all showed high coverage. The regional ecological network covers approximately 25 percent of the archipelago's terrestrial area, while the Natura 2000 network covers 22 percent with marine and terrestrial areas included. The network of locally protected areas occupies approximately 25 percent of the terrestrial area of the archipelago, while areas with high nature values cover more than 40 percent of the islands.



Factor 3. Legal background

According to the evaluation, GI elements in the Azores Islands have a generally strong legal background, with the exception of the network of protected areas, which receives an average level of legal protection; and urban GI initiatives, which have a weak legal basis.

For the regional ecological network and the network of locally protected areas, the legal background is defined separately in an act for each natural island park and in the Biodiversity Act. In the case of the Natura 2000 network, the legal basis is defined in the Habitats and Birds Directives and there are detailed governmental and regional regulations with accompanying management plans. For areas with high nature values, the highest level of legislation is regional regulation; however, the legislative basis was found satisfactory because the system is based on the voluntary participation of farmers. In the case of urban GI elements, the legislation was found to be weak as only the basis of protection for urban green surfaces (trees) is defined in regional and local regulation.

Factor 4. Financial background

For this factor, the analysis shows that different GI elements all have limited access to funding. The regional ecological network only has access to indirect financing, while the network of Natura 2000 areas has various possibilities for financing (CAP, LIFE projects), although a higher level of funding would be necessary for the successful management of these areas. Locally protected areas can only benefit from occasional, isolated support, but at the same time areas with high nature values can receive area-based payments aimed at species and habitat protection. Urban GI elements have access to some funding provided by local city halls. The network of protected areas has no access to funding, as, according to the assessment, there is no financial instrument available for the ecological restoration of Ramsar sites or other wetlands.

Factor 5. Methodology

In terms of the methodology of site designation and management, the Azores ranked the different GI elements as medium or weak. The management of the regional ecological network and the Natura 2000 network was assessed as average. In both cases it was stated that the methodology is based on the best available techniques and databases for spatial designation, but the lack of stakeholder involvement was underlined as a weakness in relation to both elements. Additionally, the lack of capacity in the implementation of Natura 2000 area management plans was also mentioned. The management of areas with high nature values was also assessed as average, but it was stated that an exact methodology is missing. As for the network of protected areas, the network of locally protected areas and urban GI initiatives, the management capacity was assessed as low. For the network of protected areas only a very weak methodology exists and work has just started in the past year in one area. For the network of locally protected areas, designation depends on local biodiversity regulations and the Habitats and Birds Directives.



Factor 6. Public awareness and acceptance

In most cases, the different GI elements scored low for this factor. For the regional ecological network and the network of locally protected areas, a general lack of interest was stated. In the case of the network of protected areas, positive signs can be observed and the level of acceptance is rising, since the utilisation of ecosystem services, such as birdwatching, is becoming more popular in Corvo, Flores and Terceira islands. The concept of "areas with high nature values" is not fully understood by stakeholders, while in the case of urban GI elements, a high level of acceptance and civic activities can occasionally be observed, but these activities are isolated. Only one GI element, the Natura 2000 network, was given an average score in terms of awareness and acceptance. It was outlined, however, that the general opinion was rather negative among land users during designation due to the lack of stakeholder involvement, although the introduction of Common Agricultural Policy compensation has proved to be a positive incentive.



Results and outcomes: Scores for all GI elements per factor

Factor 1. Estimated level of connectivity

The physical and functional connectivity of ecosystems is one of the most important qualitative factors in the assessment of an area's green infrastructure. As the EEA report on Green Infrastructure outlines, "Green infrastructure is not only about connecting ecosystems per se, but also about strengthening them and their services — something which can be achieved by (re-)connecting measures, but also by improving the landscape's permeability (which implicates different ecosystems)."⁷

Connectivity does not always mean a direct physical connection between the green spaces; proximity can help to functionally integrate green spaces into a wider network, or connectivity can also exist between separate natural areas where the distance is not considerable and species can move between areas with the help of corridors. Accordingly, the connectivity of green infrastructure can be understood in two different ways: 1. as including two green spaces and the fact that they are interlinked; or 2. taking into account only the physical linkages and the concept of interconnectivity.

