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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE AND NATURAL HABITATS

Standing Committee

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REPORT ON THE FOLLOW-UP OF RECOMMENDATION NO. 25 (1991) ON THE CONSERVATION OF NATURAL AREAS OUTSIDE PROTECTED AREAS PROPER

2nd Draft

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INTRODUCTION

This analysis report is based on the country reports sent by the Contracting Parties to the Bern Convention on the request of its Standing Committee. It is part of a monitoring exercise under the Bern Convention consisting of the follow-up of previous recommendations adopted by the Standing Committee to the Convention.

National reports have been received and analysed from the following countries: Republic of Armenia, Croatia, Cyprus, the Czech Republic, France, Liechtenstein, Malta, the Republic of Moldova, the Netherlands, Norway, Poland, Serbia, the Slovak Republic and Sweden. They are compiled in document T-PVS/Files (2015) 25. The introductory report on nature conservation produced on the occasion of Belarus' accession to the Convention was used in this analysis (T-PVS/Inf (2013) 37).

For the purposes of the analysis, additional information was also considered necessary. The national CBD 5 reports have therefore been used as a replacement for those Contracting Parties, which only sent a short communication or did not answer at all to the reporting request on Recommendation No. 25 (1991). The following countries, Contracting Parties to the Bern Convention, did not produce a CBD 5 report: Georgia, Iceland, Lithuania, Portugal, Slovenia and Turkey. For these countries, the older CBD 4 reports have been used as the main source of information. However, these reports provide only restricted information on measures linked to those foreseen in Recommendation No. 25 (1991). Andorra and Greece did not produce any reports to both Conventions and have therefore not been included except for some external available information.

Next to these reports, additional sources of information have been used on conservation measures mentioned as examples in the appendix to Recommendation No. 25 (1991). This concerns actions that have not been included in the national reports because they are carried out by NGOs, are international projects or are for other reasons just outside the view of the reporting ministry or agency. These have been referred to in footnotes in the text where they have been included. Some figures have been added to illustrate activities.

1. RECOMMENDATION NO. 25 (1991) OF THE STANDING COMMITTEE TO THE BERN CONVENTION

Recommendation No. 25 on the conservation of natural areas outside protected areas proper has been adopted by the Standing Committee of the Bern Convention on 6 December 1991.

The Standing Committee concluded that protection of the highest categories - A and B categories as defined in Resolution 73 (30) of the Committee of Ministers of the Council of Europe of 26 October 1973 - may prove to be insufficient to comply with the obligations of the convention. Therefore, because of good experiences, the Standing Committee wants to bring to the attention of all Contracting Parties those forms of action that have proved particularly effective in the countries where they have been adopted. The Standing Committee recognises that flora and fauna conservation is possible only in the context of a regional planning policy conserving their environments and habitats. It therefore recommended that Contracting Parties should:

- 1. Examine the possibility, for the purpose of the Convention, of taking conservation measures such as those mentioned as examples in the appendix to this recommendation to improve conservation outside the protected areas of categories A and B of the above-mentioned Resolution (73) 30 of the Committee of Ministers;
- 2. Communicate to the Secretariat, for the information of the other Contracting Parties, any other relevant measures they have already taken or intend to take as well as any available information on the effects of measures they have taken.

In the Annex to the Recommendation, examples have been given and these have guided reporting by Parties. In this report we first elaborate on the categorisation as used in Resolution 73 (30) and

developments in this matter, after this we report on actions carried out by the Contracting Parties on Recommendation No. 25 (1991) following the Annex.

2. PROTECTION CATEGORIES IN RESOLUTION 73 (30) FOR THE BERN CONVENTION AND RECENT DEVELOPMENTS

In 1973 the Parties of the Bern Convention identified categories of protected areas based on the level of protection needed (Box 1). These categories have been defined upon criteria and both have been agreed upon in Resolution 73 (30). These criteria are:

- Scientific value, here the object is to preserve the biotope, including its flora, fauna and landscapes.
- **Traditional human activities**, being activities concerned with the exploitation of natural resources, such as biological management, agriculture, grazing, hunting, fishing, forestry and mining.
- More recent human activities, which are activities that alter an area, either partially or completely.
- **Recreational amenities** include the planning of a protected area for recreational purposes and the provision of certain amenities varying in size and nature according to frequency of use (cultural, sports and tourist facilities).
- **Public access**, at that moment seen as a problem is currently proving the most difficult to solve in many protected areas, owing to the fact that visitors to them are increasing in number but have little knowledge of conservation problems.

Box 1. Protection Categories according to Resolution (73) 30 on the European Terminology for Protected Areas (adopted by the Committee of Ministers on 26 October 1973 at the 225th meeting of the Ministers' Deputies)

In Resolution 73 (30) four categories have been defined as follows:

Category A: For this category, the only factor admissible is that of scientific value. The category would comprise areas under complete protection where all human activities are prohibited. Access is allowed only in the case of scientific research workers and requires a special permit. The sole concern is therefore the fundamental one of the protection and natural development of the various biotopes, scientific research being permitted on clearly-defined conditions.

Category B: Scientific value is again important with this category. The conservation of the natural heritage (flora, fauna, subsoil, water etc.) is compulsory in such areas, and any artificial intervention which might modify their natural appearance, composition and evolution is prohibited. However, some amenity provision is permissible in clearly-defined zones subject to strict rules. Various traditional human activities may be tolerated provided they are compatible with conservation aims. No non-traditional human activity is permissible. Visitors may be allowed to enter on condition that they comply with strict rules.

Category C: Areas would be assigned to this category mainly on account of their cultural and aesthetic value, protection of the landscape and the ecological balance being taken into consideration. However, these areas may also be of subsidiary recreational value. Traditional human activities are allowed, subject to certain rules; some non-traditional human activities are tolerated but strictly controlled. As this category is often of relevance to human recreation, some recreational provision as well as non-motorised public movement are permitted in clearly-defined zones on condition that they are in accordance with the area's aims.

Category D: The areas in this category are usually large tracts of land which are primarily intended for recreation but where the principles of nature conservation are observed. They may include natural

monuments, private estates, villages etc. Such areas are therefore primarily of recreational value (rest and relaxation) and also of cultural, aesthetic and natural value. Planning an area for recreational purposes will entail some amenity provision (for cultural, sporting and recreational pursuits). Traditional and/or new human activities are normally permitted on condition that they are compatible with the area's aims. Non-motorised public access is generally unrestricted but may be controlled in certain zones of particular interest (natural monuments, flora, fauna etc.). Motorised traffic is controlled in accordance with the aims of protection.

The first two categories (A and B) are considered strictly protected areas, the other two (C and D) to have a less strict protection status. The resolution also states that it would not be right to suppose that each of these categories is a self-contained unit, but there could be gradients between them. It is sure that there will be some overlapping among the Protected Areas categories as all Protected Areas have a history that in Europe in most cases includes traditional land use, access and amenity.

In the same period an intensive discussion was on-going on the global harmonisation of definitions of Protected Areas. Already in 1961 IUCN had published a first UN list of National Parks and equivalent nature conservation areas. An important problem in the list of IUCN was the lack of generally agreed definitions of protected areas. The discussion on this went on in the decades after and the Categories of Resolution 73 (30) are part of this global discussion. In its most recent guideline document¹ IUCN defines a protected area as "A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" and it presents six categories of protected areas (Box 2).

Box 2: IUCN definition of protected areas categories

Ia Strict nature reserve: Strictly protected for biodiversity and also possibly geological/ geomorphological features, where human visitation, use and impacts are controlled and limited to ensure protection of the conservation values;

Ib Wilderness area: Usually large unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, protected and managed to preserve their natural condition

II National park: Large natural or near-natural areas protecting large-scale ecological processes with characteristic species and ecosystems, which also have environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities

III Natural monument or feature: Areas set aside to protect a specific natural monument, which can be a landform, sea mount, marine cavern, geological feature such as a cave, or a living feature such as an ancient grove

IV Habitat/species management area: Areas to protect particular species or habitats, where management reflects this priority. Many will need regular, active interventions to meet the needs of particular species or habitats, but this is not a requirement of the category

V Protected landscape or seascape: Where the interaction of people and nature over time has produced a distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values

VI Protected areas with sustainable use of natural resources: Areas which conserve ecosystems, together with associated cultural values and traditional natural resource management systems. Generally large, mainly in a natural condition, with a proportion under sustainable natural resource management and

¹ Stolton et al (2013). IUCN *WCPA Best Practice Guidance on Recognising Protected Areas and Assigning Management Categories and Governance Types*. Best Practice Protected Area Guidelines Series No. 21, Gland, Switzerland: IUCN. 143pp. http://cmsdata.iucn.org/downloads/iucn_assignment_1.pdf

where low-level non-industrial natural resource use compatible with nature conservation is seen as one of the main aims

The basis for this categorisation has been laid in the IUCN Report on Categories, Objectives and Criteria for PAs published in 1978 as a first proposal by IUCN for a Protected Natural and Cultural Areas Classification System. It was agreed at the Second World Conference on National Parks in 1972. It contained ten categories, and it was used in compiling the 1993 UN list of Protected Areas. The categories defined by the Parties of the Bern Convention have a comparable, but broader approach. The IUCN system has been endorsed at the 7th Conference of Parties to the CBD in Kuala Lumpur (2004), where the system was accepted as a basis for reporting and recording. Governments and other relevant actors were encouraged to assign protected areas to these categories. The present system, published in 2013 and endorsed in the WPCA congress in Sydney in 2014 is based on this 1994 categorisation.

The categorisation used in Recommendation No. 25 (1991) is based on the definitions in Resolution 73 (30) and have no formal link yet with the global categorisation system. For linking the activities of the Bern Convention with global Conventions such as the CBD it might be important to develop a system for conversion or harmonisation between the different classification systems as already was initiated between national categories in Europe in the Annex of Resolution 73 (30).

IUCN also applied a typology of governance types on the management categories as a description of who holds authority and responsibility for the protected area. IUCN defines four governance types:

- **Governance by government**: Federal or national ministry/agency in charge; sub-national ministry/agency in charge; government-delegated management (e.g. to NGO);
- **Shared governance**: Collaborative management (various degrees of influence); joint management (pluralist management board); transboundary management (various levels across international borders);
- **Private governance**: By individual owner; by non-profit organisations (NGOs, universities, cooperatives); by for-profit organisations (individuals or corporate)
- Governance by indigenous peoples and local communities: Indigenous peoples' conserved areas and territories; community conserved areas declared and run by local communities.

In Europe the first three governance categories are most commonly applied and in Recommendation No. 25 (1991) the examples also refer to different government types. There are in Europe indeed also conservation areas or land that is multifunctionally used and governed by local communities or NGOs, but there is no international overview of this as these are driven by local initiatives. They are not explicitly mentioned in the reporting on Recommendation No. 25 (1991).

3. ACTIONS CARRIED OUT BY PARTIES TO THE CONVENTION

I. General measures for promoting ecological management of the environment as a whole.

In the Annex of Recommendation No. 25 (1991) general measures are elaborated as:

- 1. Projects, plans, programmes and measures with an impact on the natural and semi-natural environment to an examination of environmental compatibility with a view to protecting nature and landscapes and conserving them intact in cases where there is an overriding general interest in doing so;
- 2. The use of agricultural land and forests in a sustainable way by making maximum possible use of natural production capacities and by reducing inputs;
- 3. Encouragement of the use of environment-friendly technologies when carrying out technical operations in the natural or semi-natural environment, and replace large-scale single operations by regular maintenance measures which are more evenly distributed in time and space. If it is impossible to avoid affecting natural or semi-natural environments which are worth protecting,

ensure that mitigation measures are taken to minimise as much as possible the negative effects of the operations, to restore, or failing this, to replace them by adequate compensation.

Conservation policies have been elaborated by all countries that have sent in reports to the Bern Convention or to the CBD. A number of countries confirm that they have established network principles in their core nature conservation policy, such as France, Croatia, the Netherlands and Estonia. Most countries have included network principles in their policy, but they do not present this as their general policy. This will be elaborated further in chapter III

In all parts of Europe countries indicate to have developed procedures for EIA and SEA. This means that many have practical experience, such as indicated by among others Norway, Croatia, Malta, the United Kingdom, Poland, Portugal and the Czech Republic.

