

# GAP ANALYSIS

on the Identification of the Needs for Improving  
the Planning Processes and Tools Related  
to Ecological Corridors Identification  
and Preservation

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# Gap Analysis on the Identification of the Needs for Improving the Planning Processes and Tools Related to Ecological Corridors Identification and Preservation

Deliverable 3.3.2

Elaborated in the frame of Work Package 3 "Knowledge Source Base", WP Leader: Zuzana Okániková

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**W**e carried out a questionnaire to identify the main gaps of the planning processes and tools related to ecological corridors in case of the 5 involved countries. It is crucial that these gaps be identified first in order to find the most suitable and necessary improvement for the planning systems. The following chapter presents a comparative analysis of the countries highlighting the crucial unique and common gaps in their system as well as mentioning the good solutions set as examples for other countries.

**The 3 main sub-division for the gap-analyses are the followings:**

- » Relevant policy frameworks and legislation for ecological networks
- » Participatory planning and stakeholders' involvement
- » Integration spatial planning and ecological networks

## 1. RELEVANT POLICY FRAMEWORKS AND LEGISLATION FOR ECOLOGICAL NETWORKS

**T**his sub-topic discusses the main gaps within the related policy framework, the most important challenges and used indicators during the identification of the ecological network, and the monitoring activities.

**corridor planning is the “Types of regulations and consistency”.** All of the 5 countries have serious gaps in this field, which is mainly in behalf of the shortcomings of this regulation. In Slovakia, the Territorial System of Ecological Stability covers the whole territory of the country, but it is only background, not a binding document. Similarly, in Serbia, the lack of mandatory obligation to define and protect ecological corridors leads to further deterioration of still existing parts of natural corridors and in this case, the difficulties of network creation appear at national level mainly due to the lack of legal obligations on corridor issues in international conventions. In Romania, the National Strategy highlights the irregularities, inconsistencies and legislative degradations related to spatial/urban planning and the protection of natural and cultural heritage. In the cases of Hungary and the Czech Republic, we identify very similar problems related to ecological corridor planning. In Czech Republic, the methodology of TSES definition is not focused on ecological connectivity for animal species and is not usable for large carnivores.

### 1.1. Where are the main gaps in the ecological network-related policy framework?

Based on the answers, **5 main problem areas were identified:** 1. Methodology; 2. Definition; 3. Types of regulations and consistency; 4. Social agreement and conflicting interests; 5. Institutional framework.

**In general,** all of the analysed countries **express the importance of ecological networks and ecological corridors** in their policy framework. Unfortunately, in many cases, **the implementation of this idea is unsatisfactory.** As Table 1 shows, **the most important gap area related to ecological**

Gaps related to the **“Social agreement and conflicting interests”** and **“Institutional framework”** have been identified **in more than one country.** Both in Hungary and in Serbia, the different interest groups with conflicting interests caused serious problems during the

	The Czech Republic	Hungary	Serbia	Slovakia	Romania
Methodology	Out-dated methodology; the new methodology does not contain desirable changes and improvement, only copied the old one				
Definition	TSES definition is not focused on ecological connectivity for animal species, nor is it usable for large carnivores			Limited and dated definition of ecological networks	
Types of regulations and consistency		Problems related to plan realization, especially to financing; due to strong lobby power of some stakeholders; legal regulations cannot answer specific problems appropriately or they can launch exceptional legal rules	Lack of mandatory obligation to define and protect the ecological corridors; the regulation of the network management as an intersectoral issue is not regulated	Official documents dealing with ecological networks are only background, not binding documents; request oriented but not obligatory documents; position of landscape ecological plan/ environmental plan is weak in the system of spatial planning	Irregularities, inconsistencies and legislative derogations; insufficient regulations
Social agreement and conflicting interests		The objectives of the ecological network development are in contrast with the present developments and decision-making	Lack of general social agreement; different interest groups with conflicting interests		
Institutional framework		Deficient institutional framework			Deficient institutional framework; poor implementation of legal provisions

Table 1. Main gap areas in the countries

implementation of the regulations and programmes. We also detected deficient institutional frameworks in both Romania and Hungary.

In addition to the former gaps, the out-dated **methodology** and the related weak and old **definition** of ecological networks and corridors cause problems in both Slovakia and the Czech Republic.

In **the Czech Republic**, the out-dated methodology for designing the Territorial System of Ecological Stability was replaced recently (in 2017) by a new one. However, it is only a copy of the former one, and does not include the desired changes and improvements.

In **Hungary**, the biggest problems related to the realization of the plans mainly occurred due to financial issues. Another serious problem is a strong lobby power of some stakeholder groups (developers etc.), which in many cases cause poor efficiency of the ecological network and corridor related policies.

In **Serbia**, the Emerald and Natura 2000 networks are functioning as patchworks without a defined corridor network. The lack of mandatory obligation to define and protect ecological corridors leads to further deterioration of still existing parts of natural corridors. In many cases, the network establishment is foreseen by the legislation on nature protection but it is hampered by other relevant sectors. The

crucial problem is that the network management regulation as an intersectoral issue is unregulated. There is also a lack of general social agreement about the significance of ecological networks.

In **Slovakia**, the legal framework for the ecological network definition is insufficient; however, the tradition of the respective documents dealing with ecological networks and corridors is old. The Territorial Systems of Ecological Stability cover the whole territory of Slovakia; nevertheless, they are only background, not binding documents. The system of spatial planning should include a real third pillar of comprehensive environmental planning/landscape planning. There is the need for the regulatory instruments to include other instruments supportive for the implementation of ecological network plans as many of the drawn corridors are not functioning but need to be established.

In **Romania**, the biggest problem includes irregularities, inconsistencies and legislative derogations, insufficient regulations and sanctions for offenses related to spatial/urban planning and the protection of natural and cultural heritage. Related to this, the lack of consideration of the natural and/or cultural landscape in the development and evaluation of projects in the fields of spatial planning and infrastructure (transport, energy, production), in accordance with the provisions of the European Convention on Landscape, also means a big gap. The deficient institutional framework with conflicts of competence among several authorities leads to diminishing responsibilities and poor implementation of legal provisions.

**cause crucial problems** and gaps, since they make the elaboration of a common network and also related communication more difficult. However, **in several cases, the indicators, methodology and plans could be actualized** in the near future (e.g. in Hungary). For instance, large carnivore species have significantly increased their numbers in Europe. Therefore, an update of the map and reinforcement into the law can help to keep the landscape suitable for wildlife and their movements.

In **the Czech Republic**, in order to identify the elements of the Territorial System of Ecological Stability, **data on hydrology and climate, species composition**, species diversity and edge composition have been used. **Historical documents** (historical maps, aerial photos, cadastre data etc.) have been used to confirm the consistency of landscape structure and to plan the TSES components. Data on **actual vegetation** have been compared with the natural vegetation composition. The main indicator for the TSES identification is the **level of ecological stability** (or the level of human impact). Based on the level of ecological stability of ecosystems, landscape structures are categorized into 6 classes (natural to denaturalized areas). Landscape structures within classes of relatively high level of ecological stability are established as the set of ecologically important landscape segments (the ecological stability framework).

In **Hungary**, the designation of the Hungarian National Ecological Network was carried out in two steps: In phase 1. General planning (1998–1999), the plan was prepared on schedule. The aim was not to create a map with absolute precision, but to include the ecological network into the administrative planning system from the onset of the planning process. In phase 2., Planning according to the categories of the Pan-European level (1999–2001) was prepared. The components of PEEN, and also the criteria for their identification were also determined (the well-known core areas, ecological corridors, buffer zones, and restoration areas). During the analysis, **various data sources were used, including e.g. protected areas, records of floodplains, forestry schedules, important bird areas, existing and planned NATURA 2000 sites, sensitive areas, and results from field research.** The digital database is available in 1:50000 scale.

In **Serbia**, the identification of ecological networks in the cultural landscapes is based on the fine scale recognition of **still existing habitat patches**

## 1.2. What indicators are used for identification of ecological networks?

All of the analysed countries are **using indicator systems for identification of ecological networks and corridors**. They are usually **based on the Natura 2000 and the Pan-European Ecological Network methodologies**; however the used indicators and their importance **differ in every country**. The reason behind these differences mainly lies in the available database and the legislation background. **These local differences**

and the recognition of **anthropogenic landscape elements (shelterbelts, canals, levees etc.) functioning as habitats** or ecological corridors. The most important quality indicators are the **species and/or structural diversity of the habitat or corridor, presence of protected species and the assessed persistence of the network element** within the landscape. Specific indicators are: habitat types; presence of strictly protected and protected wild species; presence of bird species designated under the Birds Directive; protection zones as areas outside the boundaries of the protected areas.

In **Slovakia**, the main indicators for bio-corridors as parts of the Territorial System of Ecological Stability are **linked to the features of land-cover and value of the territory**. There are hydric and terrestrial bio-corridors connecting bio-centres and their buffering zones. In many cases, the bio-corridors are defined as a wish or need, rather than the real functioning migration lines. There exists no binding norm for their definition.

In **Romania**, the model for setting up protected natural areas **considers the interests of the local community**. The law specifies the criteria for selecting eligible sites as sites of community importance and for their designation as special areas of conservation. This is done in 2 steps: Step 1 - where the relative importance of sites for each natural habitat and for each species is assessed at national level according to specified criteria (**representativeness, surface of the covered area, conservation degree, degree of isolation, site value for conservation of the species concerned**). Based on these criteria, the proposed sites are classified as eligible sites of community importance for the conservation of each habitat or species. The list will contain sites that have priority natural habitat types and priority species selected depending on the criteria. Step 2 - assessing the community importance of the sites included on these national lists. All sites identified as containing priority natural habitat types and/or species will be considered as sites of Community importance. The assessment of Community importance for the other sites will consider certain criteria specified by law, such as **the relative value of the site at national level, the geographic location of the site in relation to the migration routes of the species included in the annexes, the total area of the site, the number of natural habitats and the species present on the site, the overall ecological value of that site for the concerned biogeographical regions**.

### 1.3. What are the main problems and challenges during the implementation?

Based on the questionnaire, **6 main areas of challenges** were identified related to the implementation of ecological corridors: **financial; technical; communicational; methodical; interest; and skills**.

As Table 2 shows, **the main problems** during the implementation are **related to the technical, communicational, methodological and interest issues**. In Serbia, the Czech Republic and Hungary, the technical aspect mainly means the lack and/or accessibility of data. In Serbia, we can observe a lack of data on populations; habitat maps and insights into sectoral plans. Similarly, in the Czech Republic, one of the main challenges is the missing information system, while in Hungary, the accessibility of the existing database causes difficulties during the implementation process. Insufficient communication is also a basic challenge in the Czech Republic, Romania and Hungary. In all cases it means a lack of collaboration between authorities and land owners (or other stakeholders).

Methodological issues mainly cause problems in Slovakia, Serbia and the Czech Republic. Over the last two countries, it primarily means the use of out-dated methods and measures. The conflicting interests also represent problems during the implementation process in Hungary, Slovakia and Romania. As Table 2 shows, the lack of professional staff also causes difficulties, especially in the cases of the Czech Republic and Serbia, while insufficient financial support can be detected in Hungary and Serbia.

In the **Czech Republic**, designing of the TSES is still mainly based on the biogeographical classification, which means the theoretical form of ecosystems that would evolve without human influence. On the other hand, the current state of biotopes is only marginal within the designing process, as well as occurrence of target species and their environmental requirements. The TSES theory is still based on the assumption that adding ecologically stable forest elements to the human impacted landscape is the best way to increase ecological

	The Czech Republic	Hungary	Serbia	Slovakia	Romania
Financial		X	X		
Technical (e.g. database)	X	X	X		
Communicational	X	X			X
Methodical	X		X	X	
Interest		X		X	X
Skills	X		X		

Table 2. Areas of the main challenges during the implementation

stability in the Czech Republic. One of the main shortcomings in TSES designing is the missing information system, which would allow for a comprehensive overview of the designing and implementation of the TSES at individual levels, as well as the viewing of adjustment history of designing (Šmídová, Škapec, Tárybnický, 2012).

In **Hungary**, in several cases the lack of financial support (or weak support) can be a barrier of ecological corridor implementation. The difficult accessibility of the existing databases is also a crucial problem. Even if the stakeholders' involvement and the public participation issues highlighted by several documents, programmes, in practice the communication between the different stakeholders' groups is still poor. Conflicting interests appear in the majority of the cases (usually this causes the biggest problem during the implementation process).

In **Serbia**, the main confrontations during the implementation are the lack of data (on populations; habitat maps; insights into sectoral plans); financial support; professional staff; and the implementation of previously defined measures.

In **Slovakia**, the main problem is the dominance of regulatory instruments and a lack of instruments for the network competition. The need to complete the network is not properly taken into account by public investments.

In **Romania** (similarly to Hungary), the communication between different stakeholders' groups and conflicting interests causes the main challenges within the implementation process.

### 1.4. Is there any monitoring activity after the development of ecological networks (what indicators are used)?

**Gaps and weaknesses were identified** regarding the monitoring activities after the development of ecological networks in the analysed countries. As Table 3 shows, only **2 of them (the Czech Republic and Romania) have got direct monitoring activities**. However, the **other three countries (Hungary, Serbia, and Slovakia) have also got optional, indirect monitoring** activities, but these are not widespread in practice (usually they are related to certain projects or research). It is of utmost importance to implement these good examples in general practice. The used **indicators are also very diverse** in the analysed countries, therefore the methods and indicators should be harmonised.

In the **Czech Republic**, the assessment of the TSES regulated by law (Decree 395/1992, Section 3). On a regular basis, authorities responsible for the conservation of the natural environment conduct assessments of ecological stability systems in terms of their stabilization potential. The assessments specifically include a detailed delineation of the system boundaries, the level of biological diversity, an assessment of the vegetation makeup in the

	Direct monitoring activity	Indirect (optional) monitoring activity	Types of indicators used (if any)
The Czech Republic	On a regular basis, authorities responsible for the conservation of the natural environment conduct assessments of ecological stability system in terms of their stabilization potential.		Detailed delineation of the system boundaries, the level of biological diversity, an assessment of the vegetation makeup in the system and the ability of the ecosystem to resist the effects of pollution, erosion or other physical or chemical environmental stress factors
Hungary		Monitoring activities are existing for the Natura 2000 areas; however, these are usually optional (there is not enough financial or human resource existing). Since 1997, the National Biodiversity Monitoring System has developed methods for the tracking; nevertheless, these are not widespread generally.	
Serbia		Some observations and surveillance are practised, rather than monitoring of some species and habitats, but it is not specifically in connection with the ecological network.	
Slovakia		The State Nature Conservancy System provides the monitoring of the networks as its own initiative. Some monitoring activities used to be prescribed as the output form the EIA process.	
Romania	The management of protected natural areas shall be assessed at least once a year based on the monitoring and on-site inspections by the competent environmental authorities.		The monitoring activities include biodiversity monitoring, tourism monitoring in order to determine its impact on the flora and fauna of the site and to establish the protective measures required

system and the ability of the ecosystem to resist the effects of pollution, erosion or other physical or chemical environmental stress factors. The outcome of the assessment is to establish whether or not the respective ecological stability system meets the desired criteria.