In this report, the purpose of factor 1 was to assess the level of connectivity between green infrastructure elements in several different regions of Europe by measuring the permeability and connectivity of the given green infrastructure element, at national and regional level, which provides the ecological corridors and stepping stones necessary for animal and plant species.

The level of connectivity was evaluated in terms of the national ecological networks, Natura 2000 sites, areas protected by national law, locally protected areas, areas with high nature values, elements of GI in urban areas, and river floodplains in the different regions. Table 1 shows that Natura 2000 sites and national ecological networks have the highest level of connectivity. The lowest level of connectivity was typical for GI elements in urban areas, as in most cases there are only a few, small green spaces in urban areas with no or little connection between them.

⁷

EEA Technical Report, 2011. Green infrastructure and territorial cohesion. The concept of green infrastructure and its integration into policies using monitoring systems. Denmark: European Environmental Agency



Table 14: Summary of scores for factor 1

	losisoloso losoitoli	national ecological network		Natura 2000 site and/or network	secone go gronniquili	protected by national law		Network of locally protected areas	onnach deid dain seond	Areas with might nature values	ooono noqqo go qaoniqoli	le.g. Ramsar sites)	Elements of green	Elements of green / infrastructure in urban areas		Elements of green I infrastructure in urban areas		al Elements of green al/ infrastructure in urban areas		nal Elements of green hal/ infrastructure in urbar areas		kiver noouplains, green corridors		Other initiatives
Level of evaluatio n	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local						
Netherlands and Flevoland	2	1	2	2	0	0		0		0			2	2										
Emilia- Romagna				1		1		1		1		3		0				1						
Hungary	3		3		2		1		2				1											
Barcelona		3		2		2		2				1		1		1								
Cyprus	1		2		0				1		0		0		1									
Malta and Gozo	2	1	1.5	3	2.5	3		2					0	1	3	3								
Bulgaria and Plovdiv	2	1	2	1	2	2	1	1	2	1	2	1	0	1	1	1								
Bulgaria and Stara Zagora	2	1	2	1	2	1	1	1	2	1	2	0	1	2	1	1								
Azores Islands		3		3		1		3		3				1										
Latvia	2		3		3		2		1		1		2		2									
Valencia		2		2		2		2		2		1		1		1		1						
Fingal County				3		2		2		2				1		3								

The table indicates very diverse conditions across the partner countries and regions with respect to the level of connectivity between GI elements in general and in terms of rural and urban areas. On the whole, the degree of connectivity is very low in urban areas, with only Flevoland and Latvia showing stronger connections between GI elements in urban spaces. In Latvia, GI elements in urban areas were looked at separately as their values were compared only to the total urban areas, thus they received medium scores.

According to the analysis of natural areas, the highest scores were recorded in the Azores Islands, Hungary, Barcelona, Fingal County and Valencia, where connectivity proved to be good in terms of national ecological networks, Natura 2000 sites, areas protected by national law, locally protected areas and areas with high nature values. By contrast, a low level of connectivity is seen in Emilia-Romagna and Cyprus. Besides its low connectivity level there is no national


ecological network in place in Fingal or in Emilia-Romagna (in the latter case due to the regional administrative set-up in Italy). In Flevoland, most of the green areas are isolated and the general level of connectivity is rather poor.



Chart 13: Partnership averages for factor 1

With respect to partnership averages at national level, national ecological networks and Natura 2000 networks were the only GI elements that scored above average. The other GI elements were ranked around the average, between medium and low levels. The highest level of connectivity is seen in Hungary, since at national level the national ecological network and the Natura 2000 network are the most relevant. In Latvia, the Natura 2000 network and protected areas have a high level of connectivity on the national territory, which is covered by forests and extensively managed meadows that serve as corridors between the protected areas.

At regional level, the evaluation shows slightly lower but similarly average levels of connectivity. Natura 2000 sites appear in the forefront of the comparison, and in second place the national ecological networks and river floodplains have a medium level of connectivity. The other GI elements have between low and medium levels of connectivity. The highest level of connectivity at regional level for the three mentioned GI elements varies between Barcelona, Malta, the Azores Islands and Fingal.