In various country reports it is indicated that biodiversity conservation is low on the list of national priorities and that the budgets for actions are insufficient. Several countries are also still in an initial phase of development of nature conservation policy and management, especially in the south-eastern part of Europe and in the Balkan. In these countries the major effort is on developing appropriate legislation and starting the integration of biodiversity issues into other national policies. These countries partly also indicate (in their CBD-5 reports) that there is a need for capacity building and support in developing a proper policy and management for the future. They also indicate that capacity building is needed in setting up a monitoring and reporting system that can meet the standards in Europe.

Expertise on systematic habitat monitoring and conversion between national systems is widely available in Europe². Therefore, these needs can partly be met if it is possible to support these countries with knowledge available through NGO's such as Birdlife International and Butterfly Conservation Europe as well as with the knowledge already existing in a number of countries in Europe on conservation planning and biodiversity monitoring such as the United Kingdom, the Netherlands, Germany, France Norway and Sweden

Land use planning and management is integrating biodiversity in many ways and not only in agriculture and forestry but also in nature restoration of former open cast mining areas and military training areas (Box 3). EU-Life projects have frequently been mentioned as important means to improve management and environmental conditions in the countryside and integrating biodiversity objectives into other policy fields by making use of local chances. This has been projects on land restoration, measures for climate change and others where technologies and social action are combined to improve climate resilience, landscape, natural habitats and environmental awareness.

Box 3: The use of Life projects in Latvia:

A good example of biodiversity conservation in defence sector is the LIFE Nature project "Restoration of Biological Diversity in Military Training Area and Natura 2000 site "Ādaži" administered and implemented by the State Agency for Defence Properties under the Ministry of Defence from 2006-2009. Project had 3 main objectives:

- Integrate nature conservation and military interests.
- Restore the Military Training Area's Natura 2000 values to, and maintain them at, a favourable conservation state.
- Educate military personnel and cooperate with military Natura 2000 site managers.

The main activities implemented during the project are:

management plan for the Natura 2000 site "Ādaži" developed and approved;

more than 1000 ha of dry heath habitat restored;

² Bunce et al 2012, *Conversion of European habitat data sources into common standards*. Alterra report 2227, http://library.wur.nl/WebQuery/wurpubs/421359

- 1400 ha cleaned up of unexploded ammunition;
- 1000 military personnel received training on nature conservation issues;
- Open-door event organized with more than 600 participants.

Not much has been reported on sustainable land use in agriculture and forestry by making optimal use of natural production capacities and by reducing inputs. In the European Union there is a process ongoing to identify High Nature Value farmland (HNVf), but this is still in a developmental phase. At the European level an indicative spatial overview is available³. Moreover, there are also technologies under development to derive national approaches, but they are at present only applied in pilots⁴. National identification of HNVf may assist countries to state priorities and to develop agricultural policies and management practices for supporting biodiversity conservation in the wider landscape. It is especially important to identify areas where agricultural marginalisation or intensification takes place. As shown in a recent pilot in Portugal agricultural statistics can be of use to determine areas where agricultural marginalisation takes place and where priority areas for rewilding might be found⁵. High level information on land use change will also become available through the recently launched European Sentinel satellites that provide freely near real time high resolution observation data on land cover. Agricultural statistics combined with detailed land cover information can be useful to guide national policies on land use and rewilding marginal agricultural lands.

In their reports on Recommendation No. 25 (1991) the countries did not systematically refer to the use of environment-friendly technologies. As Norway states most of the reports on technology are about impacts. In many instances where new technology is practiced it adds pressure on the environment, either because the technology in itself has negative environmental impacts or because it results in an increase of goods and services that have adverse impacts. However, technology can also be used in a positive way for the environment and nature friendly as is the case in the climate resilience project at Nijmegen, the Netherlands, where a new side channel is being constructed to make the Waal (the major river branch in the delta of the Rhine, with the globally highest shipping density) climate resilient⁶. The side channel is constructed for coping with higher floods in changing climate conditions and it combines river management with urban development, cultural renewal, outdoor recreation and redevelopment of river related nature (Figure 1).



Figure 1. Project Room for the River at Nijmegen, the Netherlands in design and realisation phase

It can be concluded that countries indeed do take general measures and that much expertise and experience is available in different countries, but there is not yet a balanced overview. Sharing new

³ Paracchini et al., 2008. *High Nature Value Farmland in Europe - An estimate of the distribution patterns on the basis of land cover and biodiversity data.* JRC Scientific and Technical Reports. Luxembourg, p. 87pp.

⁴ Lomba et al. 2014. *Mapping and monitoring High Nature Value farmlands: challenges in European landscapes.* J. Env Management 143:140-150

⁵ Lomba et al., 2015. A spatially-explicit framework to assess the extent of High Nature Value farmlands in the *European countryside*. Ecology and Evolution. 5(5): 1031–1044

⁶ <u>http://www.ruimtevoordewaal.nl/en/room-for-the-river-waal/</u>

technologies and following new knowledge and developments for use in policy making requires international cooperation and knowledge sharing systems.

II. Areas of Special Conservation Interest (ASCIs)

The request from Recommendation No. 25 (1991) on this issue was

- 1. Draw up a detailed inventory of areas of special conservation interest as defined in paragraph 1 of the Standing Committee's Recommendation N° 16 (1989) and ensuring the conservation and management of those areas, when it is not possible or appropriate to include them in protected areas of categories A and B;
- 2. Facilitate the acquisition and management of areas of special conservation interest by the state or other public bodies in particular by taking the following measures in respect to acquisition and management and
- 3. Facilitate the acquisition, conservation and management of areas of special conservation interest by private persons, in particular by taking the measures in the field of conservation incentives, acquisition and management.

All countries have drawn up an national inventory of Areas of Special Conservation Interest (ASCIs) as defined in paragraph 1 of the Standing Committee's Recommendation Nº 16 (1989). In 2010, the Natura 2000 network of protected areas in the European Union comprised 25 000 sites covering around 17 % of the EU land area. By the end of 2013, this had gone up to 27 000 sites or 18 % of the EU land area - more than 1 000 000 square kilometres - with a 25 % increased share of EU marine areas since 2011. In 2015, in the 16 countries outside the EU active on the implementation of the Emerald Network, candidate and adopted ASCIs cover a rough estimate of 500 000 km² for 2500 sites and an average of 11% of the territory of these countries. There are great differences between individual countries. Based on what has been reported the extent of the terrestrial ASCIs varies from less than 10% to 40.2% (Poland). There is a general bias in terrestrial ACSIs towards mountainous areas, in comparison to other potentially ecologically significant biotopes/habitats (e.g. wetlands, grasslands, riparian ecosystems, marine and coastal areas). This pattern becomes clear from the map of PEEN that includes all major nationally protected areas⁷. In the Marine realm the identification process is still on-going. For the African countries no data on protected area are available. However, the African Parties to the Convention (Senegal, Burkina Faso, Morocco and Tunisia) have an important share in Ramsar sites, which are essential wintering sites for European migratory wetland species.

The ASCIs are usually state owned land and in most countries there is a pre-emption system for the state and other public bodies. No country has reported on the transference of land to the state or in the incentives of encouragement of gifts and bequests of land. However, these systems do exist but could not be elaborated here. Several countries refer to the recent economic crisis to explain that acquisition is not possible at present.

In most of the reports to the Bern Convention as well as in the CBD reporting there is no explicit mentioning of land, that is not appropriate to be included in protected areas Category A and B but are important to be protected in another way, in particular those areas in land-use planning zones which enjoy a high level of protection as mentioned in Resolution 73 (30). However in various ways protection through planning and management is regulated. A number of countries, such as Croatia, the Czech Republic, the Netherlands, Norway and Poland mention that the system of different categories of protection has been integrated into one system. Denmark has a very small share of officially protected terrestrial sites, but most nature (waters >100 m² and other landscape elements >2500 m²) is protected through art 3 of the Danish Nature Conservation Act. This protection includes a restriction in the use of fertilizer.

⁷ Jongman et al, 2011. The Pan European Ecological Network – PEEN. Landscape Ecology.26 (3) 311-326

Management plans for ASCIs have been developed or are under development in most countries. Depending on the specific constitution, management plans for state owned reserves are developed by or under responsibility of national or regional governments. These management plans are usually restricted to the officially protected areas, while external impacts are part of EIA and SEA assessments or regulated under special management regimes. Some countries in south-eastern Europe are in need of support to develop a management system for ASCIs.

In different ways countries have taken measures to protect National Parks and Nature reserves by buffer zones with various functions and targets (e.g. outdoor recreation, hydrology, nutrients). Areas requiring that any development or activity liable to have an adverse ecological impact on those areas subject to the authorisation, consultation, or agreement of the nature conservation authorities have been explicitly mentioned by Norway. Although most countries do not report this, in many cases there are management and development restrictions in the zones around protected areas. In many EU countries management agreements are regulated through pillar II of the Common Agricultural Policy (CAP) as part of the Rural Development Programs (RDP). By some countries a zoning system has been made such as in the Abruzzo National Park, the Greek National Marine Park of the Sporades and in the French national park system (Figure 2). Within these zones development restrictions can be in force as well as a special management regime. However, as this is not reported in such a detail by the countries it is not possible to elaborate further on this.



Figure 2. The National Park of Abruzzo (I), the National Marine Park of the Sporades (Gr) and the National Park of the Cevennes (F) including the buffer zones that are part of the protected areas with a different regime.

Buffer zones relate to specific sites with particular needs. Two ideas are crucial in this context. The first is that the limitation, control or regulation of certain human activities in areas outside designated sites is essential in facilitating biodiversity within a reserve. The second is that there is a hierarchy in conservation objectives generating nested protection levels, necessary for the maintenance of the stability of the landscape as is explicitly mentioned by the Slovak Republic. The major pre-condition for the ecological stability of the landscape is the maintenance of the spatial relations between ecosystems (of various levels of stability) through a spatial system of functionally interconnected elements.

IUCN defines buffer zone spatially as a zone peripheral to a national park/reserve where restrictions are placed upon resource use or special development measures are undertaken to enhance the conservation value of the area. The World Bank has a different vision and put society central by defining it as a social agreement or contract between the protected area and the surrounding community, where size, position and type of buffer zone is defined by the conditions of this agreement. Both aspects are important as together they define the spatial, ecological and the socio-economic context of such a zone, important to manage pressure on an area for developing an optimal ecological status, but also to develop the agreement on land use with the communities living there. The ecological functions of the buffer zone should focus on the main management objective that are⁸:

• Protection, to protect from the expansion of harmful human activities,

⁸ Miklós et al. 1995. *Ecological corridors and buffer zones*. Project MN2.7, ECNC, ETC/NC.

- Interaction, to sustain positive landscape interactions,
- Diffusion, to sustain natural and man-made flows in the landscape.

The presence of a human population is implicit in buffer zones; otherwise the buffer zones would be part of the protected area. Buffer zones can therefore also be characterised as areas where land-use regulations are applied rather than as clearly defined areas with legal protection. Buffer zones are or should be designed to (1) protect local traditional land use, (2) to segregate land use such as agriculture and recreation or tourism from the core area in order to avoid adverse effects, and in this way to support direct site management, (3) manage adverse effects by putting up a barrier for immediate protection, (4) locate developments that would have a negative effect on the core area if they were situated elsewhere and (5) to set aside an area for manipulative research if needed.

The issue of acquisition of land by private persons to establish voluntary reserves is not much reported upon. However, it cannot be denied that private reserves do exist all over Europe. Belgium reported that there is about 70.000 ha privately owned land managed as nature. Finland states that voluntary conservation will be important in the period 2012-2020 to achieve a network of protected sites. They, however, foresee a financial problem. Norway explicitly states that private reserves are not an issue at present. Romania has elaborated guidelines for management plans. The Slovak Republic indicates that since 2014 private protected areas are legally possible. In the Netherlands this is possible as well since a few years and supported by the government through tax concessions and development subsidies. However, it is a minority among the European countries that report on this.

Although the countries do not report much on this, information on private initiatives for preservation of nature does exist widely. Private conservation is probably older than official nature conservation policies in most European countries. There are traditionally in Europe many large estates that are managed by their owners for their cultural and natural heritage. Some date back to the 10th century as properties of kings, dukes and counts. They are located in many countries and a selection of them is beautifully illustrated and well documented in a report that describes 61 estates in fourteen European countries⁹. Within this publication of the European Landowners Organisation (ELO) the size of the estates varies between 17 ha and 100.000 ha. They cover various landscapes and habitats, and are rich in species. They are especially important in conservation of the traditional cultural landscapes and its biological richness. Not much can be said about the general management of these lands, as it is just a selection. However, concerning the European estates. A rather recent development is that also businesses show concern about sustainability and their natural capital and they have started to include biodiversity issues in their business model such as the Heineken beer company that is in one of its site developing green industry in a biodiverse environment¹⁰.