In **Hungary**, monitoring activities are existing for the Natura 2000 areas; however, these are usually optional (there is not enough financial or human resource existing). Since 1997, the National Biodiversity Monitoring System has developed methods for the monitoring; however, these are not widespread in general.

In **Serbia**, there exist no general monitoring activities. Some observations and surveillance are practised, rather than monitoring of some species and habitats, but it is not specifically in connection with the ecological network.

In **Slovakia**, the state nature conservancy system provides the monitoring of the networks as its own initiative. Some monitoring activities used to be prescribed as the output form of the EIA process, but there exists no well-developed capacity for systematic monitoring of ecological networks.

In **Romania**, by law, management measures are included in the Management Plans of Protected Areas, also intended to maintain the functions of ecological corridors. In addition to the Management Strategy, a 5-year Operational Plan is being developed. The management of protected natural areas shall be assessed at least once a year based on the monitoring and on-site inspections by the competent environmental authorities. The competent authority for environmental protection shall establish a system for monitoring the conservation status of natural habitats and species

of wild flora and fauna of community interest. Based on the results of assessments, it may be proposed to amend the national list of Natura 2000 sites. An issue that concerns both the aspect of monitoring and stakeholder involvement in environmental issues is the change of legal provisions on the management of sites of community importance and protected areas of national interest. However,

according to the Emergency Ordinance 75/2018 for the modification and completion of normative acts in the field of environmental protection and of the regime of foreigners, the Government has removed the notion of the curator (custodian) of the protected natural area from the environmental law, which will be managed by the National Agency for Natural Protected Areas.

## 2. PARTICIPATORY PLANNING AND STAKEHOLDERS INVOLVEMENT

**W**ithin this sub-topic, the main gaps in the stakeholders' involvement and in the compensation system, the main conflicts between the different stakeholders and the awareness of the importance of the ecological networks were analysed.

**All the 5 countries guarantee the right to be consulted in the decision-making process** regarding the development of environmental policy and legislation, issuance of regulatory acts in this field in elaboration of plans and programs. However, **in practice**, due to the lack of human and financial capacity and the lack of interest, **the public participation is insufficient** (e.g. Slovakia). It mainly means information rather than real discussion and cooperation.

### 2.1. What types of stakeholders' involvement is applied during the planning and implementation process?

**In all of the analysed countries, the importance of stakeholder involvement is very similar.** In all cases, **legal rules define the stakeholders**, public bodies (e.g. ministries, public enterprises and public institutions). Their obligations are also clearly regulated (their most important task is to provide data and information, and take part in the consultations and discussions). **In most of the countries, the scope of stakeholders is broadened by the SEA directive** (e.g. Slovakia, Hungary). All subjects interested in the planning issue have got formal access to the planning process.

In **the Czech Republic**, the Ministry of the Environment of the Czech Republic is the only authority responsible for the supra-regional TSES. The authority charged with keeping the files and documentation of the supra-regional TSES is the Agency for Nature Conservation and Landscape Protection of the Czech Republic. Regional authorities/Administrations are responsible for designing, developing and assessing the Regional Territorial Systems of Ecological Stability, while municipalities with extended competences (powers) play the same role for the Local Territorial Systems of Ecological Stability. Regional administrations, the Nature Conservation Agency of the Czech Republic and Nature Park managements control whether the plans, projects and measures for the restoration of the TSES are correctly prepared and fulfilled. The protection of a system of ecological stability is the obligation of every owner or user of land that forms this system; the establishment of such a system is a public interest shared by the owners of the land, by the community and by the state. The Ministry of Environment of the Czech Republic shall specify the details for defining and assessing an establishment

in a generally binding resolution.

In **Hungary**, as the National Ecological Network and the Natura 2000 areas are closely related and integrated into the spatial planning system, the same legislation background is relevant. It lists all the public required to provide data and information to elaborate the plan.

In **Serbia**, mainly consultations with public enterprises for forest management, hunting societies, local tourist organizations, NGOs, and local governments exist in the process of planning. In the process of implementation, some of these organizations are established as managers of protected areas. Also, database exchange and free access databases of forestry, water authorities, cadastre and spatial plans are used.

In **Slovakia**, the system of spatial planning including the landscape planning, land-use planning and socio-economic development planning of territorial subjects, comprehensive strategic planning including a broad range of stakeholders is obligatory. The scope of stakeholders is broadened by the SEA directive mirrored in the law act on SEA/EIA. All subjects interested in the planning issue have got formal access to the planning process. The problem is their capacity for efficient participation and de-formalisation of the participative processes, including the transparency of the decision making itself. In many cases the public opinion is the object of attraction and responsible state bodies do not react to it staying in courts, but they decide after years and demotivate the public engagement.

In **Romania**, the state guarantees the right to be consulted in the decision-making process regarding the development of environmental policy and legislation and issuance of regulatory acts in this field in the elaboration of plans and programs. When the environmental assessment is carried out, besides drafting the environmental report, consultation of the public and public authorities interested in the effects of the plans and program implementation is obligatory, as well as the consideration of the results of these consultations in the decision making process and then informing the public on the decision taken. Informing the public in the regulatory procedures as for plans, programs and activities is carried out in accordance with the specific legislation in force. Consultation of the public is mandatory in the case of procedures for the issuance of regulatory acts, according to the legislation in force. The central public environmental authority shall consult the representatives of

non-governmental organizations and other representatives of civil society at least once a year regarding the establishment of the environmental protection strategy. The stakeholders involved in the planning and implementation process (included in the Natural Site Management Plan) are: The Ministry of Environment, Local authorities (County councils, City/Town halls and local councils, The Environmental Protection Agency, Regional Agency for Environmental Protection, The Environmental Guard - County Commissariat, County Water Directorate, County Forestry Directorate), academic institutions, associations, foundations, tourism companies, economic agents, and land owners.

## 2.2. Is there any compensation for farmers or landowners during the implementation?

According to the type of compensation we can cluster the analysed countries into **2 groups: compensation regulated by law; existing compensation that needs further clarification.**

	Compensation regulated by law	Compensation, but needs further clarification
The Czech Republic	X	
Hungary	X	
Serbia		X
Slovakia	X	
Romania	X	

Table 4. Types of compensations in the analysed countries

As Table 4 shows, we can identify significant **gaps related to the compensation** in the case of Serbia. In Serbia, some kind of compensation exists; however, the particular cases and the way this compensation is put in practice are not defined. In the other **4 countries**, there is **compensation regulated by law**; however, in some cases, this compensation is mainly related to the Natura 2000 areas (e.g. in Hungary, Slovakia).

In **the Czech Republic**, compensation is enacted for aggravation of agricultural and forest management. If owners of agricultural land, owners of forestry, and owners of a pond with fish or water poultry, or renters who legally use those lands suffer from harm, they are entitled for financial compensation. The financial compensation shall be provided from the state budget by the competent nature conservation authority based on a written application of the holder's entitlement.

In **Hungary**, there is a financial compensation for landowners in order to maintain and preserve their land in current condition. This compensation is regulated by law (e.g. 269/2007. (X. 18.)); however, it focuses on Natura 2000 areas. As for the other parts of the ecological network (which are not under protection), the compensation is not regulated; there only exist recommendations.

In **Serbia**, the current legal base of compensation needs clarifications and more explicit definition of cases when the state is willing to compensate. As for now, no specific compensations for the stakeholders during the implementation process have been used. In most cases, the present land use of network elements has to be preserved, which means no restriction for the users.

In **Slovakia**, there is no special instrument for the compensation for the owners and users of the plots belonging to the ecological corridors. The only compensatory instrument is linked to the nature protected areas (e.g. Natura 2000 areas).

In **Romania**, for land located in protected natural areas owned by private owners or concessionaires; these will receive compensation for compliance with the restrictive provisions in the management plan of the protected natural area or for the conservation measures in place. Also, until the approval of the management plans, the administrators of the respective protected natural areas are required to establish a set of conservation measures for which compensation is required. For landowners/land users from Natura 2000 sites, both the EU and the country have been funding

Natura 2000 programmes. At present, there is also a draft of Government Decision for the approval of the Methodological Norms for granting, using and controlling the state aid for compensations, representing the value of the wood that the owners do not collect due to the protection functions established by forestry arrangements, necessary to cover the costs claimed by the sustainable management of forests located in Natura 2000 sites.

## 2.3. What are the main critical points regarding ecological network development?

The **most important critical point**, which occurred in every analysed country, is **the weak implementation**. In all cases, the theoretical framework and the identification of ecological networks more or less exist; however, the implementation of the plans and programs is much poorer in all of the analysed cases. **Other critical points frequently appearing** among the answers are: **lack of financial support, lack of professional staff, lack of sufficient communication and real public participation, and difficult data accessibility.**

In **the Czech Republic**, TSES suffers from many stereotypes, out-dated methodologies and only marginal public interest. The future of TSES consists not only in improving the system, but also establishing its real meaning. Other critical points regarding the ecological network development are: missing information system, slow rate of land consolidation, low quality of land-use planning documents, and difficult communication between the stakeholders. Also, TSES corridors are in many cases only defined "on paper"; the finalizing phase with real measures to complement is missing the features of ecological networks and/or improving the functions of the existing ones is unfortunately often missing.

In **Hungary**, the main critical point is the insufficient implementation of ecological network development. The difficult accessibility of databases also means a crucial problem. Similarly to the Czech Republic, the quality of the land-use documents in several cases is low and the communication between the stakeholders is also difficult.

In **Serbia**, the ecological network, although officially established and proclaimed, still has not grown in functionality in ecological sense. Ecological network consists of various types of protected areas. Legislation is still not fully operational. There is a need for clarification of legal uncertainties. The in-depth analysis of network elements (quality, persistence etc.) caused by the lack of funding has been neglected. There is a lack of research that would be more oriented to ecological networks and some specific problems connected with the network. The same case occurs with the lack of inter-sectoral cooperation to solve the management problems.

In **Slovakia**, the main critical points relate to the implementation reality. The broad available knowledge is only put in practice with difficulty, due the lack of financial instruments. Data accessibility – data are collected and are not accessible for the decision making processes. Even if the data sets are collected, they are not territorially related. There is a gap in the knowledge regarding the effects of particular interventions/measures. This causes replication of mediocre and inefficient measures. There is a need to build an integrated database that should be made available and accessible. The database architecture and its interfaces should allow for comprising the appropriate structure in appropriate form, especially regarding a specific group of stakeholders. The data should be standardized and internationally compatible and comparable. The key to increasing the effectiveness of planning performance is the improvement in the consequent implementation of the principles of legal state; in many cases the comprehensive planning is separate from implementation tools, including financial instruments and absenting mechanism of balancing beneficiaries and losers, including internalization of externalities. Proper balance is missing between time and capacity for bureaucratic processes and time and capacity for objective assessment. Improperly designed processes of public participation as part of SEA are threatening the optimization of the final decisions. A low level of process harmonization – sectoral coordination plans at the national level – not in the form of allocation plans, but in the form of setting the frameworks for planning.

In **Romania**, specialists reckon that main critics concern the occurrence of land use restrictions in Natura 2000 protected areas. Thus, before declaring the Natura 2000 network, the land owners from these sites were ensured that the inclusion into the Natura 2000 network will not affect their property rights or their administration, and their daily activities

will not require environmental impact assessments. However, the new management plans came with many restrictions, which often did not consider the needs of local communities, only focusing on how to preserve species and habitats of community interest, thus blocking economic development. Another problem also arises in built-up areas from protected areas, where environmental impact assessment studies are required for virtually any activity, which means more money spent by owners and more bureaucracy. Also, the Ministry of Agriculture offers some subsidies on voluntary agro-environment measures, which, as they argue, cannot be granted when measures become mandatory through management plans, creating an institutional blockage, to the detriment of local communities. After the designation of Natura 2000 sites, some issues related to the planned activities to be carried out have arisen. A low involvement of the co-interested groups, a lack of cooperation between stakeholders from different sectors, legislative loopholes regarding the ecological corridors and their role as well as the absence of a clear methodology for their identification, mapping and management – were also criticized.

## 2.4. What are the main conflicts between conservationists and other stakeholders (e.g. foresters, hunters, farmers, developers, and spatial planners)?

**Conflicts exist in all of the analysed countries**, and the answers mainly blame the **lack of proper communication or miscommunication as the main reason of the conflicts** (e.g. in Hungary and Serbia). Problems can occur because of **the lacking efficient system of compensation** for limitations of land use (e.g. in Slovakia). It is also a problem that **nature conservation was not recognised as a sector** protecting the natural resources (e.g. in Serbia).

In **the Czech Republic**, the main conflict is between conservationists and landowners. In some cases, the development of the TSES requires changes in the

use of land; however, a landowner may not agree with these. In **Hungary**, the basic problem is the conflicting interest due to miscommunication (the stakeholders are not aware of the common interest and benefits). In **Serbia**, as a result of the nature conservation not recognised as a sector protecting the natural resources, the users of these resources regard the restrictions as irrelevant. The common interests revealed over the last decade are not popularised. There are ongoing conflicts in respect with particular interests, as well as a lack of communication between stakeholders and conservationists. In **Slovakia**, the main conflicts concern the incorrect division between subjects who benefit and lose due the deficient system of compensations for limitations of the land use. In **Romania**, in areas with Natura 2000 sites, certain activities can be performed with conditions. Conflicts between conservationists and developers can be mentioned in Roşia Montană (Alba county) on the subject of a mine site construction. Several discussions were also made when developing wind parks on the territory of Constanta and Tulcea counties. Buildings raised without authorization on the territory of environmentally protected areas should be demolished, on the grounds of being illegal constructions raised without the environment approval.

## 2.5. Are the stakeholders and locals aware of the importance of the ecological networks? Is there any program for the promotion or information?

In all of the analysed countries (with an exception of Romania) **most of the locals and stakeholders are unaware of the importance of ecological networks**. It is considered as a **major shortcoming** in the majority of the involved countries (participants of the questionnaire). **There is no information campaign running in any of the countries**. Only some occasional, local initiatives can be listed as communication tools of the importance of ecological networks for the broader public (e.g. in Serbia).

In **the Czech Republic**, public and even stakeholders' knowledge of TSES issues is insignificant and integrated information campaigns do not exist. International seminars and TSES have been focused on current issues regarding TSES and have consisted of expert discussions, shared knowledge and experience, and meetings of academics and practitioners. Excursions to places with a good practice of biocentre and biocorridors realization have been part of seminars.