On the whole, project partners face similar problems regarding the connectivity of GI elements. The main problem is the mosaic-like system of GI elements in urban areas, with very low levels of connectivity. The highest connectivity levels are



seen in national ecological networks, Natura 2000 sites and areas protected by national laws, while the other initiatives, such as river floodplains and Ramsar sites, are isolated in most of the countries. In conclusion, GI elements should be strengthened by increasing their physical connectivity and intensifying their services.

Factor 2. Estimated coverage of the element related to total surface

Spatial coverage in relation to the total surface examined is one of the basic quantitative measurements of the functionality of a particular GI element, thus during the analysis of different GI elements it is crucial to reflect to this factor.

Although this method is unable to detect spatial overlaps between different GI elements, the approach fulfils the criteria of the original aim (a description of the importance of the different GI elements). As also discussed in the conclusions, we found interactions between the spatial coverage and connectivity factors during the evaluation of the questionnaires. These interactions will be described at a later stage in the evaluation in order to further enhance the reliability of the analysis. Table 2 provides an overview of the scores assigned for the estimated coverage of different GI elements throughout the partner regions.



Table 15: Summary of scores for factor 2

	National ecological network		Natura 2000 site and/or network		Network of areas protected by national law		Network of locally protected areas		Areas with high nature values		Network of other areas (e.g. Ramsar sites)		Elements of green infrastructure in urban areas		River floodplains, green corridors		Other initiatives	
Level of evaluatio n	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local
Netherlands and Flevoland	1	2	2	2	1	1		1		1			1	1				
Emilia- Romagna				2		2		2		2		3		1				1
Hungary	3		3		2		1		1				1					
Barcelona		3		3		3		3				1		1		1		
Cyprus	3		3		1				1		1		1		1			
Malta and Gozo	3	3	2	3	3	3		2					1	1	3	3		
Bulgaria and Plovdiv	2	2	2	1	2	2	1	1	2	1	2	1	1	1	1	1		
Bulgaria and Stara Zagora	2	1	3	1	3	1	1	1	1	1	2	0	1	2	1	0		
Azores Islands		3		3		2		3		3				2				
Latvia	2		2		2		2		2		2		2		2			
Valencia		3		3		3		2		2		2		1		1		1
Fingal County				2		2		3		3				1		1		

The only exceptions to the relatively high scores for the national ecological network are Flevoland at national level and Stara Zagora at regional/local level, because of the low coverage of the terrestrial area (FL 10 percent) and the lack of national ecological network coverage in the region (SZ).

The questionnaires show relatively high scores for the Natura 2000 network, although for the Bulgarian partners (Plovdiv, Stara Zagora) the regional values are low due to the peripheral role of this GI element in the region.

In the case of areas protected by national law, there was greater diversity in terms of the scoring for spatial coverage at both national and regional/local level, probably due to the differences in nature conservation policies at national level, and to the unequal spatial distribution of the natural assets.



During the evaluation of the questionnaires in several cases we found that partners indicated the importance of the overlaps between the national ecological network, the Natura 2000 network and protected areas. Without ignoring the issue of spatial overlapping in the coverage of these GI elements, the results clearly show that at both national and regional level these elements are the most important in terms of the spatial coverage of the total GI network.

As expected, the spatial coverage of locally protected areas is significantly higher at regional/local level. The highest scores were given by Barcelona (with a coverage of 32 percent), the Azores Islands (25 percent) and Fingal County (23 percent). It is obvious that local initiatives do not really affect the national-level coverage of this particular GI element. Regarding areas with high nature values, the scores were higher primarily at regional level (Azores Islands with more than 40 percent coverage, Fingal County 19 percent).

Considering the other GI elements (network of other areas, GI elements in urban areas, river floodplains and green corridors and other initiatives) only the network of other areas received higher scores (e.g. Emilia-Romagna indicated the importance of landscape heritage areas (13 percent).

The partnership averages for the estimated coverage of the different GI elements are shown in the chart below.