III. Ecological corridors

The request on ecological corridors was to report how development of ecological corridors has been encouraged and, where necessary, the restoration of ecological corridors in particular by taking the following measures:

1. Rights of way of roads, railways and high-voltage lines in which emphasis is laid on agreements between nature conservation authorities and governments or other public bodies owning or responsible for such areas for preserving the sites of rare or endangered plant species and limiting the use of phytosanitary products and of fire in those areas, as well as restricting the use of machinery to the strict minimum necessary for safety reasons and taking measures to restore or to compensate for the loss of ecological corridors caused by the

⁹ Otero, C. and Bailey, T, 2003. Europe's natural and cultural Heritage, The European Estate. Friends of the Countryside, Brussels, <u>http://www.elo.org</u>.

¹⁰ http://www.groenecirkels.nl/en/Green-Circles.htm

building of new roads and other constructions that prevent animals from migrating or interchanging;

2. Water courses in which emphasis is laid on maintaining certain watercourses or parts thereof in their natural state, and where necessary restoring them, by prohibiting the building of dams, any straightening or canalisation work, providing fish passes across dams, maintaining a minimum flow in low-water periods as far as possible, limiting extraction of materials from the bed and maintaining vegetation along the banks.

Most countries have responded to the request by reporting on ecological corridors in a general way indicating that ecological networks are being developed to ameliorate connectivity between important protected areas. Therefore this section will be dealing with ecological corridors and connectivity in general in the context of ecological networks and Green Infrastructure (GI) as well as with ecological corridors to mitigate road and railway barriers and waterways as ecological corridors.

In their reports thirty four countries mention the existence of ecological networks as a policy document, or as a policy in an implementation phase. Several countries such as Macedonia¹¹, Ukraine¹² and Portugal¹³ have elaborated studies that are being seen as the basis of further planning. Four other countries intend to have an ecological network in place before 2020. This means that the policy target set out by the Council of Europe in 1995 in the Pan European Biological and Landscape Diversity Strategy to stimulate the development of the Pan European and national ecological networks (Action point 1)¹⁴ has found a good ground to grow from only three ecological networks in 1994 to a general policy approach at present. Already in 2004 many countries had developed the concept, but then mainly as policy document or legal obligations¹⁵. Now many countries have started implementation of ecological networks and corridors in land use policy to integrate ecological connectivity in road planning and river management (Table 1). The success is important as a reaction on the changing land use that has been mentioned by many countries especially in the CBD-5 reports, where explicitly was asked to indicate what has been done against ecosystem fragmentation. From some countries we did not receive information to this question, because only the CBD-4 report was available. This was for instance the case for Turkey. However also here in 2008-2009 a pilot has been carried out for the Izmir province¹⁶. Many countries also confirm that the European Union's stimulus to develop Green Infrastructure (GI) has helped them to develop plans, incentives and actions. The first objective of the EU Green Infrastructure (GI) initiative is to enhance, conserve and restore biodiversity by inter alia increasing spatial and functional connectivity between natural and semi-natural areas improving landscape permeability and mitigating fragmentation¹⁷. Movement between habitat patches appears to be approximately 50% greater if corridors are in place compared to patches that are not connected by corridors. The beneficial impact of corridors varies from species to species, for example, a literature survey conducted by Alterra in the Netherlands found that from 18 species of butterflies, mammals and amphibians, nine are strongly dependent on corridors¹⁸. In the discussion on the PEEN¹⁹ it is suggested that there is a need to quantify the economic benefits of

¹¹ Brajanoska et al 2009, *Background Document on Ecological networks Project: Development of the National Ecological Network in Macedonia (MAK-NEN)*. MES, Skopje and ECNC.

¹² Movchan, Y., 1998, *Establishment of the Galytsko-Slobozhansky Ecological Network as an Element of EECONET*, Committee of Experts for the development of PEEN, Strasbourg.

¹³ Raposo Magelhães, M. 2013. *Estrutura Ecológica Nacional, uma proposta de limitação e regulamentação.* Instituto Superior de Agronomia, Lisboa.

¹⁴ Council of Europe, UNEP and ECNC, 1996. *The Pan European Biological and Landscape Diversity Strategy*. A *vision for Europe's natural heritage*. Council of Europe (in English, French and Russian).

¹⁵ Jongman et al, 2004. European ecological networks and greenways. Landscape and Urban Planning, 68:305-319

 ¹⁶ Hepcan et al., 2009. Ecological networks as a new way to nature conservation in Turkey; a case study for Izmir province. Landscape and Urban Planning. 90 (3/4):143-155
¹⁷ DC Environment 2012. The M. Miller of A. Starting and Startin

¹⁷ DG Environment 2012. *The Multifunctionality of Green Infrastructure*. Science for Environment Policy, In-depth Reports.

¹⁸ Vos, et al, 2005. *Robuuste Verbindingen (Robust corridors)*. Wageningen: Alterra Report 1206, <u>http://www2.alterra.wur.nl/Webdocs/PDFFiles/Alterrarapporten/AlterraRapport1206.pdf</u>

¹⁹ Jongman et al, 2011. *The Pan European Ecological Network – PEEN*. Landscape Ecology.26 (3) 311-326

ecological networks and make them explicit through interdisciplinary research on the social, economic and ecological mechanisms that maintain biodiversity and its ecological services. It is one of the biggest challenges faced by PEEN and national ecological networks to develop a common approach among over 100 European-wide agencies that are responsible for biodiversity conservation to share regionally developed experiences.

In a comparative study on the development of ecological networks in Poland, Slovakia, Hungary, Croatia, Ukraine and Belarus Simeonova et al²⁰ conclude that most countries have established a strong legal basis to regulate planning and implementation of the ecological networks by embedding ecological networks in legislation at the national level. Some have developed as well strategic policy documents dedicated to prioritisation of measures for ecological networks development. A legislative approach is often used by the national governments to comply their policy with European and International legal agreements on biodiversity conservation; a strategic approach is used to guide the implementation process of this policy. Implementation requires consideration of regional and local cultural values influencing decision-making in each individual country.

The ecosystems of Europe are strongly fragmented²¹. Corridors are essential parts of ecological networks as they link the core areas in the network. The planning and implementation of corridors require especially a long term vision for conservation measures that must be integrated in a spatial planning and landscape context, knowledge on species traits, and essentially, also cooperation between regions and across national borders. An important cultural and ecological corridor in Europe is the European Green Belt²² that forms a natural and cultural corridor through Europe where once the iron curtain was. Several countries and NGOs report on their active participation in this process²³. The European Green Belt connects in total 24 countries and the initiative was born in 2003, when various existing regional initiatives merged into one European movement. It is a living example of how biological diversity goes hand in hand with cultural diversity. It is considered as a symbol for transboundary cooperation for Europe's shared natural and cultural heritage.

²⁰ Simeonova et al, 2009. Implementation of ecological networks in different socio-economic contexts; guiding principles based on experiences in Central and Eastern Europe. Wageningen, Alterra Report 1896, http://www2.alterra.wur.nl/Webdocs/PDFFiles/Alterrarapporten/AlterraRapport1896.pdf

²¹ European Environmental Agency, 2011. Landscape fragmentation in Europe. Joint EEA-FOEN report 2/2011

²² http://www.europeangreenbelt.org

²³ Engels et al, 2004."Perspectives of the Green Belt" Changes for an Ecological Network from Barentz Sea to Adriatic Sea? BfN Skripten 102

Country	ecological corridors/network	road crossing projects	stream connectivity
Albania	PEEN, European Green belt		
Andorra			
Armenia	East Lesser Caucasus Corridor		
Austria	European Green belt	Karpaten-Alps corridor.	Lower Morava Floodplains
Azerbaijan			
Belarus	National Ecological Network		
Belgium	The Flemish ecological network (FEN) of protected areas supported by an `Integral Interweaving and Supportive Network' (IVON).		
Bosnia and Herzegovina			
Bulgaria	NEN under development	Kresna Gorge Tunnel to be started in 2016 as part of Struma motorway (A3) between Pernik and the Greek border.	
Croatia	CRO-NEN and N2000 network	Dedin green bridge	
Cyprus			
Czech Republic	The Territorial System of Ecological Stability of the Landscape (TSES) has been developed since the 1990s.		
Denmark		Establishment of fauna passages under roads may be required in EIA procedures for roads protecting endangered species	
Estonia	National green network		
Finland			
France	The Trame Vert et Bleu is to preserve biodiversity, restoring good natural environments networks or "ecological continuity.		
Georgia	The first priority ecological corridors have been revealed and planning documents for two have been developed.		
Germany	The Bundesländer are obliged by the federal Nature Conservation Law to establish ecological networks. Most are established. There is national cooperation.	Re-networking measures are planned in places where federal highways are causing significant fragmentation of the network of habitat corridors.	Measures are taken to restore river continuity at regional national and international level.
Greece			

Table 1. The use of ecological corridors, ecological networks in general land use policy, in road planning and river management by the Contracting Parties and observers to the Bern Convention.

Hungary	The backbone of green			
	infrastructure is the national			
	ecological network.			
Iceland				
Ireland	In 2012 in 94 provinces plans are operational with explicit reference to ecological networks			
Italy	Regional ecological networks have been developed in several region throughout the country.			
Latvia				
Liechtenstein				
Lithuania	National Nature frame developed in the 1990s and further elaborated in recent years	Until 2009, 9 tunnels for large animals and 11 tunnels for small animals were built.		
Luxembourg	The green-and-blue frame is developed as a coherent network of protected areas to ensure genetic exchange, and good ecological functioning.			
Malta	The system of dry stone walls serves as ecological corridors for terrestrial reptiles and for shrews.		Statutory protection of valley systems as natural hydrological pathways	
Republic of Moldova	Intention to create a National Ecological Network (NEN) by 2018.			
Monaco				
Montenegro				
Netherlands	The government continues to develop the National Ecological Network (NEN) as the most important remedy to stop biodiversity loss.	The target of the multi- annual defragmentation programme (MJPO) has identified 215 obstacles caused by national infrastructure that should be eliminated by 2018 at the latest. Since 1988 there are now at least 47 ecoducts crossing motorways and numerous ecological culverts.	Measures are taken to restore river continuity at regional national and international level.	
Norway	Corridors to improve dispersal between protected areas have been identified for protected freshwater, mire, forest and mountain areas.	Reindeer protection plans will have a special focus on the protection of migration corridors between seasonal habitats, both within and between different wild reindeer areas.		

Poland	The project "Biodiversity	Environmental impact	There are projects on	
Tolulla	protection through the	assessment includes	improving functions of	
	establishment of a network of	massures as animal	the river corridors, such	
	establishment of a network of	measures as annual	a Destantion of	
	windlife corridors in Poland Is	migration passages for	as "Restoration of	
	being implemented in 2014-2016.	infrastructure	wildlife corridor	
		constructions and fish	connectivity in the	
		ladders.	Biala Tarnowska River	
Portugal	Regional plans have been			
	developed for Lisbon, Porto and			
	Coimbra. A national plan for an			
	ecological network has been			
	developed in 2013 (NEN).			
Romania	Progress has been achieved in			
	expanding the National Ecological			
	Network of protected areas			
	including Natura 2000 sites and			
	improving their management			
Duccion	Feelogical networks have been			
Federation	developed in general regions and			
rederation	ablests through all the Dussian			
	oblasts through all the Russian			
~	Federation.		-	
San Marino				
Serbia	European Green Belt, development			
	of an Ecological Network for			
	Serbia and PEEN SEE, in the			
	connection with ecological			
	networks of neighbouring			
	countries.			
Slovakia	The TSES has been developed	Green infrastructure	Green infrastructure	
	since the 1990s, Green	including ecoducts to	including water courses	
	infrastructure is one of the top	eliminate impact of	is one of top	
	biodiversity priorities for 2014-	transport infrastructure is	biodiversity priorities	
	2020	one of top biodiversity	for 2014-2020	
	1010	priorities for 2014-2020	101 2011 2020	
Slovenia				
Spoin	Feelegical networks have been	A national working group		
Span	developed at regional level in	has developed techniques		
	uevelopeu al regional level in	for the design of within		
	various autonomous regions	for the design of wildlife		
	(Basque country, Andalucia,	crossings and guidelines		
	Madrid, Catalunya)	to reduce the effects of		
		roads and railways.		
Sweden	The Swedish County			
	Administrative Boards (regional			
	authorities) are to produce regional			
	green infrastructure plans before			
	2017.			
Switzerland	The second goal of the Swiss	Ecological corridors are	Measures are taken to	
	Biodiversity Action Plan is: "By	being developed to	restore river continuity	
	2020, an ecological infrastructure	circumvent road barriers	at regional national and	
•	consisting of protected and		international level.	
	connected areas is developed".			