In **Hungary**, the majority of locals and stakeholders are unaware of the importance of ecological networks. There is no nation-wide communication plan related to this issue. However, some promotion campaigns exist, but these are usually separated actions related to certain projects at local or micro-regional levels.

In **Serbia**, most of the stakeholders are unaware of the importance of ecological networks. Some actions have been undertaken during the process of valuation and establishment of various protected areas and/or habitats which could potentially be parts of the ecological network. Within these processes, some stakeholders were involved in some stages, but generally, there are no specific discussions, programs or/and promotions on the importance of ecological networks. Over the period 2009-2012, while the ecological network of Vojvodina was being established, leaflets aimed at forestry, water management, agriculture and infrastructure planning were prepared ([www.pzzp.rs](http://www.pzzp.rs)) and several conference papers were published. Besides the basic information on the site of the Institute of Nature Conservation of Vojvodina Province ([www.pzzp.rs](http://www.pzzp.rs)) there are no ongoing activities of popularisation.

In **Slovakia**, the raising awareness is important and it requires time investment, but it is currently not crucial at the local level.

In **Romania**, stakeholders and locals are usually informed and consulted in the decisional process related to natural protected areas. When receiving the necessary documentation for establishing the protected natural habitat regime, competent environmental authorities must advise landowners and land managers and consult with all stakeholders. In order to consider all the field aspects, the National Agency for Protected Natural Areas/Administrators of the protected areas of national and/or community interest will be consulted by the environmental authorities responsible for the environmental project or for activities that can significantly affect protected natural areas.

### 3. INTEGRATING SPATIAL PLANNING AND ECOLOGICAL NETWORKS

Within this sub-topic, the way and depths of ecological networks into spatial planning, the limitations related to ecological networks in spatial plans, the gaps in the integration of the ecological networks in other policy sectors, and the integration of ecological network-related issues in the SIA were analysed.

#### 3.1. How is the ecological network integrated into the spatial planning in your country? What kind of ecological network elements and in what scales appear in the spatial plans at different territorial levels (please, indicate the territorial and local level as well)?

As Table 5 shows, ecological networks in **all of the analysed countries were integrated** into the spatial planning system, but **in different ways or levels**. At territorial levels there are **special maps/GIS layers** about the ecological networks **in the spatial plans** of all of the countries, **except Serbia**. In Serbia, ecological networks have formally been stated in spatial plans; however, they are most often mentioned in generalized formulations about the need of their identification, valorisation and protection, without any clear spatial delimitation on maps. Nevertheless, good examples can also be found in Serbia (e.g. AP Vojvodina), where spatial delimitation and protection measures are defined in the Regional Spatial Plan for Vojvodina Province.

At **local levels gaps were identified in more countries**. In **Serbia**, the problem is the same as the one at the territorial level (ecological networks are formally treated, but they are mentioned in generalized formulations). In **the Czech Republic**, the information on the area, lengths and coverage is only available on part of the Czech territory and rarely in a digital format. In **Hungary**, the most important problem is the inconsistency of spatial plans at different levels from the ecological networks perspective. At the local level it means that the designation of ecological network is based on estate records, and it is hardly comparable with the national ecological network.

In all countries, **internationally and nationally significant conservation areas are cared** for at all spatial levels; however, the above presented problems appear in all types of conservation areas.

In **the Czech Republic**, establishing and managing ecological networks at various spatial scales has been included in the nature conservation and landscape management legislation. In addition, the

	Integrated into spatial planning at territorial level	Integrated into spatial planning on maps/GIS layers	Integrated into spatial planning at local level
<b>The Czech Republic</b>	X	X	X
<b>Hungary</b>	X	X	X
<b>Serbia</b>	X		X
<b>Slovakia</b>	X	X	X
<b>Romania</b>	X	X	X

Table 5. Types of integration of ecological networks into spatial planning

issue has also been included in the country's spatial planning legislation. From the viewpoint of spatial planning, the TSES is one of the natural limits of land use within the particular territory, which has to be identified and considered during the spatial planning procedure. Therefore, the TSES acquires a general obligatory character within the process of approving the land-planning documentation. In practice, the ecological network should also be considered when elaborating proposals for comprehensive land consolidation/re-plotting and the Forest Management Plan. The Supra-regional TSES includes most of the internationally significant conservation areas in the Czech Republic. The SR-TSES GIS layers include both supra-regional biocenters and supra-regional biocorridors and their buffer zones. The Regional TSES GIS layers include both regional biocenters and regional biocorridors and their buffer zones. At local level, the information on area, lengths and coverage is only available on part of the Czech territory and rarely in a digital format. Only some L-TSES designs have been digitized. From a legal viewpoint, the TSES concept is not only an issue of the State Nature Conservancy, but at same time, it creates the obligatory background for decisions on land-use within the particular territory. Nevertheless, there are still barriers to spatial planning and TSES integration. Components of TSES: biocenters (core areas), biocorridors, buffer zones, and interactive elements.

In **Hungary**, the ecological network is integrated into the spatial plans. The National Land Use Plan, the County Land Use Framework Plans, and Land Use Plans for so called priority regions (e.g. the Lake Balaton Recreational Area and the Budapest Metropolitan Region) contain regional tasks to protect the environment, landscape and nature, and the Regulation Plans (zoning of regulation packages on a map) of the Spatial Plans contain the exact zone of National ecological network. A specific package of regulations and restrictions is proposed for each zone. The national ecological network zone includes core areas, buffer zones and ecological corridors as well. The spatial plans are arranged in a hierarchical structure; each plan must be in concordance with the plan at the higher level. In the frames of development plans, guidelines for special landscape types can also be found. The National Development Concept of 2011 formulates guidelines for development and protection of landscape areas of national importance such as Lake Balaton, Danube region, or Lake Tisza. The land use plans (master plans) of the settlements follow the structure

of the higher (spatial) level land use plans. The picture shows the environmental and land-scape design plan of a small settlement as part of the master plan. However, in the case of ecological networks, the most important problem is the inconsistency of the spatial plans at different levels from the ecological networks perspective. At the local level it means that the designation of ecological network is based on estate records, and it is hardly comparable with the national ecological network.

In **Serbia**, legislation for the spatial planning and construction sector does not provide provisions relating to ecological corridors. Ecological corridors are indirectly covered by the provisions associated with the protection of nature and landscape. Within spatial planning, practice ecological corridors have been formally stated in spatial plans at different levels of planning. They are most often mentioned in generalized formulations about the necessity of their identification, valorization and protection, without any clear spatial delimitation on maps of the spatial plans. The exceptions are spatial plans in the territory of AP Vojvodina: Spatial delimitation and protection measures are defined in the Regional Spatial Plan for Vojvodina Province and the Spatial Plans for the Special Purpose Areas. In the Municipality Spatial Plans, all levels of ecological corridors are mapped, with defined but not implemented adequate measures for their protection. In urban plans ecological corridors are also treated.

In the Slovak landscape, there exists an ecologic plan at the regional and municipal level. Landscape ecologic plan is the document elaborated as part of the procurement of land-use plans at regional and municipal level with the focus on landscape ecological analyses, assessment and optimisation of functional use in the harmony with landscape ecologic potentials and development limitations. The plans of the Territorial Systems of Ecological Stability are in accordance with the Law on land-use planning supportive documents. They are based on indicated eco-corridors in the open as well as build-up landscape. The plans for territorial systems of ecological stability used to be partially reflected in the land-consolidation projects, but they are not compulsory documents as the land consolidation is the request oriented process.

In **Romania**, Law 350/2001 on Spatial and Urban Planning specifies that territorial management aims, among others, to ensure the protection of natural and built landscapes, biodiversity conservation and the creation of ecological continuity. The basic

purpose of spatial planning is to harmonize the economic, social, ecological and cultural policies at national and local level and among its objectives is that of a sustainable management of the landscape, which is a basic component of natural and cultural heritage and natural resources. As for urban planning, one of its main objectives includes the protection and enhancement of natural heritage. Emergency Ordinance no. 57/2007 on the regime of natural protected areas, conservation of natural habitats, wild flora and fauna with subsequent modifications and completions provides that protected natural areas and ecological corridors are mandatory to be highlighted by the National Agency for Cadastre and Real Estate Advertising in national, zonal and local urban and spatial plans, in cadastral plans and land books, as well as by the central public authority for agriculture. The constitution of the protected natural areas has also taken into account the provisions of the general urban plans, which cannot be modified before the upgrading period stipulated by the existing legislation on spatial and urban planning. The approved legal urban plans establish the types of activities that can be carried out in the areas of sustainable development (areas where investment/development activities are allowed, with a priority being given to tourism, but respecting the principle of sustainable use of natural resources), which are provided in the management plans of the protected areas. Order no. 1964/2007 on the establishment of the regime of natural protected areas for the sites of Community importance, as an integral part of the European Ecological Network Natura 2000 in Romania also reflects the link between these protected areas and the territorial planning. National, zonal and local urban and spatial plans must necessarily highlight natural reserves and protection areas. Also, when issuing the building permit by the competent public authority, the provisions of the urban planning documents and of the local urbanization regulations related to them will be considered, as well as aspects linked to the risk of negatively affecting the natural heritage or valuable landscapes. The Urban Planning Regulations must contain rules on preserving the integrity of the environment and protecting the natural heritage (Decree No. 525/1996 for the approval of the General Regulation of urban planning). Regarding the protected natural areas, the County Councils will identify and delimitate. According to the Methodology for the elaboration of General Urban Plans, inserting the elements of ecological networks is mandatory in all the chapters

(the Content Framework, the General Memo and the Urbanistic Regulations of each locality). In Zonal Urban Plans, which also provide specific regulations for a particular area in a location, natural heritage values that require protection are highlighted, and their Local Urban Regulations establish basic rules for preserving environmental integrity and protecting natural heritage. The methodologies for the elaboration of Urban Plans of various types (General, Zonal, Detailed) stipulate that they must also include the Natural Protected Areas at different territorial scales, mentioned in both the written and graphic parts. These protected natural areas are represented in urban plans at specific scales (the topographic support of the locality is provided by the cadastre and real estate publicity offices). Areas of natural heritage value/with protected areas are highlighted in maps at different scales.

### 3.2. What kind of limitations or rules apply to land use and development possibilities according to the ecologic network in spatial plans?

**In all of the countries there exists some degree of limitation** to land use and development possibilities according to the ecologic network in spatial plans. **The only exception is Serbia**, where in the spatial plans and other planning documents ecological networks have just a formal mention. The **limitation is mainly related to the maintenance** of the zones and areas in order to preserve the existing conditions of them. **The types of limitations or rules are very similar** in all of the countries: **disturbing activities and activities that reduce ecological stability are forbidden** (e.g. certain types of transport, certain forestry, hunting or fishing activities, some sort of grassland management or tourism activities). It usually means that **they can limit but not prescribe the changes**.

In **the Czech Republic**, the general principles of TSES regulations/land use limits are defined by the Methodology of incorporating the TSES into

the spatial plan of municipalities. Regulations/land use limitations of particular land in the territory of the TSES elements are contained within the individual spatial plans. The regulations for the areas covered by the TSES have to ensure the conditions for permanent functionality of the existing TSES elements, and ensure territorial protection of areas to supplement for the missing TSES elements (to be established).

In **Hungary**, a specific package of regulations and restrictions is proposed for the zones of the National Ecological Network. The zone of the national ecological network includes natural and semi-natural habitats of national importance and a unified and composite system of ecological corridors, which provide links between them. In the zone of core areas and ecological corridors, the rules restrict the designation of areas for development, the placement of transport infrastructure and new surface mines.

In **Serbia**, in the existing spatial plans and other planning documents, ecological networks have just a formal mention. The recommendations for spatial plans in respect to ecological corridors can be prepared as part of this project.

In **Slovakia**, the definition of a bio-corridor into the land-use documentation, unless it is a nature protected area, is the only way to protect the function of a bio-corridor. The limitations can apply to changes related to the functional use of the area and physical structures. They can limit but not prescribe the changes, it means they do not allow other changes than the changes in accordance with the limitation, but they can't pressure the owners and users to make changes.

In **Romania**, the national, zonal and local urban and spatial plans must necessarily highlight the protected natural areas and ecological corridors and local public authorities have the responsibility to highlight the protected areas' limits in urban plans of the locality. The activities that can take place in the territory of protected areas as well as the necessary conservation actions are described in their (approved) Management Plans. They take account of the current status as well as the development trends of the territories containing protected areas, the interest for the land and their natural resources, while showing the evolution of possible threats. In the Management Strategy of an area within a protected area, the conditions for human activities are imposed; therefore, maps of special areas and their management measures are presented in the spatial development plans of

the area. Spatial development plans will take into account the regulations of protected areas and the regulation of activities in special protection areas. For example, certain types of transport, certain forestry, hunting or fishing, activities, some sort of grassland management and exploitation or tourism activities are forbidden. In regards to the construction in the territory of protected areas, permanent constructions, construction of new roads or bridges, modernization of existing roads in such areas – all is done only with the approval of the Environmental Protection Agency.

### 3.3. What are the main gaps in integrating ecological networks into other policy sectors?

In this topic, the evaluated 5 countries have different **shortcomings** and problems. However, the **majority of the gaps** are related to the **lack of communication between the sectors, the barriers within the spatial planning and regional development sectors** (e.g. Hungary, the Czech Republic, Romania), **barriers within the public administrations** (e.g. Slovakia, the Czech Republic, Hungary). In Serbia, the biggest problem is that the rules and **recommendations related to ecological networks are not adapted** in other development strategies or planning documents. Both in Slovakia and Serbia, the **lack of appropriate and exact measures** for identification, evaluation, and protection also causes problems. As a good example, **in Romania, the Landscape Plan** (at territorial and local levels) will operate **as an integrating tool** of cultural and natural heritage protection policies.

In **the Czech Republic**, barriers to spatial planning and ecological networks integration include (Plesník, 2008): Barriers within the State Nature Conservancy and more generally, environment protection sector; Barriers within the spatial planning and regional development sectors; Barriers within the communication between both sectors; Barriers within the public administration; and Other barriers. From a scientific point of view, due to some controversies, particularly with respect to efficiency of ecological corridors for supporting

or improving the landscape connectivity, some scientists have expressed their serious doubts as for the real importance of ecological networks for maintaining both biological diversity and life-supporting processes in ecosystems. Some other experts argue that the variability of conditions in the current landscape including those caused by human interventions does not allow to apply the single, although sophisticated methodology for establishing the TSES. Therefore, the ecological network itself is very often considered as only paper- or computer work.

In **Hungary**, similarly to the Czech Republic, insufficient communication between the spatial planning and regional development sectors causes problems. Gaps can arise thanks to the public administration system and structure (lack of human and financial support; complicated and contentiously changing structures).