Chart 14: Partnership averages for factor 2



Based on the average values in the partners' questionnaires, the highest spatial coverage is provided by the Natura 2000 network, the national ecological network and areas protected by national law. Although the same three GI elements were also at the top at regional level, partners gave the national ecological network the highest scores.

Factor 3. Legal background

This factor was included to indicate the existence of a legislative background at European, national and regional/local level for the different GI elements. The legal provisions for various levels of protection are contained in both national and regional laws and regulations, including the national legal system, which sets out rules in addition to the general EU legal framework for the protection of various elements (e.g. Natura 2000 sites).

A sufficient and solid legal framework for protected areas and its adequate implementation and enforcement can positively influence the efficient functioning of a particular GI element. Table 3 provides an overview of the scores assigned for the legal background of different GI elements throughout the partner regions.



Table 16: Summary of scores for factor 3

	National ecological network		Natura 2000 site and/or network		Network of areas protected by national law		Network of locally protected areas		Areas with high nature values		Network of other areas (e.g. Ramsar sites)		Elements of green infrastructure in urban areas		River floodplains, green corridors		Other initiatives	
Level of evaluatio n	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local
Netherlands and Flevoland	2	2	3	3	0	0		3		1			0	0				
Emilia- Romagna				3		3		1		3		3		1				3
Hungary	2		2		2		2		2				2					
Barcelona		2		3		3		3				3		3		2		
Cyprus	2		2		3				2		2		1		2			
Malta and Gozo	3	2.5	3	2.5	3	2.5		2.5					3	2.5	3	2.5		
Bulgaria and Plovdiv	2	2	2	2	2	2	2	2	2	2	1	1	2	2	1	1		
Bulgaria and Stara Zagora	2	2	3	2	2	2	2	2	2	2	1	0	2	2	1	1		
Azores Islands		3		3		2		3		3				1				
Latvia	0		3		3		2		2		3		2		2			
Valencia		3		2		3		3		3		3		3		2		2
Fingal County				3		3		1		1				3		1		

According to the assessment, the legal background for the protection of green infrastructure elements is adequate.

Rather diverse scores for the regulation of the different GI elements can be observed throughout the partnership. Most partners assessed the legal background of the studied protected areas as being between weak and strong. Only three partners identified a very solid legal framework for GI elements (Emilia-Romagna, Barcelona). The scores suggest weaknesses in the legislative background of Fingal County and of the Bulgarian partners (Plovdiv and Stara Zagora).

At the same time, no legal background was indicated in the case of a few GI elements such as the network of areas protected by national law and GI elements



in urban areas (Flevoland) and the national ecological network (Latvia). In Hungary, there is no legal background at regional level for all GI elements, due to the administrative set-up of the country.

In terms of partnership averages, the scores for the legal background varied between weak and strong. The legal instruments related to Natura 2000 sites/networks received the highest scores at both national and regional levels, which may be due to the strict EU legal requirements for the protection of such areas. The weakest legal background was assessed for GI elements in urban areas and river floodplains and green corridors.



Chart 15: Partnership averages for factor 3

In terms of partnership averages at national level, scores for the legal background of all studied GI elements ranged between higher weak and medium levels. The GI element that scored highest was the Natura 2000 network, while GI elements in urban areas were shown to have the weakest legal background.

At regional level, partnership average scores for legal background ranged between weak and strong, but in general they showed a higher average than the respective elements at national level. Within the partnership, the Natura 2000 network has the most developed legal background, while river floodplains and green corridors are protected by the lowest level of legal instruments.



Factor 4. Financial background

This factor was included in order to indicate the availability of public and private funding (management agreements, low-interest loans) at European, national and regional/local level for the maintenance and improvement of the different GI elements. According to the EEA report on green infrastructure and territorial cohesion⁸, for financing green infrastructure projects there are various EU funds available through the European Regional Development Fund (ERDF), the European Social Fund (ESF) and Cohesion Funds. In addition, other funding instruments are provided by national governments, the European Investment Bank (EIB) and private banks or non-profit organisations. Green infrastructure initiatives can also be supported indirectly, for example through agricultural policy mechanisms such as the Common Agricultural Policy.