"the former	PEEN-SEE was a tool for the	The building of green		
Yugoslav	development of the National	bridges has not been		
Republic of	ecological network (MAK-NEN).	foreseen in infrastructure		
Macedonia"	Corridors are incorporated for the	plans		
	Brown Bear in 2011.			
Turkey	A pilot study on ecological			
	networks and its relation with			
	technical infrastructure for the			
	province of Izmir in 2009.			
Ukraine	The country will define			
	representative and interconnected			
	nature protection territories by			
	2020, covering at least 17% of land			
	and inland waters and 10% of			
	coastal and marine areas.			
United	SNH developed a forest habitat	The first green bridges	Several river agencies	
Kingdom	network for Scotland in 1995. The	have been constructed.	and NGOs are working	
	Scottish Biodiversity Strategy	Studies have been carried	on the restoring of	
	intends to develop a national	out on mitigating effects	rivers as ecological	
	ecological network. Several	of green bridges in road	corridors.	
	counties in the UK have developed	infrastructure.		
	regional ecological networks.			
European	Developing trans-European			
Union	priority axes for GI would have			
	significant benefits for securing the			
	resilience and vitality of some of			
	Europe's most iconic ecosystems,			
Burkina Faso				
Morocco				
Senegal				
Tunisia				

Roads, Highways and High voltage lines

Motorway crossing for species has become an important issue in all European countries. About 50% of the country reports to the Bern Convention and to the CBD (CBD-5) refer to initiatives or the need to develop initiatives at larger or smaller scale. For the integration of GI and large-scale infrastructure the European Union has been instrumental but until now only on a case by case basis. The EU presents the opinion that as large-scale infrastructure initiatives have been devoted to transport and energy, the development of an equivalent instrument, the trans-European priority axes for GI, is to be considered to have significant benefits for securing the resilience and vitality of some of Europe's most iconic ecosystems, with consequential social and economic benefits. Such initiatives can also act as flagship initiatives and serve as examples at national, regional and local levels to boost the importance of trans-European GI in policy, planning and financing decisions. Member States and regions are asked to develop GI in a cross-border/transnational context through the macro-regional strategies and through European territorial cooperation programs²⁴. At present the national initiatives vary between countries from expression of the need for GI and stating the problem (e.g. Macedonia, Czech Republic²⁵, Bulgaria²⁶) to

²⁴ European Commission 2013. Building a Green Infrastructure for Europe. Luxembourg, doi: 10.2779/54125

²⁵ Andel et al, 2005. Assessment of Landscape fragmentation caused by traffic. Agency for Nature Conservation and landscape protection of the Czech Republic.

²⁶ Van der Grift et al, 2008. Restoring ecological networks across transport corridors in Bulgaria. Identification of bottleneck locations and practical solutions. <u>www.roadecology-bulgaria.com</u>

working groups working on ways to solve them (e.g. Spain, Norway) onto real implementation of corridors (e.g. the Netherlands, Germany, Austria, Slovakia). Implementation of fauna bridges and tunnels depend on willingness of sectoral (transport) policy makers and planners at national level to consider biodiversity as an important and valuable issue at national and international level. In some countries this change in perception and willingness to invest has been reached and solutions are being elaborated jointly by road planners, spatial planners and conservation planners. In many other countries the issue of biodiversity and road crossing is still considered as conflict between government departments and NGOs. In the Austrian CBD-5 report the Karpaten-Alpen²⁷ corridor is elaborated as an important European



wildlife corridor system (Figure 3). It ensures the migration and genetic exchange between wild animal populations between Slovakia and Austria, to foster trans-sectorial activities for securing ecological networks and to strengthen awareness of the importance of undisturbed green areas and eco-friendly land consumption.

Figure 3. Location of the Karpaten-Alpen corridor between Alps (lower corner left) and Carpathians (upper corner right). The squares indicate fauna bridges over major roads.

In Croatia the highway from Zagreb to Rijeka stretches 68.5 km through a wildlife core area in Gorski Kotar. It has a 100 m wide green bridge at Dedin (Figure 4). Here on average 15.8 wildlife crossings (among others brown bears) per day have been counted²⁸. The wildlife bridge has been realised with support of the European Union and benefits road transport, human health and wildlife conservation.



Figure 4. The Dedin wildlife crossing, motorway Rijeka-Zagreb.

In the 22nd Standing Committee meeting of the Bern Convention²⁹ the issue of biodiversity conservation and ecological connectivity versus road connections has been discussed concerning the Struma Motorway through the Kresna Gorge in Bulgaria. As a result of a long political discussion at all levels, the Kresna Gorge Tunnel is now planned as an over 15 km long twin-tube tunnel, carrying two traffic lanes in each direction as part of Struma motorway (A3) between Pernik and the border to Greece. It is important to realise that the

main reason to build this motorway in a tunnel of such length is to protect the exceptional environment and biodiversity in the Kresna Gorge. Its construction is expected to begin in 2016^{30} .

The Netherlands has set up a multi-year defragmentation programme (Meerjarenprogramma Ontsnippering or MJPO) that has identified 215 obstacles caused by national road, rail and water infrastructure. The target of the programme is to eliminate these obstacles by 2018 at the latest. Efforts to eliminate them involve measures like green bridges, wildlife underpasses, eco-culverts, wildlife overpasses at tree crown level and hop-overs (Figure 5). By 1 January 2013, about 32% of the 215 obstacles in the Dutch National Ecological Network caused by national infrastructure had been completely

²⁷ www.alpenkarpatenkorridor.at/

²⁸ Kusak et al, 2009. The permeability of highway in Gorski kotar (Croatia) for large mammals. Eur J Wildl Res 55:7–21, DOI 10.1007/s10344-008-0208-5

²⁹ Construction of a Motorway in the Gorge of Kresna - Corridor No.4 of transport: EU PHARE Project Connection Bulgaria – Greece (E79: Sofia-Kulata) Standing Comm. 22nd meeting, File (2002) 25)

³⁰ <u>http://www.ncsip.bg/en/index.php?id=16</u>

eliminated, while 26% had been partially eliminated. For 29% the defragmentation process still had to get started. For supporting the design of fauna crossings there is a special guidance document³¹



Figure 5. Motorway and fauna crossings in the Netherlands, from design to realisation

It would be important to share the knowledge on redevelopment of ecological connectivity between countries and between organisations. It is possible to exchange experiences between countries on the planning process of motorways and the construction of environmentally friendly constructions that allow wildlife to cross. UNEP-WCMC is initiating a database of best practices of ecological connectivity³². Contribution to this database by governments, research organisations, NGOs and companies with experience in this field would support the developments in Europe strongly.

Water courses

The country reports are much less elaborated on watercourse connectivity than on motorways. However, a lot has been done and experience has been developed in many countries as becomes clear from the reporting as well as from external sources. For larger rivers restoration projects are complex to develop as many rivers are country or regional borders or are border crossing and therefore require interregional and international cooperation between differently organised water agencies. The consequence is that setting up projects is complex, due to different project funding, decision making and management coordination. Most country reports identify the problems that exist in connectivity along river and in river floodplains. In the EU Water Framework Directive (WFD) as well as in many country reports defragmentation of rivers is an important target for the conservation of aquatic species, in particular fish. For instance, in 1996, Benelux countries announced their intention of achieving free fish migration in all water catchments by 2010. In Belgium and the Netherlands this has not yet been realised, while Luxemburg does mention that in the 1990s multiple projects have been carried out leading to a more continuous water system. It does not make clear if the target has been reached. The Czech Republic mentions the existence of 6,000 transverse barriers across rivers in the country. Germany mentions actions that are taken by Bundesländer; however, there is no national overview yet. Hungary reports the disappearance of six fish species in its rivers due to damming of the Danube. Moldova announces agreements with Romania and Ukraine for the restoration of joint river systems. In Poland most rivers are national rivers and there are a few projects on improving functions of the river corridors by regional water and environmental authorities. Most projects are co-financed by the EU. Also in the UK rivers are national and river connectivity can be solved by UK organised projects such as the revitalisation of the Tweed catchment for the salmon by the Tweed water authorities and the Tweed Foundation³³ boosting its Salmon population as well as regional tourism for salmon fishing (Figure 6).

³¹ Rijkswaterstaat 2005. Leidraad faunavoorzieningen bij wegen.

³² Strengthening biodiversity conservation at a landscape and seascape scale – towards UNEP's Global

Connectivity Conservation Strategy" – UNEP POW 2015-2017.

³³ <u>http://www.tweedfoundation.org.uk/</u>



Figure 6. The Ettrick river in the Tweed basin in Scotland made accessible for salmons to spawn upstream.

The European Life and Interreg funding mechanisms are frequently used to set up river restoration projects. Life projects can include cooperation between regions, but are mostly organised within one country or region, while Interreg projects are by definition cooperation projects between regions. An example of Life projects is given by Austria. Within the "Restoration of the Lower Morava Floodplains" Life+ project, ambitious

restoration measures are being implemented between 2011 and 2017 to restore near-natural river dynamics in the Lower Morava floodplains as well as to foster land-use that preserves biodiversity and specifically endangered species and habitat types. And although the river is the border between the Slovak Republic and Austria, this is not Slovak-Austrian cooperation, but an all-Austrian project³⁴.

International rivers are difficult to manage as they require international agreements. The International Commission for the Protection of the Rhine (ICPR) is the oldest organisation for international river management cooperation in the world and an example for many other committees, also on other continents. One of the projects that it has started is to restore the ecological river corridor of the Rhine and it has taken the salmon as its symbol and target species to be back in 2020³⁵. This project for accessibility of the river Rhine requires international political agreements on making the river accessible through among others fish ladders and other passages, long term projects of locks and weir adaptation, until the final step of the improvement of exchange between river system and the North Sea. This project is, of course, not only important for the salmon, but also for other migratory fish such as eel, sturgeon and shad.

At a less complex scale also regional authorities cooperate in providing network connectivity in rivers as in the Interreg financed TEN project in 2004. In this project Norfolk, Suffolk (UK), Groningen, Drenthe and Overijssel (the Netherlands), Niedersachsen and Bremen (D) cooperate to redevelop aquatic connectivity along rivers and between wetlands. The focus of the cooperation is to exchange experiences and knowledge as well as to actually realise river corridors. One of the problems with this kind of projects is that the experience and the results disappear easily at the moment that the internet site of such a project cease to exist. The UNEP-WCMC database of best practices of ecological connectivity might become a solution to overcome this problem.

IV. Habitat types

On important European habitat types three related questions have been asked. The first one is how the conservation of endangered habitat types such as wetlands, heathlands and dry grasslands has been ensured by requiring that all projects liable to cause their deterioration or destruction be subject to the permission (or agreement) of the authority responsible for nature conservation. The second one follows on this and asks if permission, once it has been granted, was subjected to an obligation, where appropriate, to take suitable compensation measures. The third question asks to report if a system of management agreements had been set up, together with financial incentives, to provide for the management of certain habitat types, whether or not they are protected.

The issue of habitat conservation is much related to the EU obligation in the Habitats Directive to identify and protect priority habitats. Conclusively, the answers from EU member countries are always a reference to priority habitats. Some countries that are EU candidate members already refer to this obligation in the Habitats Directive. This is of course not the case for the non-EU members without a candidate status.

³⁴ www.life-march.at

³⁵ http://www.iksr.org/fileadmin/user_upload/Dokumente_en/rz_engl_lachs2020_net.pdf

In general there is in the country reports attention for the conservation of endangered habitat types, especially because this is the way to also protect the species that use them. Often it has been indicated that endangered habitat types are protected, without explaining what the type of habitats these are, mainly because of the many habitats and habitat types that are protected. For instance, Belarus protects 1400 habitats for rare animals and 1200 for plants, but it is not referred to in list, which habitats these are. Many countries have red data books on habitats with categorisation of their status in threat categories, such as Bulgaria. Other countries have made inventories or have carried out habitat mapping projects covering selected parts of the country.