Although **Serbia** has adopted several laws and rulebooks unified with the Carpathian Convention, almost none of the strategies have adopted its rules and recommendations. The main gap is that the ecological network has to be identified and evaluated and protection measures proposed at the national level – namely in the national policy/strategy for nature protection and/or biodiversity protection. Only two national strategies actually mention ecological networks in Serbia: the Strategy on Biodiversity and the Strategy on Sustainable Use of Natural Resources. However, neither of them really proposes a recommendation to integrate ecological networks into other sectors, except nature protection.

In **Slovakia**, the main gap is the authority of the ecological network documents and a lack of instruments to implement proper measures to restore them.

In **Romania**, the correlation between spatial and urban planning with environmental planning is provided by Law. Urban and spatial planning plans are subject to the environmental assessment procedure in order to obtain environmental permits for plans and programs. Urban and spatial plans are required to include measures to maintain and improve the natural and anthropic landscapes of each area and location. The obligation to verify the correlation of environmental planning with the provisions of the urban and spatial planning plans rests with the local public administration authorities, who have the obligation to supervise the compliance with higher level regulations. The development of

ecological infrastructures, ensuring the diversity and interconnectivity of natural areas and the identification of specific measures for the protection of natural habitats are foreseen in the Territorial Development Strategy of Romania until 2035. Also, in the field of transport, The Romanian General Transport Plan up to 2030 requires compliance with the conservation measures of the future transport projects as well as the integration of ecological infrastructures, so as to avoid the negative impact on the protected and unprotected areas where there are species of community interest. Law 451/2002 on the ratification of the European Landscape Convention, adopted in Florence on October 20, 2000, provides landscape integration into all kinds of planning activities. From a legislative viewpoint, regulations on spatial planning and those on natural heritage protection have not been unified with those on the regime of protected areas. However, in recent years, there have been several attempts to unify environmental issues with other sectoral policies. From the spatial planning standpoint, it has been observed that it is necessary to introduce some provisions regarding the landscape into the legislation in force. It is also necessary to update the Annex III of the Law no. 5/2000 regarding the spatial planning, including the setting of sanctions. It is necessary to ensure the coherence between spatial and urban planning policies and biodiversity conservation plans. It is also crucial to integrate the studies identifying and evaluating the species and habitats in the urban environment into the General Urban Plans. Therefore, recently (2018), the Decision for the Approval of the Preliminary Theses of the Draft of the Territorial Planning, Urbanism and Construction Code was launched into public debate, in order to approve the Preliminary Theses of the Draft Planning and Urban Territorial Planning Code. As far as landscape is concerned, it is necessary to develop a Guide for its identification and evaluation, as well as inventory and evaluation of the cultural, natural and mixed landscapes in Romania. It is necessary to regulate the management of these landscapes, as well as the development of local policies on landscape and their integration into other local sectoral policies. Action plans for the reconstruction and/or restoration of degraded and/or destroyed landscapes should be carried out as well as a procedure for assessing the impact that the Structural and Cohesion Fund projects have on the natural landscape and only accepting the funding of projects that do not affect this landscape. Also, recently, Decision no. 905/2016 to approve the

Preliminary Theses of the Cultural Heritage Code project shows that the integrating tool of cultural and natural heritage protection policies is the landscape. Regarding the natural heritage, specific tools for landscape protection are going to be integral parts of the spatial planning process. Landscape plans as specific tools will be adopted: the Territorial Landscape Plan and the Local Landscape Plan. They are integrated spatial planning tools that coordinate, unify and express environmental development policies at the level of territorial interventions. Landscape plans identify, evaluate and delimit the different types of landscapes, for each of them implementing specific management plans and intervention regulations that ensure balanced development with respect to natural and cultural values. Their measures will form an integral part of the spatial and urban planning plans as specific spatial planning tools, ensuring an integrated cross-sectoral vision. Landscape plans will be described by precise and specific topographical boundaries.

### 3.4. How deep is the integration of the ecological network-related issues in the strategic impact assessment?

**In all of the analysed countries, the ecological network-related issues are integrated in the strategic impact assessment. The only expectation is Serbia**, where ecological network issues are not even mentioned in the existing legislative framework. However, **the new draft on the Law of SEA has proposed an obligation for SEA for plans and programmes for which it is determined, according to a special regulation in the area of nature protection, that they can have a significant negative impact on the ecological network.**

In **the Czech Republic**, within the Environmental Impact Assessment, the impact of buildings on the TSES is discussed. According to Act No. 100/2001 Gazette, Annex No 2, the parameters of the territory likely to be affected by the planned project must be considered, with particular regard to the absorption

capacity of the natural environment, with particular attention to territorial system of ecological stability of the landscape, specially protected areas, Sites of European importance and bird areas, areas of natural parks, significant landscape components, etc.

In **Hungary**, the Government decree 132/2010 (IV.21.) on the announcement of the protocol adopted on May 21, 2003 in Kiev on strategic environmental assessment related to the Convention on Environmental Impact Assessment in a transboundary context done at Espoo (Finland), on February 26, 1991 (hereinafter Government Decree 132/2010 (IV.21) deals with the ecological network-related issues (e.g. Natura 2000 areas, protected areas, and territorial system of ecological stability of the landscape).

In **Serbia**, the new draft law proposes that Decision on SEA mandatory needs to contain results of the Preliminary assessments of the acceptability of the plan or program for the ecological network in accordance with the regulation governing the nature protection. Also, draft law proposes that when an appropriate act of a body responsible for nature protection considers that a plan or programme may have significant negative effects on the objectives of conservation and integrity of the ecological network area, the content of the strategic assessment report shall include the chapters defining the effects of the plan or program on the ecological network, in accordance with special regulations governing nature protection. There is also an obligation to evaluate the planning solutions in protected areas and ecological network. These new amendments within the new Law on SEA could possibly emphasize the existing problem of perceiving the importance of ecological networks for the environmental protection and possible impacts that some of the planning solutions might have on the ecological network.

In **Slovakia**, the ecological network-related issues are included as an important part of SEA.

In **Romania**, Order 1798/2007 for the approval of the issuing procedure for the issuance of the environmental permit shows that Environmental Protection Agencies issue environmental permits. They are positively advised only when the activities/plans/programs/plans submitted for approval are considered not to have a significant negative impact on the integrity of the habitat or the conservation status of the habitats. The legal provisions in force concerning the procedure for carrying out the environmental assessment for plans and programs

and concerning the framework procedure for the evaluation of the environmental impact are applied for all plans, programs and projects to be carried out in the sites of community importance and in their vicinity. The environmental report, i.e. the environmental impact assessment report, should highlight all the species and/or types of habitats of community interest for which conservation has been designated and should propose measures to reduce their impact, conservation measures and/or compensatory measures, as appropriate. Order no. 1964/2007 on the establishment of the protected natural habitat regime of sites of importance for sites of community importance, as an integral part

of the European ecological network Natura 2000 in Romania specifies that for all plans, programs and projects to be carried out in sites of community importance and in their vicinity, the legal provisions in force concerning the procedure for carrying out the environmental assessment for plans and programs and the framework procedure for environmental impact assessment are applied. Plans and programs, as well as any work or activity likely to generate an impact on the environment and on the species and habitats of the reserves and their vicinity shall be subject to regulation by environmental protection authorities, in accordance with applicable law, with the consent of the custodian.

## 4. COUNTRY ANSWERS

### 4.1. Relevant policy frameworks and legislation for ecological networks

#### Where are the main gaps in the ecological network-related policy framework?

##### The Czech Republic

Methodology for incorporating the TSES into spatial plans (Lepeška et al., 1998) is based on the Building Act issued in 1976. In 2006, the new Building Act was issued and the methodology became out-dated, although its general principles still apply. Until now, a new methodology based on the current laws hasn't been created.

New methodology for designing the territorial system of ecological stability created in 2017 (Bínová et al., 2017) has only copied the old one and does not contain desirable changes and improvements.

##### Hungary

The biggest problems related to the realization of the plans, which are mainly due to financial issues. Another serious problem is the strong lobby power of some stakeholders groups (developers etc.), which in many cases cause weak efficiency of the ecological network-related policies.

##### Serbia

The Emerald and Natura 2000, representing the most important networks in Europe, are functioning as patchworks without a defined corridor network. The lack of mandatory obligation to define and protect ecological corridors leads to further deterioration of still existing parts of natural corridors, increasing the costs of their reconstruction in the future, leading to irreversible landscape changes and making the corridor restoration impossible for the next generations.

The lack of legal obligations on corridor issues in international conventions increases the difficulties of network creation at national level. In many cases, the network establishment is foreseen by the legislation on nature protection but is hampered by other relevant sectors (forestry, agriculture and water management). As these sectors responsible for the changes in landscape structure are obliged to unify the sectoral legislations with the international conventions (e.g. Bern convention, Habitat directive), the level of intersectoral cooperation is defined by the conventions. In Serbia, the establishment of an ecological network is based on the Bylaw on Ecological Network. It has enabled the definition of network elements in Vojvodina and the integration of networks into spatial plans, both at regional and local levels. However, the regulation of network management as an intersectoral issue is not regulated.

The lack of general social agreement on the significance of ecological networks, and consequently, the existence of different interest groups with conflicting interests about the ecological network's existence and function causes a problem.

##### Slovakia

The legal framework for the ecological networks definition is limited, even though the tradition of the respective documents dealing with ecological networks is old. The Territorial Systems of Ecological Stability cover the whole territory of Slovakia, but they are only background, not binding documents. They have to be introduced into the land-use planning documentation and reflected in the regulations. The elaboration of the land-use planning documentation means integrating a number of interests on land-use and needs to have a much more solid base for introducing the landscape ecological requirement. The position of landscape ecological plan elaborated as part of surveys is not proper as in this phase, the requirements on land-use e.g. on construction of transport infrastructure are unclear. The system of spatial planning should include a real third pillar of comprehensive environmental/landscape planning. There is the need for the regulatory instruments to include other instruments supportive for the implementation of ecological network plans as many of the down corridors are not functioning but need to be established. In the open landscape, the land-consolidation projects include the need to protect or establish ecological networks, but they are request-oriented, not obligatory documents, not covering the whole territory of the state and not addressing other than agriculturally used land.

##### Romania

The typology of ecological corridors as well as the content of documentation necessary for their designation are established by order of the head of the central public authority for environmental protection. In order to maintain the functions of ecological corridors, they are subject to management measures established by law.

The categories of protected natural areas may be amended and completed by Government decision, at the proposal of the central public authority for environmental protection, with the approval of the Romanian Academy, taking into account the recommendations of authorized international organizations.

The National Strategy identifies some legislative and administrative gaps and deficiencies in the ecological network-related policy framework, such as:

- » Lack of consideration of the natural and/or cultural landscape in the development and evaluation of projects in the fields of spatial planning and infrastructure (transport, energy, production), in accordance with the provisions of the European Convention on Landscape (ratified in Romania by Law 451/2002);
- » Irregularities, inconsistencies and legislative derogations, insufficient regulations and sanctions for offenses related to spatial/urban planning and the protection of natural and cultural heritage;
- » Deficient institutional framework, with conflicts of competence between several authorities leading to diminished responsibilities and poor implementation of legal provisions;
- » Serious imbalance in urban ecosystems caused by not taking into account the local biodiversity and the excessive pollution.

Thus, according to this Decision, in order to ensure integrated territorial management, several operational objectives have been imposed:

1. To develop and implement land-use policies to support biodiversity conservation. Particular attention should be paid to ecological corridors and to areas outside protected natural areas but with increased biodiversity - such as mountain and coastal areas or wetlands;
2. Inclusion of landscape conservation as one of the main conditions in the development projects funded by the Structural and Cohesion Funds.

## What indicators are used to identify ecological networks?

### The Czech Republic

In order to identify the elements of the TSES, data have been used on hydrology and climate, species composition, species diversity and edge composition. To confirm the consistency of the landscape structure and plan the TSES components, historical documents (historical maps, aerial photos, cadastre data etc.) have been used. Data on actual vegetation have been compared with natural vegetation composition.

The TSES has been developed by landscape synthesis:

1. Landscape screening;
2. Establishing an inventory of primary (natural) landscape structures and locating secondary (existing) landscape structure;
3. Identification of the eco-stabilizing function of both natural and secondary landscape structures;
4. Their integration into the existing landscape elements from the viewpoint of ecological stability → identification of the ecological stability framework.

Components of TSES are designed on the basis of potential ecosystems in interaction with abiotic conditions and the current state of landscape in the TSES plan details. The TSES works like a basement for a territorial plan design. They are one of the land use limitations and they have to be respected during the territorial plan implementation. After the TSES approval within the land use planning documentation, other tools mainly to support the TSES realization within the landscape are used (subsidy, education e.g.). Applicability of the TSES is determined by the background where the ecological network is formed and where it could thrive (see the principles in the next paragraphs) (Birklen, Kúsová, 2012).

The main indicator for the identification of TSES is the level of ecological stability (or the level of human impact). Based on the level of ecological stability of ecosystems, landscape structures are categorized into 6 classes (natural to denaturalized areas). Landscape structures within classes with a relatively high level of ecological stability are established as the set of ecologically important landscape segments (the ecological stability framework).

The TSES is based on the following seven principles (Bínová et al., 2017; Plesník, 2008):

1. Principle of representativeness: TSES must embrace all typical types of natural communities in each region. Therefore, they should involve a complete mosaic of natural vegetation communities in a particular biogeographical unit. Each biogeographical unit should be represented by at least one biocentre within the biogeographical unit that is one hierarchic level higher. This principle is adhered to on each of the three hierarchical levels.
2. Principle of limiting parameters: The principle determines the admissible size of a biocentres and biocorridors depending on the type of vegetation community. The biocentres are defined by the minimum area, while the biocorridors by the minimum width and maximum length. The limiting values vary according to biogeographical characteristics and hierarchical levels.
3. Principles of connectivity: Biocentres must be connected by biocorridors. The biocorridors must not be interrupted by ecological barriers.
4. Principle of the current state of the landscape: The TSES concept prefers landscape elements of higher ecological value. In other words, the principle places habitats into TSES with respect to the current ecological values of its communities.
5. Principle of social limits and objectives: The implementation of TSES should not be in conflict with other social objectives (e.g. water and wind erosion control, hydrological measures, etc.). The principle assesses the possibilities of TSES design with respect to social limits and intentions.
6. Principle of succession and interdependence of hierarchical levels of the TSES: Application of this principle works to preserve the spatial continuity of the TSES. The principle ensures that the definition of TSES elements on a lower hierarchical level are connected to the TSES elements on a higher hierarchical level in a spatial and functional viewpoint. Based on this principle, a united and interconnected functional system is designed.

Principle of adequate conservatism: Application of this principle works primarily to minimize the interventions, both to the existing conceptual solution and to the defined elements of the TSES.