A sufficient level of funding is essential for managing any type of protected area and can positively influence the efficient functioning of the GI element. The evaluation aimed to assess the planning, legal background, communication and operation of the different funding sources. Table 4 provides an overview of the scores assigned for the financial background of different GI elements throughout the partner regions.

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EEA Technical Report, 2011. Green infrastructure and territorial cohesion. The concept of green infrastructure and its integrationinto policies using monitoring systems. Denmark: European Environmental Agency



Table 17: Summary of scores for factor 4

	losizoloco lovoiteli	National ecological network		 Natura 2000 site and/or network 		Network of areas protected by national law		Network of locally protected areas		Areas with high nature values		Network of other areas (e.g. Ramsar sites)		infrastructure in urban areas	River floodplains, green corridors		Other initiatives	
Level of evaluatio n	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local
Netherlands and Flevoland	1	1	2	2	1	1		2		1			3	3				
Emilia- Romagna				1		2		1		2		1		1				1
Hungary	0		2		2		1		3				1					
Barcelona		1		1		1		2				1		2		1		
Cyprus	2		2		2				2		2		0		1			
Malta and Gozo	2	2	2	2	2	2		2					3	2.5	2	2		
Bulgaria and Plovdiv	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1		
Bulgaria and Stara Zagora	2	1	2	1	2	2	1	1	1	1		0	1	1	1	1		
Azores Islands		1		1		0		1		1				1				
Latvia	2		2		2		2		1		2		2		1			
Valencia		1		1		1		1		1		1		1		1		2
Fingal County				1		1		1		1				3		1		

In terms of financial background, a rather balanced scoring of the different GI elements can be observed throughout the partnership. Most partners assessed the financial background of the studied protected areas as being between weak and medium. Only two partners identified a stable financial background for a GI element. Both Flevoland Province and Fingal County assessed the financing of GI elements in urban areas as adequate throughout planning, drafting, communication and implementation. No available funding was indicated only in the case of a few GI elements, if otherwise designated and managed. In Hungary there is no financial background for the national ecological network, while in Cyprus funding for urban GI elements is missing. In the Azores Islands no funding is available for the network of areas protected by national law.





Chart 16: Partnership averages for factor 4

At national level, partnership average scores for the financial background of all studied GI elements ranged from weak to medium. The GI element that scored the highest was the Natura 2000 network, while the weakest financial background was indicated for river floodplains and green corridors.

At regional level, the partnership average scores for financial background ranged from weak to medium, but in general they showed a lower average level than the respective elements at national level. Within the partnership, GI elements in urban areas receive the highest level of funding, while the lowest level of funding was indicated for networks of other areas, such as Ramsar sites.

With respect to sources of funding, for partners from new EU member states (Hungary, Bulgaria, Cyprus, Malta and Latvia) most of the available funding was ensured through European funds or PPPs in some cases. At the same time, national and mainly regional/local-level funding was found to be inadequate and isolated or missing. A few partners from old EU member states, such as Emilia-Romagna, Barcelona, Valencia and the Azores, also indicated reliance on EU funds and outlined limited and constantly diminishing access to direct funding and, at the same time, an increasing need for private financing mechanisms. It was emphasised, however, that EU funds mostly target Natura 2000 areas and are not available for other GI elements. Other partners outlined the inadequacy and weaknesses of EU/national funds and emphasised the effectiveness of a variety of available private and national/regional public funds (Flevoland) or directly financed local-level initiatives (Fingal, Barcelona).



Factor 5. Methodology

This factor was included in order to assess the methodology behind GI elements and the possibilities for them to become best practice. The evaluation included methodological background (criteria for area designation, databases, stakeholder involvement) and institutional background, excluding the issues covered by factors 3 and 4 (legal background and financial background).

The emerging GI concept, and the methodology used for the identification and designation of a site as a GI element and for subsequent implementation, vary according to national, regional and local governance. This is reflected in Table 5, which shows a wide range of scores as the methodology used is often drafted by the individual national, and in some cases regional, governments. While the EEA report on green infrastructure and territorial cohesion⁹ offers some guidance on the methodology used in the publication, a more detailed concept still needs to be developed.