For the terrestrial domain the categories of habitat types that are mentioned are most frequently seminatural, dry and wet grasslands; karstic habitats and caves are especially mentioned in the Balkan region as important habitats of endemic species. In the Baltic region and Scandinavia bog and mire habitats as well as alvars and tufa springs are mentioned. The United Kingdom and Ireland add blanket bogs to the above mentioned bog types. In mountainous countries such as Georgia high mountain vegetation is emphasised, in many country reports wetland and marsh habitats are mentioned as endangered. Ireland identifies limestone pavements, turloughs and machairs. Latvia stipulates the importance of nesting sites of birds such as the black stork and the lesser spotted eagle. For Macedonia next to wetlands the habitats of major importance are the tectonic lakes and the many small glacier lakes.



Figure 7, Examples of important and endangered habitat types, dry steppe grassland (Puszta), a karstic cave and a turlough.

In the coastal and marine realm coastal wetlands such as the Dutch-German Danish Wadden Sea are indicated as important and partly endangered. In many countries dune habitats are endangered especially by touristic developments. Further are mentioned the Posidonia habitats, corals and marine caves. Kelp forests (large marine algae on average 5 m long but also up to 50 meters tall, Figure 8) are not mentioned in the country reports, but are globally recognised as an important marine cold water habitat that requires protection. Currently, only Britain's underwater kelp forests cover about 40,000 km² of ocean floor; more than double the area covered by woodland found ashore. They fulfil an important function as marine habitat for many fish species and therefore are important for biodiversity as well as for fisheries. Many species of flora and fauna find shelter, food and surfaces for attachment on the kelp and the surrounding rocky substrate. In many cases the status of these of Kelp forests is unknown. They are occurring in the Atlantic Ocean from Morocco, Portugal to northern Scotland, around Iceland and in the Northern coastal waters from Spitsbergen to Murmansk³⁶. Decline of kelp forests will have a major impact on the survival



of life in sea including a number of fishes that are fished commercially. It is expected that the combined effect of rising temperatures and acidity will completely alter these marine communities.

Figure 8. Kelp Forest

The second question, if permits to use the habitats are subject to an obligation, where appropriate, to take suitable compensation measures has not much been answered and needs further elaboration. Latvia has put its microhabitats under a special

³⁶ http://www.ukmarinesac.org.uk/communities/infralittoral/ik1_2.htm

protection regime, but does not reveal if these habitats can be used and if compensation measures should be taken. The Netherlands is the only country reporting that it protects in its Flora and Fauna Act not only about 500 species but also the area they live in: their nesting, resting or feeding places. These sites are protected also outside the protected areas. When there is no alternative for activities that destroy these nesting, resting and feeding places, mitigation and compensation measures might be in order before dispensation is given. It also indicates that measures are taken to protect natural values on around 60.000 hectares of agricultural land; mostly nesting and rearing places for meadow birds such as Black-tailed Godwit (*Limosa limosa*) and Lapwing (*Vanellus vanellus*). Despite these measures formally taken, the population of most meadow birds is still declining³⁷. Other countries did not reply to this request and therefore it is not possible to elaborate this further here.

The request concerning the system of management agreements and its financial incentives for the management of certain habitat types, whether or not they are protected has been replied to by a restricted number of countries. EU countries refer often to Agri-Environmental management schemes (RDP). In Austria on about 10% of the agriculturally utilised area, measures are being carried out with the help of subsidies to safeguard the diverse appearance of the cultivated land and the cultural characteristics of the countryside. In the course of the programme period, the land area involved in nature conservation measures increased. Also Estonia, Germany, Ireland, Poland and Spain, protect these features through subsidies via the Rural Development Programs (RDP). In Switzerland direct payments exist for seven specific services among which the conservation of biodiversity. In Norway specific protection of species, identification of species as priority species and protection of habitats are used as a set of tools to succeed in the protection of threatened species.



Figure 9. Matsalu, Estonia, a river delta habitat and Ramsar site, N2000 site and National Park is an important migration site for cranes, consisting farmland with coastal grasslands, sea and islands. The information poster explains this and is signed by the Tuuliku farm family.

V. Landscape features

The item on landscape features is important but complex. Not all countries replied in the same way. Moreover this kind of issues are more complex to extract from the CBD 5 and CBD 4 reports as this is not an

explicit issue in the CBD targets. However, it is possible to sketch an overall, although incomplete, picture of the situation in Europe.

The request was to encourage the conservation of landscape features such as streams, ponds, small woods, individual trees, hedges and natural grassland, in particular by taking the following measures:

- 1. Drawing up in each municipality an inventory of landscape features which should be preserved;
- 2. Taking these features into account in the preparation or revision of land-use plans by including them in zones enjoying a high level of protection;
 - Setting up a system of management agreements for the preservation and, where appropriate, the management of the landscape feature thus protected;

³⁷ <u>http://www.compendiumvoordeleefomgeving.nl/indicatoren/nl1183-Aantallen-weidevogels.html?i=4-27</u>

4. For each agricultural production unit, establishing, in agreement with the farmer, a conservation plan comprising:

In the case an agreement with the farmer does exist further detailing is asked for as:

- a. An ecological analysis of the unit;
- b. A map of landscape features and natural areas to be conserved and, where necessary, restored or reconstituted;
- c. Practicable and advisable « extensification » methods;
- d. Setting aside certain plots of land, where appropriate, selected on the basis of an ecological study;
- e. A management agreement specifying the results to be achieved, the means needed to achieve them and the amounts to be paid to the farmer by way of compensation or remuneration for services rendered.

Many countries provide information that can be used in this overview. However, landscape features are also a multi-interpretable issue that can lead to heavy discussions within countries as they might be a cause of heavy conflicts between economy, culture and nature.

Municipal inventories are not carried out in the countries as far as can be judged by the reports. The main reason is that this is rather costly and time consuming despite the probably valuable results. In the present period of recession and low economic growth, budgets for these kind of actions are under pressure. Denmark is the only country with a legal obligation to protect small biotopes (par. 3 of the Nature Conservation Act). At present inventories are being made at the municipal level to identify the need for active management to improve nature and biodiversity. There are ongoing actions in other countries, such as in Belgium, where both Walloon and Flanders do have a detailed but differently organised inventory. The Netherlands has started an inventory at the municipal level, but it has been stopped recently for budgetary reasons. The Czech and the Slovak Republic have developed their Terrestrial System for Ecological Stability (TSES) that might provide the required inventory. For Portugal, Norway, Slovenia, Germany initiatives are mentioned, but these are not further elaborated. Some other countries indicate that they are just at the brink of organising an approach, such as Moldova and Bulgaria. Norway indicates that a national mapping system is under development that potentially could be used for this purpose.

Sweden and the UK do not mention respectively their NILS program³⁸, the Countryside Survey of Great Britain³⁹ and the Northern Irish Countryside Survey⁴⁰. Despite that these monitoring schemes do not give a full coverage the three comparable stratified sampling systems, they do provide cost-effective and statistically reliable information on landscape features and development trends for the whole country. The results of the Countryside Survey of Great Britain have already been used successfully in regulating effectively legal protection for hedgerows⁴¹.

Taking these features into account in the preparation or revision of land-use plans by identifying zones enjoying a high level of protection is an issue less frequently answered. Several countries, such as Belgium, Croatia and Norway, indicate that more biodiversity issues have been included in physical planning procedures or that specified actions have been set up. The Czech Republic gives a mixed picture by indicating that parts of the TSES are being implemented, but also that the international elements are not further elaborated. This is comparable with France where the Trame Vert et Bleu has its objectives targeting national and regional planning. In Germany the situation is different for the various Länder, but there is also a development at the municipal level (Municipalities for Biological Diversity). In other

³⁸ http://www.slu.se/en/collaborative-centres-and-projects/nils/

³⁹ http://www.countrysidesurvey.org.uk/

⁴⁰ http://www.doeni.gov.uk/niea/biodiversity/nh-research/nicountrysidesurvey-2.htm

⁴¹ Haines-Young et al, 2000. Accounting for nature: assessing habitats in the UK countryside. DETR, London

countries, such as Finland and Malta emphasis is laid on research and study that has to be done before action can be carried out. Ukraine has a program of four action points to develop a better balanced development towards 2025.

In the EU important support mechanisms in this field are the agricultural subsidies through RDPs and the Life project financing. LIFE — the financial instrument for the environment — is the only EU financial instrument fully dedicated to the environment. The budget for the 2014-2020 funding period is € 3.4 billion. LIFE Nature & Biodiversity in particular and LIFE Information & Governance take into account biodiversity questions such as ecosystem and habitat restoration. However unlike agricultural subsidies Life funding is restricted to short periods and for specific projects.

Setting up of a system of management agreements for the preservation and, where appropriate, the management of the landscape feature thus protected is differently organised inside and outside the European Union. The reforms of the EU Common Agricultural Policy (CAP) aims at reducing support that has a negative environmental impact, whilst rewarding practices that deliver public goods, including biodiversity. Under the CAP in the period 2007-2013, progress has been made in conserving and restoring biodiversity and ecosystem services in the countryside as a whole. During this period, funding through RDPs under the policy's second pillar provided the principal means of supporting biodiversity protection, management and restoration measures in agricultural and forest habitats. Many EU member states indicate that they have actively participated and that financial support is given to overcome the relevant prohibitions and restrictions that farmers incur in the common agricultural land as well as in specific protected areas, for keeping the land in good agricultural and environmental condition and comply with the legal management requirements. It is Axis 2 that aims at enhancing the status of biological diversity, protection of water and soil and adaptation to climate changes. Switzerland and Liechtenstein have their own comparable regime: the Proof of Ecological Performance (PEP) that requires a minimum share of ecological compensation area, a balance of nutrients, regular crop rotations, compliance with water protection requirements, and soil conservation measures. In Norway national and regional environment programmes established in the agricultural sector aim to fulfil the sectors responsibility in reducing negative effects of agriculture on the environment and safeguard cultural landscapes. The increase in funding regime has led to a more precise targeting of agricultural environmental funds to areas most valuable to biodiversity.

Two new 'CAP reform' regulations — establishing rules for direct payments to farmers under support schemes within the framework of the CAP, and on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) — apply from 1 January 2014 to 31 December 2020. A direct payments system for farmers replaces the Single Payment Scheme. A key change is that 30 % of the direct payments are dependent on meeting certain 'greening' requirements relating to environmental measures that go beyond cross-compliance, namely: crop diversification; permanent grassland; and ecological focus areas. The EAFRD is implemented in shared management between the Member States and the EU. This means among others that the payments system is under responsibility of the Member States.

Finally, a restricted number of countries refer to establishing for each agricultural production unit in agreement with the farmer, a conservation plan. However this has in most cases not made concrete. Some refer to HNV farming, others to the existence of specific local programs on good agricultural practices and management of landscape elements.

VI. Ecologically sensitive areas

Under this heading it has been requested to report on special regimes applicable to certain areas requiring specific measures on account of their ecological vulnerability and the various kinds of pressure to which they are exposed. This concerns coastlines and adjacent marine areas, mountains, flood plains and forests.

1. Coastlines and adjacent marine areas

This request is in this case further specified as:

- a. Setting up legal regime for natural areas in the public maritime domain which takes account of the need to preserve the natural habitats comprising them and which regulates activities liable to affect them adversely;
- b. Instituting binding land-use plans for marine areas which are of special ecological interest or require special protective measures on account of their vulnerability;
- c. Adopting special planning regulations prohibiting or limiting new development, especially the building of roads, on the coastline;
- d. Protecting landscape features and habitats characteristic of coastal ecosystems, such as dunes, beaches, cliffs, wetlands, salt marshes and woodlands, by including them in land-use planning zones enjoying the highest level of protection;
- e. As far as possible, eliminating the difficulties due to the division of powers between different government agencies on either side of the upper limit of the public maritime domain by setting up a co-ordinating mechanism allowing for the management of the coastline and the adjacent marine areas, particularly protected ones, as a single unit.

Not all countries have an explicit marine policy or planning system, but at least for several seas there is international cooperation and coordinated action. Several seas as well as the Atlantic Ocean are bordering European countries. We do not use the OSPAR⁴² regionalisation as this is restricted to the marine waters western and northern of Europe and excludes the African coast. The Arctic region has not been considered in this report. The Russian Federation, Norway and Iceland and Denmark are countries with direct interest and influence, but they have not reported separately on this. The nature conservation issues for this part of the world are handled by the Arctic Council⁴³ and conservation actions and biodiversity monitoring specifically are carried out are by Conservation of Arctic Flora and Fauna (CAFF)⁴⁴.