### Hungary

The designation of the Hungarian National Ecological Network was carried out in two steps: In the phase 1. General planning (1998–1999), the plan (with a scale 1: 500,000) was prepared on schedule. The aim was not to create a map with absolute precision, but to include the ecological network into the administrative planning system from the onset of the planning process. In addition, it was repeated several times since depicting an ecological network on map entails a flexible system depending on the results of the baseline assessment and the evaluation of near-natural areas. In phase 2., planning according to the categories of the Pan-European level (1999–2001) was prepared. The components of PEEN and also the criteria for their identification were determined (the well-known core areas, ecological corridors, buffer zones, and restoration areas). Links between core areas are the ecological corridors that are strip like, continuous habitats or a chain or mosaic of smaller or larger habitat patches. Ecological corridors and buffer zones should be designated around core areas, where the ratio of natural areas is relatively high and the land-use or the landscape utilisation does not pose a threat to the core areas. Rehabilitation sites can be situated in core areas, ecological corridors, or buffer zones and primarily characterise those areas that include all three elements, or are ecologically damaged and their rehabilitation concerning their size is feasible.

During the analysis, various data sources were used, including e.g. protected areas, records of floodplains, forestry schedules, important bird areas, existing and planned NATURA 2000 sites, sensitive areas, and results from field research. The digital database is available in 1:50000 scale.

## Serbia

The identification of ecological networks in the cultural landscapes is based on the fine scale recognition of still existing habitat patches and on the recognition of anthropogenic landscape elements (shelterbelts, canals, levees etc.) functioning as habitats or ecological corridors. The most important indicators of quality are the species and/or structural diversity of the habitat or corridor, the presence of protected species and the assessed persistence of the network element within the landscape.

Specific indicators are:

- » Habitat Types - Vulnerable, Endangered, Rare, and Habitat Types of Priority for Protection and Safety Measures or their Conservation (Habitats Directive)
- » Presence of Strictly Protected and Protected Wild Species of Plants, Animals and Fungi (National Rulebook)
- » Presence of bird species designated under the Directive on the Conservation of Wild Birds (Birds Directive)
- » Protection zones as areas outside the boundaries of the protected areas, which are ecologically important areas and ecological corridors for the purpose of mitigating external impacts (pressures)

## Slovakia

The main indicators for bio-corridors as parts of the territorial system of ecological stability are linked to the features of land-cover and value of the territory. There are hydric and terrestrial bio-corridors connecting the bio-centres and their buffering zones. In many cases, the bio-corridors are defined as a wish or need, rather than real functioning migration lines. There exists no binding norm for their definition.

## Romania

If ecological networks in Romanian laws mean the national network of protected areas, including the Natura 2000 ecological network, the declaration of the natural areas and the establishment of the protected natural habitat regime is made:

- » By law, for the natural sites of the universal natural heritage;
- » By government decision, for scientific reservations, national parks, nature monuments, nature reserves, natural parks, wetlands of international importance, biosphere reserves, geoparks, special areas of conservation, and avifauna special protection areas;
- » By order of the head of the central public authority for environmental protection, for sites of community importance, with the approval of the Romanian Academy;
- » By decisions of the county or local councils, for protected natural areas of county or local interest.

The model for setting up protected natural areas takes into account the interests of the local community, encouraging the maintenance of local traditional practices and knowledge in capitalizing these resources for the benefit of the local community, as well as the provisions of general urban plans that cannot be modified by the update deadline provided by the existing legislation on spatial and urban planning.

The law specifies the criteria for selecting eligible sites as the sites of community importance and for their designation as special areas of conservation. This is done in 2 steps:

Step 1 - where the relative importance of sites for each natural habitat and for each species (listed in the annexes to the law) is assessed at national level according to specified criteria (representativeness, surface of the covered area, conservation degree, degree of isolation, and site value for conservation of the species concerned). On the basis of these criteria, the proposed sites are classified as eligible sites of community importance for the conservation of each habitat or species. The list will contain sites that have priority natural habitat types and priority species selected on the basis of the criteria.

Step 2 - assessing the community importance of the sites included on these national lists. All sites identified as containing priority natural habitat types and/or species will be considered as sites of community importance. The assessment of community importance for the other sites will consider certain criteria specified in the law, such as the relative value of the site at national level, the geographic location of the site in relation to the migration routes of the species included in the annexes, the total area of the site, the number of natural habitats and the species present on the site, and the overall ecological value of that site for the concerned biogeographical regions.

## What are the main problems and challenges during the implementation?

### Hungary

In Hungary, in several cases, the lack of financial support (or poor support) can be a barrier to the implementation. The difficult accessibility of the existing databases is also a crucial problem. Even if the stakeholders' involvement and the public participation issues are highlighted by several documents and programmes, in practice the communication between the different stakeholders' groups is still inefficient. The conflicting interest appears in the majority of the cases (usually this causes the biggest problem during the implementation).

### Serbia

Lack of data on:

- » Populations (population size, metapopulation structure),
- » Habitat maps containing data both on habitat quality and anthropogenic habitats,
- » Insight into sectoral plans to assess the planned changes in landscape structure.

There is also a lack of

- » Financial resources,
- » Professional staff,
- » Implementation of previously defined measures.

### Slovakia

The main problem is the dominance of regulatory instruments and lack of instruments for the competition of the network. The need to complete the network is not properly taken into account by public investments, practically only via mitigation and compensation measures defined for new constructions within the landscape.

### Romania

The model for setting up protected natural areas considers the interests of the local community, encouraging the maintenance of local tradition practices and knowledge in capitalizing these resources for the benefit of the local community.

The management of protected natural areas is differentiated, depending on the category in which they were assigned. The measures provided in the management plans of the protected natural areas are designed to bear in mind the economic, social and cultural requirements, as well as the regional and local peculiarities of the area, with the priority being placed on the objectives of the natural protected area. The management of biosphere reserves, national parks, natural parks and, where appropriate, geoparks, the sites of community importance, special conservation areas and special protection areas for avifauna is carried out by specially constituted management structures with legal personality.

## Is there any monitoring activity after the development of ecological networks (what indicators are used)?

### The Czech Republic

Assessment of the TSES (Decree 395/1992, Section 3):

On a regular basis, authorities responsible for the conservation of the natural environment conduct assessments of ecological stability systems in terms of their stabilization potential.

The assessments specifically include a detailed delineation of the system boundaries, the level of biological diversity, and assessment of the vegetation makeup in the system and the ability of the ecosystem to resist the effects of pollution, erosion or other physical or chemical environmental stress factors. The outcome of the assessment is to establish whether or not the respective ecological stability system meets the desired criteria – i.e. whether or not it can be precisely defined and able to act as the stabilizer of the natural landscape without any further intervention; or, whether the system lacks the desired criteria – i.e. it requires further delineation or the addition of other biocenters and biocorridors.

### Hungary

Monitoring activities exist for the Natura 2000 areas; however, these are usually optional (there are not enough financial or human resources). Since 1997, the National Biodiversity Monitoring System has developed methods for the monitoring; however, these are not generally widespread.

### Serbia

There is no monitoring established.

Some observations and surveillance methods are practised, rather than monitoring on some species and habitats, but it is not in a specific connection with the ecological network.

Checking the state of the network elements `by sight` during regular fieldwork activities is practised in Vojvodina Province. Cooperation by NGO`s engaged in field activities e.g. birdwatching makes it possible to act in the cases of habitat destruction (ploughing, creating illegal fishponds etc.) by help of regional inspectors preventing further damage.

### Slovakia

The state nature conservancy system provides the monitoring of the networks as its own initiative. Some monitoring activities used to be prescribed as the output form the EIA process, but there exists no well-developed capacity for systematic monitoring of ecological networks.

### Romania

By law, management measures are included in the Management Plans of Protected Areas, also intended to maintain the functions of ecological corridors. In addition to the Management Strategy, a five-year Operational Plan, which sets out the activities, measures and restrictions for the planned management actions and provisions that are also contained within the Regulation, is being developed.

The management of protected natural areas shall be assessed at least once a year on the basis of the monitoring and on-site inspections by the competent environmental authorities.

The competent authority for environmental protection shall establish a system for monitoring the conservation status of natural habitats and species of wild flora and fauna of community interest. Based on the results of the assessments, it may be proposed to amend the national list of Natura 2000 sites.

The control staff are structures belonging to the National Environmental Guard, the National Agency for Protected Natural Areas, the central public authority for environmental protection and its territorial structures with responsibilities in the field of environmental protection and, respectively, forestry, special management structures, hunting fund managers, the National Sanitary Veterinary and Food Safety Authority in respect of activities of trade in wild flora and fauna, the General Customs Directorate of the National Agency for Fiscal Administration for customs operations, the Danube Delta Biosphere Reserve Administration, the Danube Delta Biosphere Reserve and other authorities with responsibilities in the field of environmental protection.

An issue that concerns both the aspect of monitoring and stakeholder involvement in environmental issues is the change of legal provisions on the management of sites of community importance and protected areas of national interest.

Thus, according to Order 338/2013 on the approval of regulations for sites of community interest and/or protected natural areas of national interest, the curators (custodians) of the protected natural area ensure continuous monitoring, establishes special measures for the conservation of biodiversity such as biodiversity monitoring, monitors the tourism to determine its impact on the local flora and fauna and to establish the protective measures required.

However, according to the Emergency Ordinance 75/2018 for the modification and completion of normative acts in the field of environmental protection and of the regime of foreigners, the Government has removed from the environmental law the notion of the curator (custodian) of the protected natural area, which will be managed by the National Agency for Natural Protected Areas. Thus, from the date of establishment of the territorial structures of the National Agency for Natural Protected Areas, the custodian's duties will be taken over by them. The reasoning behind this ordinance was that the management of protected areas in the Natura 2000 network (including SPAs) was non-unitary and dispersed (being carried out at that time by different custodians) and that there was a need for a unitary management of the protected natural areas and also for the implementation of the European-funded infrastructure projects for the 2014-2020 financial framework.

## 4.2. Participatory planning and stakeholders involvement

### What types of stakeholders' involvement is applied during the planning and implementation process?

#### The Czech Republic

The Ministry of Environment of the Czech Republic is the only authority responsible for the supra-regional TSES. The authority charged with keeping the files and documentation of the supra-regional TSES is the Agency for Nature Conservation and Landscape Protection of the Czech Republic. Regional authorities/ Administrations are responsible for designing, developing and assessing the Regional Territorial Systems of Ecological Stability, while municipalities with extended competences (powers) play the same role for the Local Territorial Systems of Ecological Stability.

The specification of a system of ecological stability, ensuring the preservation and reproduction of natural wealth, a favourable effect on the surrounding less stable part of the landscape, and the establishment of a foundation for the multilateral utilisation of the landscape, is determined and assessed by the territorial planning and nature conservation authorities in cooperation with the authorities for water management,

agricultural land resource protection and the state forestry administration. The protection of the ecological stability system is obligatory of every owner or user of land who forms this system; the establishment of such a system is a public interest shared by the land owners, by the community and by the state. The Ministry of Environment of the Czech Republic shall specify the details for defining and assessing an establishment in a generally binding resolution (Act No. 114/1992 Gaz., Section 4).

According to Act No. 114/1992:

- » Municipalities with extended competences define and evaluate the local TSES according to Section 4 (1), except areas of Nature Parks, Protected Landscape Areas and protection zones of Nature Parks.
- » Regional authorities and administrations define and evaluate the regional TSES according to Section 4 (1) except areas of Nature Parks, Protected Landscape Areas and protection zones of Nature Parks.
- » The Ministry of Environment of the Czech Republic defines and evaluates the supra-regional TSES and publishes decrees to determine details of defining and evaluating the TSES as well as details of plans, projects and measures in a creation process according to Section 4 (1).

Regional administrations, Nature Conservation Agency of the Czech Republic and Nature Park managements control whether the plans, projects and measures for a restoration of the TSES are correctly prepared and fulfilled.

## Hungary

Governmental decree 218/2009. (X. 6.) prescribes the process and mechanism of stakeholder involvement. The decree lists all the public bodies required to provide the data, information for the elaboration of the plan.

## Serbia

Consultations mainly exist with public enterprises for forest management (PE „Srbijasume“, PE „Vojvodinasume“), hunting societies, local tourist organizations, NGOs, local government) in the process of planning. In the process of implementation, some of these organizations are established as managers of protected areas (parts of the ecological network).

Also, database exchange and free access databases of forestry (monocultures vs. semi natural stands), water authorities (system of melioration canals), cadastre and spatial plans are used.

## Slovakia

The system of spatial planning including the landscape planning, land-use planning and socio-economic development planning of territorial subjects is a comprehensive strategic planning including a broad range of stakeholders obligatory. The scope of stakeholders has been broadened by the SEA directive mirrored in the act on SEA/EIA. All subjects interested in the planning issue have got formal access to the planning process. The problem is their capacity for efficient participation and de-formalisation of the participative processes, including transparency of the decision making itself. In many cases, the public opinion is the object of conflicts and responsible state bodies do not react to it staying in courts, but they decide after years and demotivate the public engagement.

## Romania

Public participation

Emergency Ordinance no.195/2005 on environmental protection and approved by Law 265/2006, as subsequently amended and supplemented, defines a set of legal regulations on environmental protection and states that the state guarantees the right to be consulted in the decision-making process regarding the development of environmental policy and legislation and issuance of regulatory acts in this field in elaboration of plans and programmes.

When an environmental assessment is carried out, besides drafting the environmental report, consultation of the public and public authorities interested in the effects of the plan and programme implementation is obligatory, as well as considering the results of these consultations in the decision making process and then informing the public on the decision taken.

Informing the public in the regulatory procedures for plans, programmes and activities is carried out in accordance with the specific legislation in force. Consulting the public is mandatory in the case of procedures for the issuance of regulatory acts, according to the legislation in force. The procedure for participation of the public in decision-making is established by specific normative acts.

The central public environmental authority shall consult at least once a year with the representatives of non-governmental organizations and other representatives of civil society as for the establishment of the environmental protection strategy.

Other stakeholders, target groups

NGOs and environmental activists criticize the removal of curators (custodians) through the Government Emergency Ordinance (GEO) no. 75/2018 for the modification and completion of normative acts in the field of environmental protection and of the regime of foreigners without prior consultations and suspected particular interests, since the custodians were the ones who have hindered several controversial projects in protected areas (such as construction of hotels and roads, mining activities, deforestation projects or real estate projects) over time. According to this GEO, protected natural areas were going to be managed by the National Agency for Protected Natural Areas (ANANP).

Through this Government Emergency Ordinance, former administrators of protected areas (NGOs, but also city halls, county councils, universities, and trade companies) have been removed from the discussions. The fact that the National Agency for Natural Protected Areas does not have the capacity to manage all protected natural areas due to a lack of staff has also been subject to criticism. It might have been a better choice for the Romanian state to take over some of the protected areas through the National Agency for Natural Protected Areas that already did not have custodians before the GEO 75/2018 was issued and not to remove a functional structure.