⁹

EEA Technical Report, 2011. Green infrastructure and territorial cohesion. The concept of green infrastructure and its integration into policies using monitoring systems. Denmark: European Environmental Agency



Table 18: Summary of scores for factor 5

	National ecological network		Natura 2000 site and/or network		Network of areas protected by national law		Network of locally protected areas		Areas with high nature values		Network of other areas (e.g. Ramsar sites)		Elements of green infrastructure in urban areas		River floodplains, green corridors		Other initiatives	
Level of evaluatio n	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local
Netherlands and Flevoland	3	3	3	1	1	1		0		1			2	2				
Emilia- Romagna				2		2		1		2		2		1				2
Hungary	2		2		3		2		2				1					
Barcelona		3		2		2		2				2		1		2		
Cyprus	2		2		2				2		1		1		1			
Malta and Gozo	2	2	2	2	2	2		2					2	2	2	2		
Bulgaria and Plovdiv	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1		
Bulgaria and Stara Zagora	2	2	2	1	1	1	1	1	1	1	2	1	1	2	1	1		
Azores Islands		2		2		1		1		2				1				
Latvia	2		2		2		2		1		2		2		2			
Valencia		3		3		3		2		2		2		2		1		2
Fingal County				2		2		2		2				3		2		

The table shows great diversity across the partner countries and regions. A complete absence of methodology was recorded only in the case of the network of locally protected areas at regional level in Flevoland. In all other cases, at least some methodological background exists.

The most balanced scores were recorded in Malta and Latvia, where the existing methodology proved to be consistently capable of meeting the challenges associated with GI elements. Nationally administered GI elements in Valencia and Flevoland — the national ecological network, the Natura 2000 network and the network of areas protected by national law — were given excellent scores in the methodological assessment in both theory and practice. The methodology for GI elements in Cyprus and Latvia, on the other hand, still offers quite some room for improvement as the quality of the methodology fluctuates in some places between inadequate and average. Bulgaria in particular suffers from a rigid,



state-controlled, centralised approach that leaves little space for the regions to be involved in the development and refining of the methodology. Furthermore, the problem of low stakeholder involvement is endemic.

By contrast, the assessment reveals that the methodology used in Hungary is detailed, well regulated and well designed for area designation. The higher scores assigned to the Hungarian network can also be attributed to a high level of stakeholder involvement in the participatory process for the designation of protected areas and for consultations regarding management requirements.



Chart 17: Partnership averages for factor 5

With respect to partnership averages at national level, the national ecological networks and the Natura 2000 network were the only GI elements that scored above average. The rest of the GI elements oscillate around the average, between medium and low levels.

The evaluation of the situation at regional level demonstrates a larger average range. Similar to the graph mapping out the averages at national level, the national ecological network appears at the forefront of the comparison. No other GI element was above the average mark. The scoring of the category "other initiatives" is misleading in this case, since only two regions are included.

Both graphs illustrate the generally poor level of the methodological background used in the identification and designation of GI elements, and later in policy implementation. No significant difference can be observed between the two levels of assessment. What is certain, however, is that all GI elements, with the



exception of the national ecological network and to some extent the Natura 2000 network, require methodological improvements.

Factor 6. Public awareness and acceptance

Green infrastructure development provides not only environmental and economic benefits, but also numerous social benefits through the spatial delivery of ecosystem services. However, in order to achieve public recognition of such benefits, the involvement of a range of stakeholders throughout the development of all GI elements is essential.¹⁰

Factor 6 of the analysis therefore focused on the social aspect of green infrastructure by looking at the level of public awareness and acceptance associated with the different GI elements. The factor comprises two components — the existence of public opinion (awareness); and whether this public opinion is positive or negative (acceptance). Scores could be influenced by general public opinion (i.e. the importance of GI and the GI element among other policy issues), the number of related bottom-up initiatives, volunteer activities, as well as the involvement of NGOs and other stakeholders in the implementation process.