The Atlantic Ocean is shared by the following Parties to the Bern Convention: Senegal, Morocco, Portugal. Great Britain, Spain, France, Ireland, Iceland and Norway. Senegal, an important country for European waders and wetland birds, has lost 2,400 ha of mangrove between 2000 and 2005. Coastal erosion is an environmental phenomenon that continues to grow in Senegal. This erosion is such that the trend is now a decline of the coastline from 1 to 1.30 m/year on average. Morocco is developing an integrated management system for its coastal areas. Portugal has set the first steps towards conservation and management measures for the marine environment, specifically through the implementation of the National Strategy for the Seas (ENM) that is carried out by an Interministerial Commission for Sea Affairs (CIAM) in the context of the National Program "Planning and Use of Maritime Space", the Maritime Areas Spatial Plan (POEM). The Network of Marine Protected Areas (MPA) is part of this and incorporates the marine counterpart of continental Protected Areas. France also develops a strategy of integrated development and management by (a) the establishment of a legal regime for natural maritime public domain, taking into account the need to preserve the natural environment; (b) the adoption of special planning rules prohibiting or restricting the construction and installation works on the coast and the inclusion in the areas of planning enjoying a high degree of protection; (c) the deployment of additional instruments for the creation of protected areas; (d) promoting integrated management of the coastline; (e) looking for coordinated management of the coastline and adjacent marine areas through the Marine Framework Directive.

Ireland is aware of the importance of its marine environment. In 2006 it announced the conservation of four marine SACs and is working on methods for a comprehensive assessment of the status and condition of intertidal areas. The Atlantic Ocean south and north of Great Britain are characterised by south-western, temperate-water communities and north-eastern, cold-water communities respectively. 75% of the Welsh coastal waters are of European importance. The UK is currently working to achieve and

⁴² <u>http://www.ospar.org/</u>

⁴³ <u>http://www.arctic-council.org/index.php/en</u>

⁴⁴ <u>http://www.caff.is/</u>

maintain 'Good Environmental Status (GES)' in UK marine waters by 2020 as part of the requirements under the European Marine Strategy Framework Directive (MSFD). Most of the marine fisheries management areas within the EEZ of Iceland are set up to control fisheries and secure a sustainable use of the harvested marine resources but not necessarily in order to conserve biological diversity. Five areas have been protected along the southern coast for conservation of cold water corals, in addition to three marine areas protected for biological diversity in accordance with nature conservation legislation. Also Norway has marine protected areas according to the Convention for the Protection of the Marine Environment in the North-East Atlantic (OSPAR), and the identification of potential new areas is an ongoing process. Special attention is given to the Arctic archipelago of Svalbard and now 65% of Svalbard's land area and 87% of its territorial waters are protected as nature reserves and national parks under the Svalbard Environmental Protection Act. In 2010, most of the volcanic island of Jan Mayen, including its territorial waters was designated as a nature reserve.

The greater North Sea is shared by the United Kingdom, Norway, Denmark, Germany, the Netherlands and Belgium. For the United Kingdom this is an important link between the warm waters around the Channel and southern England and the cold Atlantic Ocean north of Scotland. Its policy for the North Sea is the same as for the Atlantic Ocean and also here MPAs have been established. The other countries around the North Sea have done the same. Especially important here is the Wadden Sea that is shared by Denmark, Germany and the Netherlands. This area is protected in all three countries and there is an international coordination committee to oversee common policy and management. In 1987 the Common Wadden Sea Secretariat (CWSS)⁴⁵ has been founded in Wilhelmshaven for the 'Trilateral Cooperation on the Protection of the Wadden Sea'. Its main task is support and organisation of activities, board meetings and conferences (once every 4-5 year) in the framework of the cooperation between the three countries.

The Baltic Sea is shared by Denmark, Sweden, Finland, the Russian Federation, Estonia, Latvia, Lithuania, Poland and Germany. It is an enclosed sea and therefore vulnerable. The countries around the Baltic Sea cooperate in HELCOM⁴⁶, which meets regularly to coordinate its actions and policies. HELCOM was established about four decades ago to protect the marine environment of the Baltic Sea from all sources of pollution through intergovernmental cooperation. According to several of the HELCOM countries it is difficult to reduce the pollution within the sea area, especially, because there is not much water exchange with the North Sea. According to Finland and Estonia the pollutants reaching the Baltic Sea have decreased but there is no significant improvement in water quality. Denmark has stated that it is its goal to issue a ban on fishing with fishing gear which scrapes the reef bed for all reefs and their immediate surroundings in Natura 2000 designated areas. The first prohibition orders came into force in 2013. Denmark aims to ensure that coastal zone development is achieved by directing urban development away from the coast, to ensure that cohesive stretches of undeveloped coastline remain intact. In 2010, the International Year of Biodiversity, major steps were taken towards creating a network of marine protected areas in the North East Atlantic and the Baltic Sea. Germany has implemented a joint OSPAR/HELCOM network of coastal and marine protected areas.

According to Latvia the main threats to biodiversity in coastal areas are habitat degradation and habitat loss, expansion of invasive species and low environmental awareness. In Lithuania the step has been set to action. In 2008 Sea Coastal Zone Management Programme for the year 2008-2013 was adopted that regulates protection of the natural coast and regeneration measures. The Curonian Lagoon biosphere area has been established. Measures for the protection of biological values and natural landscape are included in development of the Klaipėda district plan as well as an Integrated Coastal Zone Plan. Poland has decided, according to the act of 21 March 1991 on maritime areas of the Republic of Poland on a protected coastal area along the sea-coast. The purpose of designating the coastal area is to maintain the sea-coast in accordance with safety and environmental requirements. The area includes a technical strip (which lies directly by the sea) and a protective strip. Activities in the coastal area are

⁴⁵ http://www.waddensea-secretariat.org/

⁴⁶ http://www.helcom.fi/

regulated by this act. In Sweden, there is a general prohibition against building closer than 100 m from natural water bodies. In some cases, the regional authorities can extend this exploitation prohibition to 300 m.

Finland states that one of the key challenges for sustainable use of the Baltic Sea and the coastal areas is posed by lack of information on the biodiversity of underwater habitats, and the lack of detailed information on areas that are regionally, locally and species-specifically significant in ecological terms.

The Mediterranean Sea is the core of one of the world's biodiversity hotspots, but also one of the heaviest exploited and most polluted seas in the world. The following countries that signed the Bern Convention are responsible for parts of the Mediterranean Sea: Spain, France, Italy, Slovenia, Croatia, Bosnia-Herzegovina, Montenegro, Albania, Greece, Turkey, Cyprus, Malta, Tunisia and Morocco. After the first Action Plan in 1975, the Barcelona Convention⁴⁷ against the pollution of the Mediterranean Sea has been adopted. At present there are 22 parties to the Convention. In 1984 a decision has been taken to identify Special Marine Protected Areas. The threats to the Mediterranean coasts are at present not only pollution, but also building activities for housing and tourism. Moreover several parts of the coast such as in Tunisia suffer from increasing erosion. Most countries have now established MPAs or are in the phase of developing them, such as Tunisia.

As stated above, France is developing a general strategy for the coastal and marine areas. Also Morocco is developing such an integrated approach.

In Croatia regional cooperation has been set up in the coastal provinces. The UNDP project COAST⁴⁸, "conservation and sustainable use of biodiversity in the Dalmatian coast" was implemented in the period 2007-2013 with the support of the United Nations Development Programme (UNDP). In cooperation with several national ministries, four Dalmatian provinces and a number of local organizations, companies and individuals developed a green vision for rural areas of Dalmatia, founded upon the extraordinary natural wealth of the region and confronted with the many obstacles in rural areas that suffer from an acute shortage of development possibilities.

In 2011 Italy has developed for its system of marine protected areas a project called ISEA (Standardized Measures of the Effective Management of Marine Protected Areas). Since 2012 the project has been adopted for the whole system of marine protected areas in order to guarantee a uniform planning of interventions and at the same time a characterization of the specific targets of protection and of direct and indirect threats. This system promotes an increase in the effectiveness of the management and is important to guide actions and policies⁴⁹.

In Spain many restoration projects on dune ecosystems are being carried out throughout the Spanish coast. The new Law on protection and sustainable use of the coast attempts to respond to the on-going coastal degradation. It introduces a different regime for urban (adjacent to urbanized land) and natural stretches of beaches (with protected land or rural areas). The latter have a higher protection level. New buildings are prevented in the maritime-terrestrial public domain and it is prohibited for necessary improvement works in existing buildings to increase volume, height or surface area. Along the entire coast coastal and dune ecosystem restoration is being developed. The law is also an important step for the recovery and conservation of seagrass (*Posidonia oceanica, Zoostera* sp., *Cymodocea nodosa*) that has considerably been degraded in the past because of pollution, trawling, invasive species (*Caulerpa taxifolia*) and anchoring of pleasure boats. Also in Turkey dune restoration is important. The coastal sand-dunes are the ecosystems are sensitive and vulnerable to destruction, at some parts they have been destroyed due to human pressures. In Turkey, currently only 30 (27%) of 110 coastal sand-dunes areas on the Mediterranean and Aegean coasts are in a relatively good condition.

The Black Sea countries are Turkey, Bulgaria, Romania, Ukraine, the Russian Federation and Georgia. The Black Sea is comparable with the Baltic Sea as it only has a one outlet into the

⁴⁷ <u>http://www.unep.ch/regionalseas/regions/med/t_barcel.htm</u>

⁴⁸ http://www.hr.undp.org/content/croatia/en/home/operations/projects/environment_and_energy/COAST.html

⁴⁹ http://www.progettoisea.it/eng/

Mediterranean Sea. However, its catchment is much larger and big rivers such as the Danube, Dnepr and Don belong to it. However, all these rivers are regulated and dammed, which hampers fish to migrate upstream. The Convention on the Protection of the Black Sea against Pollution⁵⁰ has been signed in 1992 and entered into force in 1994. It is an ecologically important sea because the occurrence of several sturgeon species.

All countries mention the bad status of the fish populations in the Black Sea. The most valuable natural habitats of the Georgian Black Sea and its coastline are included a National Park and Reserves and are under special protection regimes as seascape (strict and managed protection zones). They are a significant habitat for dolphins and sturgeons. Still, in 2007 an assessment of the total number of sturgeons in Georgian waters revealed historically low numbers: less than 10,000 individuals, a decrease by a factor of 37 since 1907. The most important reason for such a dramatic decrease is the destruction of habitats that is mainly caused by the construction of a hydro-electric power station, the pollution of rivers and coastal zones, and the extraction of sand-gravel in its spawning rivers. Restoration would require a special approach for each individual river. Turkey concludes that the Turkish Black Sea ecosystem, which is well-known for its rich biological diversity and fish potential, has become degraded today due to a number of climatic factors as well as to the factors of human origin during the last 20 to 30 years. Also Ukraine and Romania conclude that the composition of fish populations is changing. Despite this, the Romanian conclusion is that the marine environment of the Black Sea has experienced a slow but continuous recovery.

The Caspian Sea is enclosed by the Russian Federation, Azerbaijan and non-Bern convention countries Kazakhstan, Turkmenistan and Iran. Important rivers are the Ural and the Volga. Its ecosystem health, water quality and its fish populations are rather poor. The four most important immediate causes were identified by $UNEP^{51}$ as (1) pollution as a result of oil spills and agricultural discharges, (2) invasive species, such as the comb-jellyfish (*Mnemiopsis leidyi*), (3) poaching of valuable species and unsustainable harvesting practices in the fishery and (4) damming and regulation of stream flow of rivers discharging into the Caspian Sea.

The Azerbaijan National Caspian Action Plan (NCAP) identifies the key marine and coastal habitats requiring focused conservation actions in Azerbaijan's territorial waters of the Caspian Sea. The International Commission on Aquatic Resources of the Caspian Sea (ICARCS) regulates fisheries in the Caspian Sea region by defining the Total Allowable Catch (TAC) and distributing the catch quota regarding major commercial fish species (sturgeon, sprat, seals) between Iran, Kazakhstan, Russian Federation, Azerbaijan and Turkmenistan.