The stakeholders involved in the planning and implementation process (included in the Natural Site Management Plan) are:

- » The Ministry of Environment, responsible for the implementation and monitoring of the unitary and efficient administration of the protected natural areas
- » Local authorities:
  - » County councils, because the implementation of the Territorial Planning Plan, local development plans as well as any other plans for land use and natural resource exploitation within the protected natural area must be accorded with the provisions of the Management Plan
  - » City/Town halls and local councils, as they ensure the development and implementation of local strategies for sustainable development
  - » The Environmental Protection Agency, a regional public authority responsible in the field
  - » The Regional Agency for Environmental Protection, for an appropriate assessment of the impact of plans and projects on conservation objectives in protected natural areas

- » The Environmental Guard – County Commissariat, which controls compliance with the environmental legislation on protected natural areas
- » The County Water Directorate, which participates in the conservation, protection and restoration of aquatic ecosystems and the protection of aquatic fauna and flora
- » The County Forestry Directorate, for more sustainable forest management rules on hunting, fishing and forest exploitation.
- » Academic institutions (conducting research, studies, and training of environmental protection personnel), associations, foundations (on environmental protection), tourism companies, economic agents (for promoting scientific tourism in the area (considering the vicinity of the area with other Natura 2000 sites), land owners (physical/juridical entities owning the land in the area. Owners will not undertake specific activities that affect conservation status in the area).

Target groups are:

- » The local communities (inhabitants of the localities) in order to raise their level of knowledge and awareness and to improve the information of the population on the benefits and opportunities generated by the efficient management of the protected natural area.
- » Local Public Authorities (city/town halls and local councils) in order to inform and aware the Public Authorities and for an active involvement of local government in the process of improving the quality of the environment.
- » Pupils, students, and academics to raise the awareness of biodiversity importance in protected natural areas.

### Is there any compensation for farmers and landowners during the implementation?

#### The Czech Republic

Based on Act No. 114/1992 Section 58, in the Czech Republic, compensation for aggravation of agricultural and forest management has been enacted.

If owners of agricultural land, forestry, a pond with fish or with water poultry or renters who legally use these lands suffer from harm, they are entitled for financial compensation.

The financial compensation shall be provided from the state budget by the competent nature conservation authority on the basis of a written application of the holder's entitlement.

#### Hungary

In Hungary, there is a financial compensation for landowners in order to maintain and preserve their land in current condition. This compensation is regulated by law (e.g. 269/2007. (X. 18.)); however, it focuses on Natura 2000 areas. In other parts of the ecological network (which are not under protection), the compensation is unregulated; there only exist recommendations.

#### Serbia

At the present level, the legal base of compensation (Law on nature protection) needs clarifications and a more clear definition of cases when the state is willing to pay for compensations.

Currently, no specific compensations for the stakeholders during the implementation process are being used.

In most cases, the present land use of network elements has to be preserved; that means no restriction for the users. Conflicts arise in the cases of land use intensification and land use change.

#### Slovakia

There is no special instrument for the compensation for the owners and users of the plots belonging to ecological corridors. The only compensatory instrument is linked to nature protected areas.

#### Romania

According to the Emergency Ordinance no. 57/2007 on the regime of natural protected areas, conservation of natural habitats, and wild flora and fauna with subsequent modifications and completions, for the land located in protected natural areas owned by private ownership or concessionaires, the owners or concessionaires will receive compensation for compliance with the restrictive provisions in the management plan of the protected natural area or for the conservation measures in place. The method of requesting, calculating and granting the compensations is established by the government decision, initiated by the central public authority for environmental protection.

Also, until the management plans are approved, the administrators of the respective protected natural areas are required to establish a set of conservation measures for which the compensation is required and to transmit this information to the central public authority for environmental protection within 6 months from taking over the management of the protected natural area.

For landowners/land users from Natura 2000 sites, both the EU and our country have funded the Natura 2000 programmes from the Structural Funds provided for Romania from the Sectoral Operational Program for Environment, Regional Operational Program, the LEADER and INTERREG programmes, and the National Program for agri-environment. Also, according to the National Plan for Rural Development, the Natura 2000 sites receive support, meaning that areas located in Natura 2000 sites can access funds for making environment-friendly agriculture as well as funds for impoverished areas.

At present, there is also a draft of Government Decision for the approval of the Methodological Norms for granting, using and controlling the state aid for compensations, representing the value of the wood that the owners do not collect due to the protection functions established by forestry arrangements, necessary to cover the costs claimed by the sustainable management of forests located in the Natura 2000 sites.

### What are the main critical points regarding ecological network development?

#### The Czech Republic

TSES suffers from many stereotypes, out-dated methodologies and only marginal interest of public society. The future of TSES consists not only in improving the system, but also in establishing its real sense.

#### Hungary

In Hungary, the main critical point is the insufficient implementation of ecological network development. The difficult accessibility of databases also means a crucial problem. Similarly to the Czech Republic, the quality of the land-use documents in several cases is low and the communication between the stakeholders is also difficult.

## Serbia

Ecological network in Serbia, although officially established and proclaimed, has in no way grown in functionality in ecological sense (i.e. primarily, there are not enough established and functional corridors, thus parts of the ecological network are isolated from each other and look more like patches).

Ecological network in reality consists of various types of protected areas. Within them, there are some established „core areas”, defined as „Strictly Protected Areas”, „buffer zones” and „sustainable-use” areas, but mainly still missing - „restoration” areas.

Legislation is still not fully operational. There is a need for clarification of legal uncertainties. There is still no strict procedure about the Appropriate Assessment in the Decree on the Ecological Network in Serbia, for example.

The in-depth analysis of network elements (quality, persistence etc.) caused by the lack of funding has been neglected.

There is a lack of research that is more oriented on ecological networks and some specific problems connected with the network. The same case occurs with the lack of intersectoral cooperation to solve the problems of management.

## Slovakia

The main critical point relates to the implementation reality. The broad available knowledge is only transferred into reality with difficulty due lacking financial instruments.

Data accessibility - data are collected and not accessible for the decision making processes. Even if the data sets are collected, they are not territorially related. The gap in knowledge regards the effects of particular interventions/measures, especially in the context of specific preconditions of their implementation and utilization. This causes replication of not optimal and inefficient measures.

There is a need to build an integrated database that should be available and accessible. The database architecture and its interfaces should allow for collecting in appropriate structure and form, especially regarding a specific group of stakeholders. The data should be standardized and internationally compatible and comparable.

The key to increasing the effectiveness of planning performance is the improvement of the consequent implementation of the legal state principles (a state with the rule of law); in many cases, the comprehensive planning is separate from implementation tools, including financial instruments and absencing mechanism of balancing beneficiaries and losers, including the internalization of externalities. Proper balance is needed between time and capacities for bureaucratic processes and time and capacities for objective assessment.

Improperly designed processes of public participation as a part of SEA are endangering the optimization of the final decisions as an output of participatory processes (the case of ecoduct in Povazska Bystrica in Slovakia).

Low level of process harmonization exists - sectoral coordination plans at the national level - not in the form of allocation plans, but in the form of setting the frameworks for planning.

## Romania

Specialists reckon that main critical points concern the occurrence of land use restrictions in Natura 2000 protected areas. Thus, before declaring the Natura 2000 network, the land owners from these sites were ensured that the inclusion into the Natura 2000 network will not affect their property rights or their administration, and their day-to-day activities will not require environment impact assessments.

Unfortunately, however, the new management plans came with many restrictions, which often did not consider the needs of local communities, only focusing on the way to preserve species and habitats of community interest, thus blocking the economic development.

Another problem also arises in built-up areas from protected areas, where environment impact assessment studies are required for virtually any activity, which means more money spent by owners and more bureaucracy.

Further, there is an issue with the compensation system. The application of compensations to land owners having restrictions of use or to those who have suffered damage caused by strictly protected species (such as large carnivores) is very difficult.

Also, the Ministry of Agriculture offers some subsidies on voluntary agro-environment measures, which, as they argue, cannot be granted when measures become mandatory through management plans, creating an institutional blockage, all to the detriment of local communities.

After the designation of Natura 2000 sites, some issues related to the planned activities have arisen. A low involvement of the co-interested groups, a lack of cooperation between stakeholders from different sectors, legislative loopholes regarding the ecological corridors and their role as well as the absence of a clear methodology for their identification, mapping and management – these were also criticized.

## What are the main conflicts between conservationists and other stakeholders (e.g. foresters, hunters, farmers, developers, and spatial planners)?

### The Czech Republic

Probably the main conflict is between conservationists and landowners. In some cases, the development of the TSES requires changes in the land use; however, a landowner may not agree with them. The Land Registry has to offer them the replacement of their land for another within the property of the state in an adequate range and quality of the original land (and if possible, in the same municipality where the majority of the original land is located). However, as the law states on the replacement offer (Act No. 114/1992 Gazette, paragraph 59, section 2), an owner must agree with the replacement, which may complicate the process of development of the TSES.

### Hungary

In Hungary, the basic problem is the conflicting interest due to miscommunication (the stakeholders are not aware of the common interest and benefits).

### Serbia

If the nature conservation is not recognised as a sector protecting the natural resources, the users of these resources regard the restrictions as irrelevant.

The common interests revealed during the last decade are not popularised. There are ongoing conflicts in respect to particular interests, as well as a lack of communication between stakeholders and conservationists.

## Slovakia

The main conflicts relate to incorrect division between subjects who benefit and who lose due the lacking efficient system of compensations for limitations of the land use. On the other hand, the problem is the consequent implementation of the principle of legal state with equality for all.

## Romania

In principle, in areas with Natura 2000 sites, certain activities can be performed with conditions. For example, here:

- » Products (e.g. medicinal plants) may only be exploited outside special conservation areas with the consent of landowners within the Natura 2000 sites, the Natural Area Administration and the Environmental Protection Agency, to which it belongs.
- » It is only possible to exploit the wood mass of the forest fund located in Natura 2000 sites with the consent of the site administration (Park Administration) and with an environmental agreement from the Environmental Protection Agency of the respective county;
- » Animal husbandry activities may be carried out on the basis of proposals by mayoralities for grazing of sheep and use of grass/pasture meadows only on specific highs, periods and approved flocks by the administrations of the concerned protected areas.
- » Economic tourism activities can be carried out in compliance with the provisions of the management plans regarding the recreation, sports and the development of the natural objectives of tourist interest;
- » Hunting activities outside the special conservation areas may be carried out by persons authorized under the law within the limit of the quota approved by the Scientific Council of the Natura 2000 site.
- » Public access with motorized vehicles is strictly forbidden.

Conflicts between conservationists and developers can be mentioned in Roşia Montană (Alba county), on the subject of mine site construction. The Zonal Urban Plan that permitted constructions at the mine site was cancelled by the Cluj Tribunal, in favour of environmental organizations that assumed that the development of a mine using cyanide was not in compliance with Romanian legislation.

Several discussions were also made when developing wind parks on the territory of Constanta and Tulcea counties. The specific weather conditions in the Dobrogea region was favourable for the construction of wind power stations, but conservationists argued that many of them were located in Natura 2000 sites.

Buildings raised without authorization on the territory of environmentally protected areas should be demolished, being illegal constructions raised without the environment approval.

## Are the stakeholders and locals aware of the importance of the ecological networks? Is there any program for the promotion or information?

### The Czech Republic

The level of knowledge of the public and even stakeholders of the TSES issue is poor and there is no integrated information campaign.

An international seminar, TSES – the green backbone of the landscape, is organized every year by the Ministry of Environment, NCA CZ, CZ-IALE, Mendel University of Brno and AGERIS, s.r.o (Ltd.). The seminars are focused on current issues regarding the TSES and have consisted of expert discussions,

shared knowledge and experience, and meetings of academics and practitioners. Every year, many issues of protection, designing and delimitation of TSES, parameters, frequency, density and elements of TSES are discussed. Excursions to places with a good practice of biocentre and biocorridors realization have been part of seminars.

## Hungary

In Hungary, the majority of the locals and stakeholders are unaware of the importance of ecological networks. There is no nation-wide communication plan related to this issue. However, there are some promotion campaign activities, but these are usually separated actions related to certain projects at local or micro-regional levels.

## Serbia

Most of the stakeholders are unaware of the importance of ecological networks.

Some actions have been undertaken during the process of valuation and establishment of the various protected areas and/or habitats, which could be potential parts of the ecological network. During these processes, some stakeholders were involved in some stages (i.e. consultations with public enterprises for forest management, local tourist organizations, hunting societies, NGOs, local government), but generally, there are no specific discussions, programmes or/and promotions about the importance of ecological networks.

During the period of 2009-2012, while the ecological network of Vojvodina was being established, leaflets aimed at forestry, water management, agriculture and infrastructure planning were prepared ([www.pzzp.rs](http://www.pzzp.rs)) and several conference papers were published. Except the basic information on the site of the Institute of Nature Conservation of Vojvodina Province ([www.pzzp.rs](http://www.pzzp.rs)), there are no ongoing activities of popularisation.

## Slovakia

Raising awareness is important and it requires time investment, but it is currently not crucial at the local level.

## Romania

Usually, stakeholders and locals are informed and consulted in the decisional process in connection with natural protected areas.

When receiving the necessary documentation for the establishment of the protected natural habitat regime, competent environmental authorities must advise landowners and land managers and consult with all stakeholders.

In order to consider all aspects of the field, the National Agency for Protected Natural Areas/Administrators of the protected areas of national and/or community interest will be consulted by the environmental authorities responsible for the environmental project or for activities that can significantly affect protected natural areas.

The environmental agreement/permit or the Natura 2000 approval, as the case may be, for projects and/or plans shall only be issued if the project or plan does not adversely affect the integrity of the protected natural area concerned and after consulting the public in accordance with the relevant legislation.

## 4.3. Integrating spatial planning and ecological networks

**How are ecological networks integrated into spatial planning in your country? What kind of ecological network elements and in what scales appear in the spatial plans at different territorial levels (please, indicate the territorial and local level as well)?**

### The Czech Republic

The Czech Republic is among the European countries where establishing and managing ecological networks at various spatial scales have been included in the nature conservation and landscape management legislation. In addition, the issue has also been included into the country's spatial planning legislation, i.e. the Building Act. From the viewpoint of spatial planning, the TSES is one of the natural limits of land use within the particular territory, which has to be identified and taken into account during the spatial planning procedure. Therefore, the TSES acquires a general obligatory character within the process of approving the land-planning documentation. In practice, the ecological network should also be considered when elaborating proposals for comprehensive land consolidation/re-plotting and Forest Management Plan (basic forest management planning tools for both government and private owners).

Supra-regional Territorial System of Ecological Stability (SR TSES)

The Supra-regional TSES includes most of the internationally significant conservation areas in the Czech Republic. In addition to other information sources, it has been used for improving the Specially Protected Areas in the country.