¹⁰ EEA Technical Report, 2011. Green infrastructure and territorial cohesion. The concept of green infrastructure and its integration into policies using monitoring systems. Denmark: European Environmental Agency



Table 19: Summary of scores for factor 6

	National ecological network		Natura 2000 site and/or network		Network of areas protected by national law		Network of locally protected areas		Areas with high nature values		Network of other areas (e.g. Ramsar sites)		Elements of green infrastructure in urban areas		River floodplains, green corridors		Other initiatives	
Level of evaluatio n	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local	National	Regional/ local
Netherlands and Flevoland	2	2	1	1	1	1		2		3			3	3				
Emilia- Romagna				1		2		1		1.5		1		2				1
Hungary	1		2		2		2		3				2					
Barcelona		2		2		2		2				2		3		3		
Cyprus	1		1		1				1		1		1		1			
Malta and Gozo	2	1.5	2	1.5	2	1.5		1.5					2	1.5	2	1.5		
Bulgaria and Plovdiv	1	1	2	2	1	1	1	1	1	1	1	1	1	2	1	1		
Bulgaria and Stara Zagora	1	1	2	2	1	1	1	2	2	2	1	1	1	2	1	1		
Azores Islands		1		2		1		1		1				1				
Latvia	1		2		2		2		2		1		3		1			
Valencia		2		2		3		3		3		2		2		2		3
Fingal County				1		1		2		2				3		1		

The majority of scores indicate a weak or medium level of public acceptance of the different GI elements in the partner regions. Overall, the Province of Barcelona and Valencia Region have the highest averages, followed by the Azores Islands and Fingal County. The lowest averages are seen from Cyprus and Plovdiv region (with Bulgaria).

Based on the explanations provided by each partner, high scores usually have two justifications: either the GI element was developed with strong stakeholder involvement, or there are compensation schemes associated with the element that generate positive public opinion, at least among the recipients. A low level of public awareness and acceptance may indicate that the public are mostly unaware of the existence of the GI element — as in the case of networks used merely for territorial planning purposes or smaller initiatives such as Ramsar sites — or that there is a strong negative public opinion regarding the element. The



reason for this, according to partners' descriptions, is often conflict with other, preferred forms of land use, mostly agriculture and construction. The lack of stakeholder involvement during the designation of sites was also indicated in some instances as a reason for the negative attitude towards a GI element, and it seems to be difficult to alter public opinion at later stages.



Chart 18: Partnership averages for factor 6

Looking at the national level separately, average scores for the different GI elements still rank between weak and medium for social acceptance. Areas with high nature values and urban GI elements have the highest partnership averages: these are still below 2.0, indicating room for improvement in terms of public opinion about GI elements. The popularity of areas with high nature values is partly based on the existence of specialised compensation schemes. Urban GI elements, on the other hand, seem to be among the most important policy issues for local inhabitants, which explains the higher scores. Networks of other areas (Ramsar sites in the case of most partners) have a low level of social awareness among all partners who evaluated GI elements at national level, while river floodplains and green corridors achieved only a slightly higher average for this factor.

The regional-level evaluation of public awareness and acceptance shows higher scores than at national level. Urban GI elements have an even greater significance in the eyes of the public, while other initiatives and areas (in this case landscape heritage and coastal areas) have the second highest average. Similarly to the national level, the network of other areas and river floodplains and corridors received the lowest scores on average.



Project partners face similar problems regarding the social acceptance of GI elements. It is evident from partners' presentations that public awareness of the GI concept in general, and its separate elements, needs to be raised, which requires a lengthy educational process. Fortunately, people are increasingly recognising the benefits of the ecosystem services provided by green infrastructure (as indicated by the growing popularity of national parks). As for public acceptance, influencing general public opinion may not prove effective in all cases, thus smaller stakeholder groups (such as local landowners) with conflicting interests should also be identified and provided with (financial) incentives.



Conclusions

The overall aim of the evaluation methodology designed by the REC before the project's second exchange of experience workshop was to create a common communication structure regarding the GI initiative. It was also important to present a broad picture of possible GI elements and describe their attributes. It is obvious that the selected method of evaluating different GI elements according to six factors, using values of between 0 and 3, is not sufficiently detailed to qualify as a sound scientific assessment. However, it can be considered as an effective tool for reaching the overall aim.