2. Mountains

The request on mountains is specified as:

- a. Providing for financial means along with management agreements for encouragement to maintain the rural mountain population, while promoting farming methods respectful of natural habitats and the balance of nature; adjusting aid arrangements for stockbreeding in mountain areas to the carrying capacity of the pastureland;
- b. Designating areas where the building of roads, except access tracks to pastures and forests, and the construction of buildings and other structures are prohibited;
- c. Including in land-use planning zones enjoying the highest level of protection the landscape features and habitats typical of mountain ecosystems, such as glaciers, névés, moraines, rock faces, scree, high-altitude lakes, torrents, peat bogs and dry grasslands;
- d. Regulating off-piste skiing, the spreading of artificial snow, the use of cross-country vehicles and any other activities liable to harm mountain ecosystems.

⁵⁰ http://www.blacksea-commission.org/ convention.asp

⁵¹ http://www.unep.org/dewa/giwa/areas/reports/r23/giwa_regional_assessment_23.pdf

On this item reports are restricted to the mountainous countries and because mountains are not an issue specifically requested by the CBD, there is restricted information available through the CBD 5 and CBD 4 reports. The countries that have important mountain systems are from north to south Iceland, Norway, Sweden, Finland, Russian federation, United Kingdom, Germany, Poland, France, Switzerland, Austria, Czech Republic, Slovakia, Hungary, Ukraine, Portugal, Spain, Italy, Slovenia, Croatia, Serbia, Montenegro, Albania, Macedonia, Bulgaria, Greece, Romania, Cyprus, Turkey, Georgia, Armenia and Azerbaijan.

Policy aiming specifically at mountain management and mountain habitats is not much reported. The Czech Republic has a long experience with negative impact in the past through air pollution in the Ore Mountains that deteriorated vegetation and biodiversity roughly till the end of the last century. At present tourism and recreation have become the most important problem for biodiversity in Czech mountain ranges. The most famous ski resorts are concentrated in the NPs (Krkonose/Giant Mountains, Sumava/Bohemian Forest) and ski centres can be found in majority of PLAs. Sustainable meadow management is a key tool to protect montane meadows that are habitats of European concern. They were formed by mowing and grazing over several centuries; they are rich in biodiversity and include endemics such as in the White Carpathians and the Krkonose. Special management techniques are developed and practiced to protect flower-rich meadows.

The Carpathians are one of Europe's largest mountain ranges and home of the headwaters of several major rivers. They also constitute a major ecological, economic, cultural, recreational and living environment in the heart of Europe, shared by numerous people and countries. The Framework Convention on the Protection and Sustainable Development of the Carpathians (Carpathian Convention)⁵² was adopted and signed by the seven Parties (Czech Republic, Hungary, Poland, Romania, Serbia, Slovak Republic, Ukraine) in May 2003 in Kyiv, Ukraine, and entered into force in January 2006. It is the only multi-level governance mechanism covering the whole of the Carpathian area and besides the Alpine Convention the second sub-regional treaty-based agreement for the protection and sustainable development of a mountain region worldwide.

The Alpine Convention⁵³ is an international treaty between the Alpine countries (Austria, Switzerland, France, Liechtenstein, Monaco, Germany and Slovenia for the development and protection of the Alps. The Ecological Network Platform⁵⁴ of the Alpine Convention was set up by ministers at the IXth Alpine Conference in 2006 as an expert forum to develop common strategies designed to contribute to the preservation of biodiversity in the Alps, mainly through the development and support of measures ensuring the connectivity between natural habitats. Challenges to its biodiversity heritage are manifold. Climate change has a severe impact on connectivity since average temperatures, which in the Alps increase faster than the average in the Northern Hemisphere, push fauna and flora to higher altitudes. The more fauna, flora and their habitat are pushed to higher altitudes, the harder it is to maintain the connectivity – at national, regional and European levels -. It supports the elaboration of a publication of a manual for the implementation of the ecological network and connectivity for the implementation of a "Green Economy" in the Alpine Region. Furthermore, biodiversity is one of the priority action areas in the multiannual Work Programme 2011-2016.

This is important as for instance in Germany 54% of typical Alpine biotopes are already endangered or at risk of complete destruction. Tourism, agricultural and forestry uses and infrastructure development need to take special account of this situation. Germany has indicated to cooperate in the implementation of an international interlinked biotope system in the Alps and the higher regions of the central uplands by 2020, especially by designating rest zones and wilderness areas. A number of measures are being taken in the Alps to foster the reintroduction or natural return of large predators such as wolf, bear, lynx and

⁵² <u>http://www.carpathianconvention.org/the-convention-17.html</u>

⁵³ http://www.alpconv.org/en/convention/pages/default.aspx?AspxAutoDetectCookieSupport=1

⁵⁴ http://www.alpconv.org/en/organization/groups/WGEcologicalNetwork/default.html

vulture and their acceptance by the public and - in the case of the lynx - in the central uplands as well. In Liechtenstein the mountain area planning has led to a substantial reduction of grazing on extreme terrain and locations vulnerable to erosion. A review of grazing showed that stocking is now appropriate to the terrain on nearly 90% of the areas.

In Finland fifteen percent of fell habitats have been classified as endangered. These include habitats in both the mountain birch region and in the bare fell region above the treeline. The most significant threatening factor faced by several habitat types is intense reindeer grazing. Parts of the Swedish mountain areas are designated as areas on national interest due to their untouched character. Within these areas, new buildings or developments are only allowed if it is necessary for reindeer holders, people permanently living in the area, scientific research or for outdoor recreation purposes.

Intensive grazing in the alpine zones of the Eastern Caucasus has resulted in a decrease in the feeding base and habitat quality of the wild ungulates. Also hunting seems to be a strongly limiting factor for these species, particularly for the chamois, east Caucasian tur and red deer. The subsequent decrease in the wild ungulate numbers is probably one of the main causes of current conflicts between large carnivore species, such as the wolf, and local communities.

In the Balkan region the mountain areas are hotspots of biodiversity. Eight countries of the Dinaric Arc (Albania, Bosnia and Herzegovina, Croatia, Montenegro, Serbia, Slovenia, FYR Macedonia and Kosovo) initiated under the name "Big Win for Dinaric Arc" and "Big Win 2" initiatives, which included joint work on the improvement of the protected areas, the enhancement of the planning process in nature conservation, evaluation of the economic value of natural resources, inclusion of the goals of nature conservation into the plans for economic development in fishing, forestry, agriculture, energetics, spatial planning all leading to a more intense intersectoral cooperation. Macedonia carries out actions for conservation of Osogovo Mountains as transboundary priority area with Bulgaria along the Green Belt. Another initiative is the designation of Shar Mountains, Jablanica Mountain as a potential national park. The "Shar Planina – Korab – Deshat" mountain system could become the largest protected area in South-eastern Europe and one of the largest in Europe.

In Wales in the United Kingdom, the Cambrian Mountains provide an excellent opportunity to work in close partnership with the farming community to lead the way in experimenting with and identifying new approaches to sustainable multi-purpose land management in the uplands. The Cambrian Mountains Initiative aims to pilot and demonstrate the major components that are a prerequisite for modern landscape management capable of coping with the challenges of today and the future. The goal is to develop a blueprint that can be scaled-up for use across Wales. There is considerable market potential for the range of ecosystem services that the Cambrian Mountains produce.

Finally, In Morocco priorities have been set between the middle and high Atlas. The planning and development strategy for the Middle Atlas is the first project of sustainable development for the mountain range and embodies the will of the authorities to include the mountain areas in an integrated development process. The strategy aims to preserve the resources of national interest by incorporating and preserving the Middle Atlas ecological system for its own natural heritage values and preserve it as the "national water tower". The High Atlas program aims to strict management of the natural heritage of the Massif, through rational use of natural resources and the enhancement of existing potential (water, forest products, forest grazing etc.), improving the living conditions of the local population, through creation of employment and opportunities for training/education, safeguarding the identity of the High Atlas, taking into account its cultural, ecological, environmental and landscape values and by establishment of an institutional mechanism to safeguard the Massif.

3. Flood plains

This request is specified as reporting on:

a. Maintaining and, where possible, restoring the natural cycle of flooding in flood plains;

- b. Designating flood-risk areas and subjecting them to special restrictions, particularly with regard to building;
- c. Protecting landscape features and habitats that are typical of flood plains, such as alluvial forests, water meadows, oxbow lakes and islands, by including them in land-use planning zones that enjoy the highest level of protection;
- d. Encouraging the continuation of traditional agricultural and stock breeding methods by means of subsidies management agreements;
- e. Requiring prior authorisation for any drainage or conversion of wetlands in a flood plain;
- f. Creating river nature parks, in accordance with paragraph VII.3 below.

A minority of the country reports mention explicitly floodplains as a conservation target. In a few countries floodplains have been declared a Natura 2000 site, a National Park or reserve, such as the Danube delta in Romania and the Neretva delta in Croatia. The Czech Republic has 14 wetlands as Ramsar sites of which nearly half are river floodplains. Countries such as Finland declare that rivers are in a good status (northern Finland) or do not mention them. Other countries improve the management of the floodplains such as Estonia ad Denmark. Denmark has established buffer zones along watercourses and lakes that comprise 10 metre-wide areas along watercourses and large lakes, which are to be neither cultivated, fertilized nor sprayed.

Restoration projects and cross-border cooperation projects are important in a number of countries, especially to make the river basins prepared to adapt to climate change impacts. GEF and Life+ are the funding mechanisms that are being used. For the Drin basin with important lakes such as Prespa, Ochrid and Skadar a Memorandum of Understanding⁵⁵ "Drin: a common strategic vision" was signed in 2011 by the environment ministers of the five countries (Albania, Greece, FYR Macedonia, Kosovo and Montenegro) aiming to take joint actions for coordinated management of water resources of the Drin basin to preserve and restore the ecosystem and services it provides, as well as mitigation of climate change. This serves as a basis for starting a cross-border project for cooperative integrated management of the water resources in the Drin River basin.

In Austria several river restoration projects are ongoing especially in Lower Austria, such as the March-Thaya-Auen (Morava-Thaya floodplains)⁵⁶. The lower reaches of the river Traisen are to be replenished with a lively floodplains landscape, including the restoration of wetland habitat, re-connection with the surrounding countryside and wetlands, and improving fish accessibility and traversability⁵⁷. Within the "Mostviertel-Wachau", the Ybbs river, the mouth of the Pielach river and the Wachau are being restored. The Life+ project, the "Danube Network"⁵⁸, aims to improve fish habitat and accessibility in the Danube through the construction of new bypass channels by 2017.

The Rhine is being prepared for climate change mitigation by rehabilitation of its natural structures and processes from Switzerland to its delta in the Netherlands (see Figure 1). Switzerland is restoring 4000 km watercourses in the next 80 years (Figure 10).

Germany has produced a water meadows status report that provides a foundation for improving water meadow conservation and flood control in Germany. It shows that, given forward-looking cross-sectoral planning, sustainable development of water meadows gives rise to substantial synergies in flood control and water and nature conservation, and in adapting to climate change.

⁵⁵ http://www.twrm-med.net/southeastern-europe/supported-processes-and-projects/drin-river-basin/2022-the-drinbasin

⁵⁶ <u>http://www.march-thaya-auen.at/projekte/ramsar-skat/</u>

⁵⁷ http://www.life-traisen.at/en/project-life-traisen

⁵⁸ http://www.life-netzwerk-donau.at/en/project-life-danube-network



Figure 10. The Thur, a Rhine tributary is being adapted to be more natural and climate-proof, left the explanation, right the early results.

In the Netherlands the Dutch Ministry of Infrastructure and the Environment, Water Boards, Provinces, Municipalities and other regional partners are working together to lift barriers for fish migration and its waterway network is becoming more and more reconnected. The Dutch Ministry of Infrastructure and the Environment and the Ministry of Economic Affairs agreed to work together to increase public safety and nature development in the river region. The agreement consists of several programmes and one of them resulted in the National Spatial Planning Key Decision (PKB) 'Room for the River'. Protection against flooding and nature development resulted until now in 4021 hectares of new nature in the floodplain areas of all major Dutch rivers. An example is given in Figure 1.

4. Forests

This request is specified as reporting on:

- a. Maintaining at least 2 % of the surface area of publicly-owned indigenous and natural forests in its natural state by letting biological cycles, including the recycling of dead wood, occur freely;
- b. Setting up a system of management agreements with the owners of private forests to encourage the conservation of certain forest ecosystems or the continuation of certain forestry practices;
- c. Adopting regulations to ensure the protection of forest clearings and edges;
- d. Requiring that, after an environmental impact assessment has been carried out, any afforestation of semi-natural or natural non-wooded land and any conversion of natural forest into artificial forest be subject to the permission (or agreement) of the authority responsible for nature conservation and/or forest management.