The Supra-regional TSES was the background source for identifying the European Ecological Network (PEEN); components in the Supra-regional TSES were the background source for identifying the European Ecological Network (PEEN) components in the Czech Republic in 1996 (see below). The EECONET-CZ corridors are almost identical with those in the SR-TSES. The methodological difference is the delimitation of buffer zones for core areas and of Special Landscape Management Zones, because they do not exist in the SR-TSES.

The SR-TSES GIS layers include both supra-regional biocentres and supra-regional biocorridors and their buffer zones.

Regional (e.g. Subnational) Territorial System of Ecological Stability (R-TSES)

The R-TSES GIS layers include both regional biocentres and regional biocorridors and their buffer zones.

Local Territorial System of Ecological Stability (L-TSES)

The information on area, lengths and coverage is only available on part of the Czech Republic territory and rarely in a digital format. The L-TSES are mapped in the scale of 1:2 000 to 1:25 000. Only some L-TSES designs have been digitized.

From a legal viewpoint, the TSES concept is not only an issue of the State Nature Conservancy, but at same time forms an obligatory background for decisions on land-use within the particular territory. Nevertheless, there are still barriers to spatial planning and TSES integration.

Components of TSES: Biocentres (core areas); Biocorridors; Buffer zones; Interactive elements

Interactive elements of TSES are significant landscape segments or ecologically significant linear communities, which contribute to a favourable influence of biocentres and biocorridors on surrounding less ecologically stable landscapes through longer distances. They support the occurrence of wild plants and animals, significantly influencing cultural ecosystem functioning and Interactive elements are proposed at the local level. In addition, they often allow permanent occurrence of the particular wildlife species with fewer spatial requirements (e.g., wild plants, some insects, amphibians, birds and small mammals, etc.). Examples include ecotone communities on forest edges, small hedgerows, and clusters of trees or solitary trees in arable land (a cultural and ecological desert).

### Hungary

In Hungary, the ecological network is integrated into the spatial plans. The National Land Use Plan; the County Land Use Framework Plans, and Land use plans for so called prioritised regions (e.g. the Lake Balaton Recreation-al Area and the Budapest Metropolitan Region) contain regional tasks to protect the environment, landscape and nature, and the Regulation Plans (zoning of regulation packages on a map) of the Spatial Plans contain the exact particular zone of the National ecological network. A specific package of regulations and restrictions has been proposed for the zone. The national ecological network zone includes the core areas, the buffer zones and the ecological corridors as well. The spatial plans are arranged in a hierarchical structure; each plan must be in concordance with the plan on the higher level. Within the frames of development plans, guidelines for special landscape types can also be found. The National Development Concept of 2011 formulates guidelines for development and protection for landscape areas of national importance such as Lake Balaton, Danube region, or Lake Tisza. The land use plans (master plans) of the settlements follow the structure of the higher (spatial) level land use plans. The picture shows the environmental and land-scape design plan of a small settlement as part of the master plan. However, in the case of ecological networks, the most important problem is the inconsistency of the spatial plans on different levels from the ecological networks perspective. At the local level it means that the designation of ecological network is based on estate records, and it is hardly comparable with the national ecological network.

### Serbia

Legislation for the spatial planning and construction sector does not provide provisions relating to ecological corridors. Ecological corridors are indirectly covered by the provisions relating to the protection of nature and landscape. Also, the existing legislative documents in Serbia do not have ecological network monitoring obligations.

In spatial planning practice, ecological corridors have been formally stated in spatial plans at different levels of planning. They are most often mentioned in generalized formulations about the necessity of their identification, valorization and protection, without clear spatial delimitation on maps of the spatial plans.

The exceptions are spatial plans in the territory of AP Vojvodina: Spatial delimitation and protection measures are defined in the Regional Spatial Plan for Vojvodina Province and Spatial Plans for the Special Purpose Areas. In the Municipality Spatial Plans, all levels of ecological corridors are mapped, with defined but not implemented adequate measures for their protection.

In urban plans ecological corridors are not treated.

### Slovakia

Landscape – ecologic plan at the regional and municipal level - Landscape ecologic plan is a document elaborated as part of the procurement of land-use plans at regional and municipal level with the focus on landscape ecological analyses, assessment and optimisation of functional use in accordance with landscape ecologic potentials and limits for the development. The plans of the Territorial Systems of Ecological Stability are in line with the Law on land-use planning supportive documents. They are based on indicated eco-corridors in the open as well as built-up landscape. Partially, the plans for territorial systems of ecological stability used to be reflected in the land-consolidation projects, but they are not compulsory documents as the land consolidation is a request-oriented process.

## Romania

Law 350/2001 on Spatial and Urban Planning specifies that territorial management aims, among others, to ensure the protection of natural and built landscapes, biodiversity conservation and the creation of ecological continuity.

In Romania, the basic purpose of spatial planning is to unify the economic, social, ecological and cultural policies at national and local level and among its objectives is that of a sustainable management of the landscape, which is a basic component of natural and cultural heritage and natural resources. As for urban planning, one of its main objectives includes the protection and enhancement of natural heritage.

Principles related to the protection, promotion and valorisation of natural heritage are also provided in the Territorial Development Strategy of Romania until 2035.

The central public administration authority for territorial and urban planning is the Ministry of Regional Development and Public Administration. In this capacity, it includes the attributions of identification, delimitation and establishment of the territories of remarkable value by their uniqueness and landscape coherence, with particular value in the field of natural heritage (also, by Government Decision, in consultation with the central public authority responsible for the environmental issues, responsible in the fields of culture and national patrimony, as the case may be, as well as local public administration authorities).

Integration of ecological networks in the activity of spatial planning in Romania

The protected areas of national interest are defined and presented in the Law no. 5/2000 on the approval of the National Spatial Plan, Section III: Protected areas.

Emergency Ordinance no. 57/2007 on the regime of natural protected areas, conservation of natural habitats, wild flora and fauna with subsequent modifications and completions states that protected natural areas and ecological corridors are mandatory to be highlighted by the National Agency for Cadastre and Real Estate Advertising in national, zonal and local urban and spatial plans, in cadastral plans and land books, as well as by the central public authority for agriculture.

The constitution of the protected natural areas has also considered the provisions of general urban plans, which cannot be modified until the upgrading period stipulated by the existing legislation on spatial and urban planning. The areas located within the localities on the date of the establishment of the protected natural area can only be introduced inside the protected natural area in highly justified cases in a separate chapter of the scientific substantiation study.

The approved legal urban plans establish the types of activities that can be carried out in the areas of sustainable development (areas where investment/development activities are allowed, with priority being placed on tourism, but respecting the principle of sustainable use of natural resources), which are provided in the management plans of the protected areas.

The central public administration authorities with responsibilities in the field of spatial planning, urban planning, environment and sustainable development for the protection of natural and landscape heritage developed an urban planning framework regulation for the Danube Delta Biosphere Reserve, approved by the Government Decision.

Order no. 1964/2007 on the establishment of the regime of natural protected areas for the sites of community importance, as an integral part of the European Ecological Network Natura 2000 in Romania also reflects the link between these protected areas and territorial planning. Thus, territorial development plans – local and national – as well as any other plans for the exploitation/use of natural resources in these areas are harmonized by their issuing authorities with the provisions of the site management plan. Also, modification of urban plans of settlements located at the limit with the natural reserve is made on the basis of an environmental documentation and is advised by the custodian of the natural reserve. Territorial Agencies for Environmental Protection take the necessary measures to ensure that the local public administration authorities make it compulsory to include the Natura 2000 sites into spatial and urban plans.

National, zonal and local urban and spatial plans must necessarily highlight natural reserves and protection areas. The obligation of the local public administration authorities is to verify the inclusion of the sites of community importance into spatial and urban plans, declared by Order 338/2013 regarding the approval of some regulations for sites of Community importance and/or protected natural areas of national interest.

Also, when issuing the building permit by the competent public authority, the provisions of the urban planning documents and of the local urbanization regulations related to them will be considered, as well as aspects related to the risk of negatively affecting the natural heritage or valuable landscapes.

The Urban Planning Regulations must contain rules on preserving the environment integrity and protecting the natural heritage (Decree No. 525/1996 for the approval of the General Regulation of urban planning). Regarding the protected natural areas, the County Councils will identify and delimitate, according to the specific features, those natural areas of local interest that require protection as for their landscaping value and will establish the conditions to authorize the execution of the constructions, in order to preserve the quality of natural environment and to maintain ecological balance.

According to the Methodology for the Elaboration of General Urban Plans, inserting the elements of ecological networks is mandatory in all the chapters (the Content Framework, the General Memo and the Urbanistic Regulations of each locality). Thus:

The Content Framework contains substantiation fundamental studies covering the protected areas within a locality.

The General Memo contains elements of the natural environment in both chapters The Current Development Status and The Urban Development Proposals, for which the documents on a larger territorial scale are consulted (National/Regional/County Spatial Plans - PATN, PATR, PATJ). The elements of the ecological networks are indirectly related to the existing built-in area with its functional areas, territorial balance, natural risk areas, dysfunctions, and urban planning proposals, including the built-up area. Concerning environmental protection, proposals and measures for urban intervention are formulated, regarding the indicative delimitation of protected areas and general restrictions for the preservation of natural heritage. The areas for landscape and urban rehabilitation are presented, representing the basis for obtaining the Environmental Agreement.

In the chapter on Urban Regulations, the General Urban Plan presents the regulations and categories of urbanistic intervention on protected areas and their boundaries or the protection of some areas situated outside the boundaries of the locality, temporary interdictions of construction for some areas requiring further studies and research (an Urban Zonal Plan is proposed in areas with temporary interdiction of construction) or a definitive interdiction of construction for areas with natural hazards, protection necessities, etc.

In Zonal Urban Plans, which also provide specific regulations for a particular area in a locality, natural heritage values that require protection are highlighted, and their Local Urban Regulations establish basic rules for preserving environmental integrity and protecting natural heritage.

The methodologies for elaboration of Urban Plans of various types (General, Zonal, Detail) stipulate that they must also include the Natural Protected Areas in different territorial scales, mentioned in both written and graphic parts. These protected natural areas are represented in urban plans in specific scales (the topographic support of the locality is provided by the cadastre and real estate publicity offices).

Urbanistic documents must be represented in digital or analogue format in an appropriate scale (according to the type of documentation), on a topographic basis made in Stereo 1970 coordinates, updated on the basis of orthophotomaps or on the basis of field measurements, while respecting and integrating the boundaries of limits registered in the cadastral and real estate publicity records and provided by the cadastre and real estate publicity offices.

Areas of natural heritage value/protected areas are highlighted in maps in different scales.

In a General Urban Plan, protected areas are mapped as follows:

- » In the plan representing the location in the territory – in 1:25,000 scale
- » In the plan representing the existing situation. Dysfunctions – in 1:5,000 scale
- » The plans representing Urban Regulations and Functional Zoning contain natural protected areas in the scale 1:5,000.

In a Zonal Urban Plan, natural protected areas can also be represented in plans at different scales. Thus:

- » The plan representing the location in the territory can come in the scales of 1:5,000, 1:10,000 or 1:15,000.
- » The plans representing Existing situation and Regulations can come in the scales of 1:1,000 or 1:2,000.

Protected areas can be represented in the Detail Urban Plan both on topographic support in the scale of 1:5,000 or 1:2,000 for location in a territory or a zone, and on cadastral or topographic support in the scale of 1:500 or 1:1,000, representing the existing situation or Regulations.

## What limitations or rules apply to land use and development possibilities according to the ecologic network in spatial plans?

### The Czech Republic

The general principles of TSES regulations/land use limitations are defined by the Methodology of incorporation of TSES into the spatial plan of municipalities. Regulations/land use limitations of particular land in the territory of the TSES elements are contained in the individual spatial plans.

The regulations for the areas covered by the TSES have to ensure the conditions for permanent functionality of the existing TSES elements, and ensure territorial protection of areas to supplement missing TSES elements (to be established).

Existing biocentre

The goal is to achieve a natural species composition of biota. The secondary function of biocentre (i.e. production function) has to be tributary to this goal. Disturbing activities (such as building sites, residential recreation, intensive farming, etc.) and activities that reduce ecological stability are forbidden.

Existing biocorridor

The goal is to allow migration of all organisms between biocentres (not their permanent existence in the biocorridor). Therefore, more opportunities for the economy are allowed. Under certain conditions, biocorridor may in part consist of anthropic biocenosis with sufficient ecological stability (extensive orchards, permanent grasslands, etc.). Parallel leading of biocorridor and roads, recreation paths etc. is possible. Where necessary, construction of line structures (cross), water management facilities, wastewater treatment plants, etc. is conditionally acceptable. Other activities degrading ecological stability are forbidden.

Missing elements (to be established)

A change in land use, making a future implementation impossible or significantly more difficult, cannot be accepted. Implementation is conditioned by the solution of ownership relation in the TSES project, in complex land improvements or in forest management plans. The rights of landowners for existing uses are protected. If there is no agreement between owners and state nature conservancy authorities, restriction of the rights is possible under certain conditions and compensation. In this case, a replacement plot is provided (Lepeška et al., 1998).

### Hungary

In Hungary, a specific package of regulations and restrictions has been proposed for the zones of the National Ecological Network. The national ecological network zone includes natural and semi-natural habitats of national importance and a unified and composite system of ecological corridors, which provide links between them. In the zone of core areas and ecological corridors, the rules restrict the designation of areas for development, the placement of transport infrastructure and new surface mines.

### Serbia

In the existing spatial plans and other planning documents, ecological networks have just a formal mention. Only in Vojvodina Province, the spatial plan is giving delimitation and protection measures, with defined but not implemented limitations and rules on ecological networks.

The recommendations for spatial plans in respect to ecological corridors can be prepared as part of this project.

### Slovakia

The definition of a bio-corridor in the land-use documentation, unless it is a nature protected area, is the only way to protect the function of a bio-corridor. Based on this, the bio-corridors can be mirrored in the land consolidation projects as well. The limitations can apply to changes related to the functional use of the area and physical structures. They can limit but not prescribe the changes; it means they do not allow other changes than the changes in accordance with the limitation, but they can't pressure the owners and users to make changes.

### Romania

As previously mentioned, national, zonal and local urban and spatial plans must necessarily highlight the protected natural areas and ecological corridors and local public authorities have the responsibility to underline the protected area limitations in urban plans of the locality.

The activities that can take place on the territory of protected areas as well as the necessary conservation actions are described in their (approved) Management Plans. They take account of the current status as well as of the development trends of the territories containing the protected areas, the interest for the land and for their natural resources, showing the evolution of possible threats. In the Management Strategy of an area within a protected area, conditions for human activities have been established; therefore, maps of special areas and their management measures are presented in the spatial development plans of the area.