During the planning of the methodology, several approaches for data collection and evaluation were taken into consideration. A balance had to be found between the planned results and the efforts made during the evaluation procedure. The presented methodology was selected on the basis of knowledge of the partners as it allows a flexible and rapid evaluation without the need for carrying out detailed preliminary scientific studies. To be able to capture details regarding the different values of attributes used to describe GI elements according to expert estimations, we tried to keep the evaluation methodology simple by choosing appropriate factors and defining a range of values.

The factors were selected based on the REC's recommendation and the opinions of the partners. During the planning of the methodology our aim was to prevent overlapping between different factors. However, due to the nature of the whole evaluation procedure, it became clear that some factors are not independent from one another. There is a clear linkage between estimated connectivity (Factor 1) and estimated spatial coverage (Factor 2), although there are cases when a GI element with a high level of spatial coverage meets with a lower level of connectivity.

Regarding the evaluation of the different factors, the REC proposed a three-level (in some cases four-level) scoring system, with a detailed description of the meaning of the different values (presented in the "Methodology" section of the present report). In some cases, based on the ranking given in the questionnaires received from the partners (e.g. when values of 0.5 were given) we found that the three-level ranking was not sufficiently precise to describe the details of the different factors, which raises the question of further "fine-tuning" the ranking system. Nevertheless, it seems that only a methodology with the robustness of the proposed one is able to handle the different levels of knowledge among the experts. In the presented methodology, the range of the different values for each factor is wide enough to accommodate well-established expert estimations.

During the evaluation of the received questionnaires we found that the lack of appropriate weighting among factors in some cases leads to biased final results. Taking into account that the proper weighting among factors needs a more complex approach, in this report we dispensed with the weighted evaluation.



Focus group assessment of the questionnaires is advised as a further step in the evaluation, which would increase the sample size of the survey and clarify the results.

The level of evaluation (national, regional) of the different GI elements differed based on the availability of data from the partners. While some partners provided information for both levels, others were able to do so only for either national or regional level. This data diversity arises from the different possibilities available to the partners and does not affect the overall evaluation.

Based on the data provided by the partners, the evaluation shows the following picture for the different GI elements in terms of transferability potential.





The diagram shows that at national level the highest scores were given to wellknown and widely implemented GI elements, illustrating the importance of the Natura 2000 network and the network of protected areas.



The regional evaluation gives a slightly different picture.





At regional level, the evaluation shows a balanced result, where higher values are given to GI elements with local importance (locally protected areas, urban GI elements).

Based on the summarised results of the received questionnaires we tried to define the transferability potential of the different GI elements and estimate their importance compared to the GI network as a whole. During this analysis, the partner average for dissemination potential per GI element was taken into account.





Chart 21: The role of the different GI elements at national and regional level

The results clearly show the different priorities at national and regional level in terms of GI elements. The pattern of the values highlights that partners estimated the Natura 2000 network as the most important GI element at national level, and the national ecological network at regional level. While at national level, besides the Natura 2000 network the national ecological network and protected areas were given the highest scores, at regional level protected areas and locally protected areas also play an important role.

The most important differences in the priorities of national and regional level were found in the evaluation of locally protected areas, other protected areas (e.g. Ramsar sites) and urban GI elements. In each case, the analysis showed significantly higher priority at regional level than at national level.

Besides the general analysis it is also important to look at the results of the evaluation of the different GI elements according to factor. These results provide an insight into the specialities of the different GI elements, highlights weaknesses, and supports the possibility of further development.





Chart 22: Factors describing different GI elements at national level

The results of the national-level evaluation show that the GI elements with the highest transferability potential usually received high scores in terms of connectivity, estimated coverage and legal background. Unfortunately, in several cases the strong legal background is not accompanied by appropriate financing. It is not surprising that the highest public acceptance values were ascribed to local initiatives not to countrywide GI elements. The regional results for these factors are shown in the following diagram.





Chart 23: Factors describing different GI elements at regional level

The overall results highlight the fact that GI elements with high coverage and connectivity at national level do not always meet the same criteria at regional level. The results clearly show that public acceptance values are extremely high in terms of urban GI elements, and in terms of elements where a bottom-up approach can be assumed.