Most country reports do discuss the measures taken for forest management. In general there is much awareness of the importance of forest for nature conservation and of the importance of sustainable forestry. In forestry and in forest managements plans much aspects of this recommendation are reflected such as the identification of Natura 2000 sites within forests, forest connectivity forest and species restoration plans and sustainable management. Many countries reach the 2% of the forest in natural state and most countries report that forest bird species are in a good status. There are differences between countries with a stable development in the last twenty years and those that are recovering from difficult periods. However, also the latter report that forestry is recovering. Several countries report that land abandonment is favouring forest development. In Liechtenstein about 7 % of the state territory is natural forests. They are left in its natural state by letting biological cycles occur freely. This also includes the recycling of dead wood. In Slovenia in forest management considerable attention has been devoted to less common tree species such as European Yew (*Taxus baccata*), Service Tree (*Sorbus domestica* and *Sorbus torminalis*) and Elm (*Ulmus glabra*). Macedonia protects the endemic Balkan species Macedonian Pine or Molika (*Pinus peuce*) that forms large forest stands (app. 1.800 ha) in Pelister National Park.

Next to conservation of Natura 2000 sites other measures are taken such as the designation of forestry reserves. In Estonia 9% of the forests are strictly protected with the goal to place ultimately 10% of the forests under strict protection; 16% is managed with different restrictions. Outside the protected areas, there are Woodland Key Habitats (WKH) that are partly covered with a 20-year contract between the state and the forest owner, in which is agreed that the state compensates for the loss of revenue to the owner. Also in Lithuania there are about 9000 WKHs, covering 26427.5 ha in total. However, the biggest part of the forest owners in fact does lack forest management knowledge and experience. In 2013, 1.4% of State Forests in Poland were strictly protected as nature reserves. Moreover according to the Principles of Silviculture of the State Forests in Poland, in complete clearings of forests with a short restoration cycle, patches of old tree stands should be left until their natural death. Their surface area should not be smaller than 60 m^2 and not bigger than 5% of the cleared forest unit. The ecological status of forest stands in Germany has improved in recent decades, mainly as a result of near-natural forest management, increased conversion of spruce monocultures to mixed deciduous forests, and targeted assistance measures (e.g. contract-based nature conservation). This has also been enhanced by a growing understanding of ecosystem relationships and increasing awareness of the importance of biological diversity among politicians, forest owners and the public.

On the other hand there are also negative trends for biodiversity. In Finland most of the increase in the annual forest volume growth has been achieved through the draining of wooded mires, more intensive forest management as well as the fact that more forest stands now belong to the fastest growing young (30 to 60 year old) age classes. Although positive from the point of view of sustainable resource management, these changes have had negative impacts on important forest habitats and mire species. In France the increase in forests is mainly due to natural colonization of heathland, meadows, wasteland and abandoned rangeland, sometimes to the detriment of other biodiversity aspects of these environments.

Forest certification is important in most countries and it is growing practice. There are two certification schemes, PEFC (Pan European Forest Certification) and FSC (Forest Stewardship Council). These systems certify, on the one hand, sustainable forest management in a given forest area and, secondly, chain of custody of the wood processing industries, verifying that the wood used comes from forests managed by sustainability criteria.

In Finland forests are certified under both certification schemes PEFC and FSC. Certification of forests is voluntary. However, not being involved in a forest certification scheme may be a disadvantage to a forest owner since that may hinder to sell timber. In Germany PEFC-certified forests had a share of about 70%, and FSC-certified forests accounted for about 5% of the total forest area. To achieve the target in the National German Strategy on Biological Diversity, public-sector forest owners in particular should be encouraged to live up to their model function by obtaining certification to high ecological standards. Also in Italy certification is increasing. At the end of 2009 about 12% of national forested areas have been acknowledged under at least one of the two certification schemes, PEFC or FSC. By the end of 2012 forested areas with the double certification totalled to 34,725 ha. In 2009 Portugal had a certified forest area of 361,005 hectares out of a total forest area of 3.78 million hectares (9.54%). 192,819 hectares were certified by FSC while 168,186 hectares was certified by PEFC. Significant progress has been made in the Russian forest certification in accordance with the FSC standards (in 2013 more than 30 million ha, 25% of commercial forests, are certified). In Spain, certification of sustainable forest management is also done through these two certification systems, FSC and PEFC. In Sweden voluntary set-aside areas are established when landowners remove areas from forestry production to establish conservation sites without economical compensation. The voluntary set-asides are mostly a result of certification standards such as the Komet Program, which has been designed for testing new ways of protection of biologically valuable forests.

In the African country Burkina Faso forest use is much more exploitation for daily fire wood. Over 87% of households in Burkina Faso use wood as the main energy source for cooking. 75% of the demand is from unmanaged forests. Uncontrolled bush fires are a source of pressure on biodiversity. The main causes of deforestation lie in the poverty of the people and the lack of awareness of the values of biodiversity. FAO estimated the reduction in vegetation cover over the last 20 years (1990-2010) at an

average rate of 1% per year. On the other hand however, in the logging areas there is also a marked decrease in rural poverty which is there 37.33% against 52.3% nationally. In Senegal progress has been made in the restoration and conservation of forest ecosystems as the reforestation deforestation ratio increased from 0.95 in 2010 to 0.99 in 2011. The Tunisian forests still face threats, especially since the revolution of 14 January 2011. The latest statistics show an increase of 300% of forest fires and clearing events. Reforestation campaigns are conducted in degraded areas in order to reconstruct forest ecosystems. Economically, the Moroccan forest contributes 2% to the agricultural GDP and 0.4% to national GDP. Its real contribution, however, is estimated at 10% of agricultural GDP, which corresponds to income that rural populations derive from fuel wood and non-wood forest products. In environmental terms, the most important contribution of forests in Morocco is protection against soil erosion, water resources conservation in watersheds, protection of water infrastructure, protection of nature and wildlife and flora and the preservation of biodiversity

VII. Protected landscapes

The final question was to report on actions to:

- 1. Set up a network of nature parks of the C and D categories defined in Resolution (73) 30 of the Committee of Ministers with a view to conserving European landscapes by managing all their component elements in an integrated way.
- 2. Provide each nature park thus defined with the following means of action:
 - a. A specific land-use planning instrument with which the land-use plans of municipalities situated in the park must comply, and which includes the zoning and regulation of human activities according to the conservation needs of each zone;
 - b. Incentives to encourage the maintenance of traditional activities compatible with the conservation needs of each zone, or necessary to achieve them;
 - c. An administration specific to each park and empowered to grant the permits required to carry out those activities which are regulated in each zone;
 - d. Adequate funds and staff for providing information, encouragement and financial or technical assistance to all public bodies and private individuals that own land or carry out activities in the park.
- 3. Pay particular attention to establishing river nature parks covering the whole width of the flood plain, on either side of certain watercourses or parts thereof, where hydraulic schemes, drainage and any activities liable to harm river and alluvial ecosystems are regulated.

Category C comprises areas that are protected mainly on account of their cultural and aesthetic value. Category D comprises areas that are usually large tracts of land which are primarily intended for recreation but where the principles of nature conservation are observed (Box 1). They may include natural monuments, private estates, villages etc. Such areas are therefore primarily of recreational value (rest and relaxation) and also of cultural, aesthetic and natural value.

The reporting on this part of the recommendation is rather restricted. Croatia, Georgia, Montenegro, the Netherlands Norway, Poland and Turkey indicate that regional parks do exist in which regional and local authorities play a role in protection and management often through spatial planning. Education and outdoor recreation play an important role here. Slovakia refers to its national five level protection system. A number of countries, such as Croatia, the Czech Republic, the Netherlands, Norway and Poland have integrated the system of different categories of protection areas into one system.

The river nature parks have no mention in the reporting at all.

However, the protection management under category C and D does exist in many countries and is important especially at the local and regional scale. Much tourism and outdoor recreation is focussing on

these areas. However, because these are decentralised management units the information is not easily available at the national level.

CONCLUSIONS

From the reporting on Recommendation No. 25 (1991) by the countries that signed the Bern Convention and their CBD 5 and CBD 4 reports it can be concluded that there is much action on biodiversity conservation outside the protected areas proper. Countries indeed do take general measures and there is much expertise and experience in the countries, but it is hard to develop a balanced within and between countries. New existing and developing technologies can be used in policy making, but this requires international cooperation and knowledge sharing. The following conclusions can be drawn:

- 1. There are differences between countries in Europe that clearly seem to be related to their economic situation. In most European countries the conservation of biodiversity through a PA system is under pressure because of the present restrictions in financial means. In some countries the economic situation at present does not allow investing much in nature conservation. Balkan and Caucasus countries indicate that the recent developments and the economic situation has set them back and that they need support and capacity building to come into a level situation with the other countries in Europe.
- 2. There are European countries with a high level of knowledge on conservation policy, biodiversity planning and management, monitoring reporting and stakeholder involvement. Others are in need of capacity building in these fields. It would be beneficial to match these in a European capacity building programme.
- 3. The European Union is an important driver of the biodiversity conservation process, especially through its Biodiversity Strategy, the Habitats and Species Directive and Birds Directive obliging its members to develop a network of protected sites (Natura 2000). The Marine Framework Directive is instrumental in the development of a coordinated European network of Marine Protected sites. Marine protection would benefit from a Pan European approach as well.
- 4. Changes in land use and management are important drivers of transformation in biodiversity conservation. Land abandonment leads to an increase in forests, but also to a decrease in grassland biodiversity. On the other hand changes in the central and eastern European countries caused by the breakdown of the iron curtain has brought governments in many countries to transform former military training areas into nature and the symbol of this peaceful Europe is the Green Belt project.
- 5. Management plans are developed or under development in most countries becoming part of a standard conservation strategy. Also EIA and SEA procedures are becoming more common for projects that impact potentially the designated ASCI's. According to the country answers actions on protected landscapes are not done separately for the A and B categories and the C and D categories. A number of countries, such as Croatia, the Czech Republic, the Netherlands, Norway and Poland mention that the system of different categories of protection has been integrated into one system.
- 6. The protection of biodiversity by private persons is not explicitly mentioned by most countries, but it is important to realise that throughout Europe there are traditionally many private land owners combining tradition of conservation of culture and nature. It is important to pay attention to the continuation of this practice.
- 7. One of the issues that is most dominant in Europe is the change from a policy of only protected areas to a policy of conservation of networks of protected areas connected by ecological corridors. These have been developed in all countries in the form of networks per se as well as corridors for crossing roads and as river corridors. This can be most cost-effective and ecologically effective, however, if it is also done as a European endeavour, realising a Pan European Ecological Network for different species in a balanced way. Several projects are already being realised, especially in

the Alps and in border crossing river basins all over Europe. The European Union is supporting this with its programme on Green Infrastructure.

- 8. Every country has important and threatened habitats. It will be especially important to conserve and manage well the karstic areas of Europe that are important for biodiversity and water management, but also attractive as a touristic area. They are especially vulnerable as all surface pollution will come down in these sensitive systems and they are in many cases situated in countries that need support in knowledge and management. Wetlands, bogs, mires and mountain summits are other important sensitive habitats requiring attention.
- 9. Landscape features are important as small structures in the countryside that express the value of the cultural landscape. All countries give different emphasis on these and there are clear problems to make the inventory, to keep these up-to-date and integrate them in national and regional policy. However, among others the Great Britain Countryside Survey has successfully shown that this is technically possible and can be successfully used in policy.
- 10. There are agreements through Conventions on the management of the different seas of Europe, except for the Caspian Sea. Policies are now under development, but severe problems in implementation are ahead. Attention might be needed for the Kelp forests in the Atlantic Ocean and the fish populations of the Caspian Sea.
- 11. Some of the European mountain systems have their own convention or at least cooperation between the countries that share the mountain system. Important threats in all mountain systems are land abandonment and climate change and its impact on biodiversity. Climate change has a severe impact on connectivity since average temperatures, which in the Alps increase faster than the average in the Northern Hemisphere, push fauna and flora to higher altitudes. In the north (Scandinavia) and the south (Atlas) changing land management practice is most important.
- 12. Finally, forest policy is different between timber producing countries and those where this is a minor issue. In the latter countries forest conservation has more priority. However also in a number of timber producing countries forest conservation gets increasing attention. Forest reserves and Woodland Key Habitats have been established. A consistent forest conservation policy will be advantageous for the implementation of the Bern Convention provisions outside Protected Areas proper as well.