According to the law, spatial plans, national and local development plans as well as other plans for the exploitation or use of natural resources within a protected natural area that have impact on natural resources or biodiversity will be unified by the issuing authorities with the provisions of the management plan (e.g. development strategies at regional, county, and local levels setting the main development directions, existing projects in the area such as rehabilitation projects or those considering a reduction in pollution or plans for constructions near the protected area).

Spatial development plans will take into account the Regulations of Protected Areas and the regulation of activities in special protection areas. For example, certain types of transport, certain forestry, hunting or fishing activities, some sort of grassland management and exploitation or tourism activities are forbidden. With regards to the construction in the territory of the protected areas, permanent constructions, the construction of new roads or bridges, and the modernization of the existing roads in such areas – all this is only done with the approval of the Environmental Protection Agency.

## What are the main gaps in the integration of the ecological networks in other policy sectors?

### The Czech Republic

Barriers to spatial planning and ecological networks integration in the Czech Republic include (Plesník, 2008):

1) Barriers within the State Nature Conservancy and more generally, environment protection sector

Some State Nature Conservancy authorities have strongly preferred designing, establishing and managing the Specially Protected Areas under Act No. 114/1992 Gazette on the Protection of Nature and the Landscape, as amended later. Less attention is being paid by them to the parts of landscape generally protected under the above Act, incl. TSES elements.

2) Barriers within the spatial planning and regional development sectors

Licences for TSES designers are not issued by the State Nature Conservancy authorities but by the Chamber of Architects. Therefore, in some cases, despite the very sophisticated methodology, the local TSES design is made without appropriate knowledge of the area concerned.

3) Barriers within the communication between both sectors

In the Czech Republic, there still exist traditional strong barriers among the particular sectors: in many cases, inter-personal relations can solve the common problems more effectively and earlier than official negotiations between the particular sectors.

4) Barriers within the public administration

For various reasons, municipalities have not been able to elaborate high-quality background documents for the local TSES to be included into the spatial planning process (see above). Therefore, local TSES are the weakest part of the TSES system in the Czech Republic.

5) Other barriers

Although the TSES concept was formulated in the former Czechoslovakia in the late 1970s and early 1980s, there is still poor awareness of the general public of the role, importance and benefits of the multi-lateral ecological network in the landscape. Raising public awareness of the TSES and ecological network generally has been carried out by NGOs in particular, e.g. by the Czech Union for Nature Conservation (Veronica Ecological Institute in Brno).

From a scientific viewpoint, due to some controversies, particularly with respect to efficiency of ecological corridors for supporting or improving the landscape connectivity, some scientists have expressed their serious doubts as for the real importance of ecological networks for maintaining both biological diversity and life-supporting processes in ecosystems. Some other experts argue that the variability of conditions in the current landscape including those caused by human interventions does not allow to apply the single, although sophisticated methodology for establishing the TSES. Therefore, the ecological network itself is very often considered as only paper- or computer work.

### Hungary

In Hungary, the insufficient communication between the spatial planning and regional development sectors causes problems. Gaps can arise thanks to the public administration system and structure (lack of human and financial support; complicated and contentiously changing structures).

### Serbia

Although the Republic of Serbia has signed the Carpathian Convention and has adopted several Laws and rulebooks unified with this convention, almost none of the strategies have adopted its rules and recommendations.

The main gap is that the ecological network has to be identified and evaluated and protection measures proposed at the national level – namely in the national policy/strategy for nature protection and/or biodiversity protection.

Only two national strategies actually mention ecological networks in Serbia: the Strategy on Biodiversity (until 2019, will be replaced by the Program on Nature Conservation, which includes bio and geodiversity and landscape and will be adopted in 2019 for the following ten year period) and the Strategy on Sustainable Use of Natural Resources. However, neither of them really gives a recommendation to integrate ecological networks in other sectors, except nature protection.

### Slovakia

The main gap is the authority of ecological network documents and a lack of the instruments to implement proper measures to restore them.

### Romania

Emergency Ordinance no. 195/2005 on environmental protection and approved by Law 265/2006, as subsequently amended and supplemented, provides the correlation between spatial and urban planning with the environmental planning. Urban and spatial planning plans are subject to the environmental assessment procedure in order to obtain environmental permits for plans and programmes.

Urban and spatial plans require the inclusion of measures to maintain and improve the natural and anthropic landscapes of each area and locality, landscape and ecological restoration conditions of damaged areas, and measures for the development of green areas, among others.

The correlation of environmental planning with spatial and urban planning falls within the responsibilities and responsibilities of the central public authority for environmental protection. The obligation to verify the correlation of environmental planning with the provisions of the urban and spatial planning plans rests with the local public administration authorities, who have the obligation to supervise rather than change the destination of the lands set as green spaces and/or provided as such in the urban plans, and rather than reduce their surfaces. The local public administration authorities shall verify the provisions of the urban plans regarding the location of industrial sites, roads, sewerage networks, sewage treatment plants, household waste deposits and other objectives, without harming the environment.

The development of ecological infrastructures, ensuring the diversity and interconnectivity of natural areas (in the context of the Natura 2000 network management) and the identification of specific measures for the protection of natural habitats are foreseen in the Territorial Development Strategy of Romania until 2035.

Also, in the field of transport, The Romanian General Transport Plan up to 2030 (Government Decision No. 666/2016 for the approval of the Master Plan of Romania's General Transport Plan) requires compliance with the conservation measures of the future transport projects as well as integration of ecological infrastructures so as to avoid the negative impact on the protected and unprotected areas where there are species of community interest.

Law 451/2002 on the ratification of the European Landscape Convention, adopted in Florence on October 20, 2000, provides landscape integration not only into spatial and urban plans, but also into cultural,

environmental, agricultural, social and economic plans, as well as in other policies that may have a direct or indirect impact on the landscape. To fill the gaps of the ecological network integration process in different policy sectors and in order to ensure an integrated management of the spatial planning, operational objectives are proposed, such as the development and implementation of spatial planning policies to support biodiversity conservation (particular attention should be paid to ecological corridors, or areas outside the protected natural areas but with increased biodiversity, such as mountain and coastal areas, as well as wetlands) and inclusion of landscape conservation as one of the main conditions to develop projects funded by the Structural and Cohesion Funds.

From a legislative point of view, regulations on spatial planning and those on natural heritage protection have not been unified with those on the regime of protected areas. However, in recent years, there have been several attempts to unify environmental issues with other sectoral policies.

From the viewpoint of spatial planning, it has already been observed that it is necessary to introduce some provisions regarding the landscape in the legislation in force. It is also necessary to update the Annex III of the Law no. 5/2000 regarding spatial planning, including the setting of sanctions. It is necessary to ensure the coherence between the spatial and urban planning policies, local development plans and biodiversity conservation plans. It is also necessary to integrate the studies identifying and evaluating the species and habitats in the urban environment into the General Urban Plans.

Therefore, recently (2018), the Decision for the approval of the preliminary theses of the Territorial Planning, Urbanism and Construction Code draft was launched into public debate, for approving the preliminary theses of the Planning and Urban Territorial Planning Code draft.

As far as landscapes are concerned, it is necessary to develop a Guide for their identification and evaluation, as well as an inventory and evaluation of the cultural, natural and mixed landscapes in Romania. It is necessary to make regulations for the management of these landscapes, as well as the development of local policies on landscape and their integration in other local sectoral policies. Action plans for the reconstruction and/or restoration of degraded and/or destroyed landscapes should be carried out parallel to a procedure for assessing the impact that Structural and Cohesion Fund projects on the natural landscape have and funding should only be accepted of projects that do not affect landscape.

Also recently, Decision no. 905/2016 to approve the preliminary theses of the Cultural Heritage Code project shows that the integrating tool of cultural and natural heritage protection policies is the landscape. The Decision shows that there are no territorial operational mechanisms so far as the National Strategy and the Action Plan for the Conservation of Biodiversity 2014-2020 emphasize the importance of landscape both as part of the national heritage and as a planning element of balanced development. However, they fail to determine any specific instrument.

Regarding the natural heritage, specific tools for landscape protection are going to be integral parts of the spatial planning process. Landscape plans, as specific tools, will be adopted:

- a) the Territorial Landscape Plan – a directive instrument which establishes integrated development and protection rules, identifying priority cultural and natural values and their specific needs for protection, constituted as a mandatory section of the spatial plans;
- b) The Local Landscape Plan – the instrument of detailed regulation of interventions in the territory, constituted as a mandatory section of urban planning plans.

The Territorial Landscape Plan and the Local Landscape Plan are integrated spatial planning tools that coordinate, unify and express environmental development policies at the level of territorial interventions.

Landscape plans identify, evaluate and delimit the different types of landscapes, implementing specific management plans and intervention regulations for each one of them that ensure balanced development with respect to natural and cultural values. Their measures will form an integral part of the spatial and urban planning schemes as specific spatial planning tools, ensuring an integrated cross-sectoral vision. Landscape plans will be described by precise and specific topographical boundaries.

## How deep is the integration of ecological network-related issues in the strategic impact assessment?

### The Czech Republic

Within the Environmental Impact Assessment, the impact of buildings on the TSES is solved. According to the Act No. 100/2001 Gazette, Annex No. 2, the parameters of the territory likely to be affected by the planned project must be considered, with particular regard to the absorption capacity of the natural environment, and with particular attention to territorial system of ecological stability of the landscape, specially protected areas, Sites of European Importance and bird areas, areas of natural parks, significant landscape components, wetlands, riparian areas and river mouths, coastal zones and the marine environment, mountain and forest areas, areas of historical, cultural or archaeological significance, densely populated areas, areas excessively overloaded above the level of acceptable environmental burdening or areas which are considered to be excessively overloaded above the level of acceptable environmental burdening (including old ecological burdens).

### Hungary

The Government decree 132/2010 (IV.21.) on the announcement of the protocol adopted on May 21, 2003 in Kiev on strategic environmental assessment related to the Convention on Environmental Impact Assessment in a transboundary context done at Espoo (Finland), on February 26, 1991 (hereinafter Government Decree 132/2010 (IV.21) deals with the ecological network-related issues (e.g. Natura 2000 areas, protected areas, territorial system of ecological stability of the landscape).

### Serbia

In the existing legislative framework (the Law on SEA - "Official gazette No. 135/04 and 88/10"), ecological network related issues are not even mentioned. However, the actual practice of SEA in Serbia strongly involves the subject of ecological networks (recognition, evaluation, monitoring and measures).

On the other hand, the new draft on the Law of the SEA (whose adoption was expected in 2019) has proposed an obligation for the SEA for plans and programmes for which it is determined, according to a special regulation in the area of nature protection, that they can have a significant negative impact on the ecological network. Besides, the new law draft proposes that the Decision on SEA mandatorily needs to contain results of the preliminary assessments of the plan or programme acceptability for the ecological network in accordance with the regulation governing the nature protection. Also, law draft proposes that when an appropriate act of a body responsible for nature protection considers that a plan or programme may have significant negative effects on the objectives of conservation and integrity of the ecological network area, the content of the strategic assessment report shall include the chapters defining the effects of the plan or programme on the ecological network, in accordance with special regulations governing nature protection. There is also an obligation to evaluate the planned solutions in protected areas and ecological networks.

These new amendments within the new Law on SEA could possibly emphasize the existing problem of perceiving the importance of ecological networks for the environmental protection and possible impacts that some of the planned solutions might have on the ecological network.

### Slovakia

The topic is included as an important part of the SEA.

## Romania

Order 1798/2007 for the approval of the issuing procedure for the environmental permit issuance shows that the Environmental Protection Agencies issue environmental permits. They are positively advised only when the activities/plans/programmes/ submitted for approval are considered not to have a significant negative impact on the habitat integrity and its conservation status. For certain activities that are in any way harmful to key species and habitats, compensation measures specified by the Environment Protection Agency may be applied.

The legal provisions in force concerning the procedure for carrying out the environmental assessment for plans and programmes and concerning the framework procedure for the evaluation of environmental impact are applied for all plans, programmes and projects to be carried out in sites of community importance and in their vicinity.

The environmental report, i.e. the environmental impact assessment report, should highlight all the species and/or types of habitats of community interest for which conservation has been designated and should propose measures to reduce their impact, conservation measures and/or compensatory measures, as appropriate.

Order no. 1964/2007 on establishing the protected natural habitat regime of sites of importance for sites of community importance, as an integral part of the European ecological network Natura 2000 in Romania specifies that for all plans, programmes and projects to be carried out in sites of community importance and in their vicinity, the legal provisions in force concerning the procedure for carrying out the environmental assessment for plans and programmes and the framework procedure for environmental impact assessment are applied. Plans and programmes, as well as any work or activity likely to generate an impact on the environment and on the species and habitats of the reserves and their vicinity, shall be subject to regulation by environmental protection authorities, in accordance with applicable law, with the consent of the custodian.

## **ConnectGREEN DTP2-072-2.3**

**Restoring and managing ecological corridors in mountains as the green infrastructure in the Danube basin**

### **Project partners**

**Romania:** WWF Romania (Lead Partner) · National Institute for Research and Development in Constructions, Urban Planning and Sustainable Spatial Development · Piatra Craiului National Park Administration

**Austria:** WWF Central and Eastern Europe

**Czech Republic:** Nature Conservation Agency of the Czech Republic · Silva Tarouca Research Institute for Landscape and Ornamental Gardening

**Hungary:** CEEweb for Biodiversity · Hungarian University for Agriculture and Life Sciences (formerly Szent Istvan University)

**Slovakia:** Slovak Environment Agency · The State Nature Conservancy of the Slovak Republic · Slovak University of Technology in Bratislava – SPECTRA Centre of Excellence of EU

**Serbia:** Institute of Architecture and Urban & Spatial Planning of Serbia · National Park Djerdap

### **Associated Strategic Partners**

**Czech Republic:** Ministry of the Environment · Ministry of Regional Development of the Czech Republic

**Hungary:** Bükk National Park Directorate

**Romania:** Ministry of Environment of Romania

**Serbia:** Ministry of Environmental Protection of the Republic of Serbia

**Slovakia:** Ministry of Transport and Construction of the Slovak Republic

**Ukraine:** Ministry of Ecology and Natural Resource of Ukraine

**Austria:** Danubeparks – Danube River Network of Protected Areas

**France:** Alpine Network of Protected Areas – ALPARC

**Montenegro:** Parks Dinarides – Network of Protected Areas of Dinarides

### **Pilot Areas**

1. Piatra Craiului National Park – Bucegi Nature Park (Romania)
2. Apuseni-SW Carpathians (Romania) / National Park Djerdap (Serbia)
3. Western Carpathians (Czech Republic – Slovakia)
4. Bükk National Park (Hungary) / Cerová vrchovina Protected Landscape Area (Slovakia)

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**[www.interreg-danube.eu/connectgreen](http://www.interreg-danube.eu/connectgreen)**