Interreg CENTRAL EUROPE
European Union European Regional Development Fund

MaGICLandscapes

GREEN INFRASTRUCTURE HANDBOOK

Conceptual & Theoretical Background, Terms and Definitions

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GREEN INFRASTRUCTURE HANDBOOK – CONCEPTUAL AND THEORETICAL BACKGROUND, TERMS AND DEFINITIONS

First Output (O.T1.1) within the framework of the Interreg Central Europe Project MaGICLandscapes - Managing Green Infrastructure in Central European Landscapes

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Suggested citation: *John, H, Marrs, C., Neubert, M. (ed., 2019): Green Infrastructure Handbook - Conceptual and Theoretical Background, Terms and Definitions. Interreg Central Europe Project MaGICLandscapes. Output O.T1.1, Dresden. With contributions from: H. John, C. Marrs, M. Neubert, S. Alberico, G. Bovo, S. Ciadamidaro, F. Danzinger, M. Erlebach, D. Freudl, S. Grasso, A. Hahn, Z. Jała, I. Lasala, M. Minciardi, G.L. Rossi, H. Skokanová, T. Slach, K. Uhlemann, P.Vayr, D. Wojnarowicz, T. Wrbka. Published online: https://www.interreg-central.eu/Content.Node/MaGICLandscapes.html#Outputs*

Dresden in February 2019, revised in October 2019

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Introduction

Green Infrastructure (GI) is a key strategy in the European landscape policies aimed at reconnecting vital natural areas to urban hubs as well as restoring and improving their functional roles. Thus, GI is an essential planning concept towards protecting Natural Capital and simultaneously enhancing quality of life. This approach needs to be urgently implemented in Central Europe (CE) landscape planning policies, which seldom consider the ability of land to deliver multiple benefits.

The Interreg Central Europe project Managing Green Infrastructure in Central European Landscapes - MaGICLandscapes works on the operationalisation of the GI concept in Central Europe. It will provide land-managers, policy makers and communities the tools and the knowledge, at different spatial levels that they need to ensure the persistence of GI functionality and consequent benefits to society.

The MaGICLandscapes project will deliver an assessment approach that deals with all spatial levels across CE landscapes types. It will supply the tools for GI assessment at the transnational level ensuring cross-border GI is understood in a way that reduces mis-matched management approaches.

Nine multi-scale and multi-thematic case studies in five regions offer the testing ground for our trans-disciplinary partner consortium to identify and feedback best practice for assessment, thus creating transnational added value. Outputs include a suite of transferable tools: a series of technical manuals as well as partner-level evidence-based strategies and action plans to direct future actions as well as investment. They should enhance the capacities of institutions to better manage our Natural Heritage.

This HANDBOOK OF CONCEPTUAL & THEORETICAL BACKGROUND, TERMS AND DEFINITIONS is the first output of the MaGICLandscapes project. It contains the fundamentals of green infrastructure (GI), which also includes the blue infrastructure. The handbook covers issues such as definitions of important terms or GI and its relationship to territorial law/policies of the five partner countries (Austria, Czech Republic, Germany, Italy and Poland) and EU regulations and programmes. Furthermore, it covers the territorial/international needs for a green infrastructure approach and its contribution to sustainable development. It shows, how a green infrastructure approach can address specific territorial and common challenges.

This handbook for practice-oriented information is based on a review of GI literature and legislation as well as practical experiences of the project partners and stakeholders.

Summary

This Handbook is divided into three chapters A, B and C.

Chapter A introduces the topic Green Infrastructure (GI). It gives an overview of the history of the GI term and concept and sets out a number of definitions of key terms relevant to GI.

Chapter B is a review on GI in legislations at three levels:

- International Conventions and EU regulations and programmes
- National laws/policies of the 5 partner countries (Austria, Czech Republic, Germany, Italy and Poland)
- regional laws/policies of provinces or federal states of these five countries

It gives an overview of legislations, which directly refer to green infrastructure or deal with key elements of it. Section 1 introduces legislations of the EU. Sections 2 to 6 present the situation of GI legislation in the five partner countries.

All sections are structured according to the following regulation topics:

- Green Infrastructure
- Protection of Nature, Biodiversity and Landscape
- Environmental Protection
- Economy and Sustainable Development
- Spatial planning

The Chapter is limited to legislations concerning the land surface and inland waterways/bodies. It does not cover marine environments.

Chapter C focussing on GI assessment needs and specifications is based on project partners' consultations with national and regional bodies and stakeholders. The consultations took place in very different ways, e.g. personal meetings, telephone conversations or letter questionnaires. In Section 1 the main conclusions that can be drawn from the consultations regarding the GI assessment needs and specifications are summarised. Section 2 presents the 9 Case Studies of the MaGICLandscapes project and what are the specific local needs for a GI assessment there.

A. Terms and Definitions

1. Green Infrastructure

1.1. Introduction and History of the Term Green Infrastructure

The protection of our environment has become one of the key themes towards the end of the last century and will certainly continue to be so as we embark on this century. This isn't to say that environmental protection wasn't practiced in earlier years, but its importance to us as a society has become a pressing issue as populations increase and resource management becomes more and more important.

In terms of land management, environmental protection has, in the past, concentrated on the preservation of wildlife and natural/semi-natural habitats and preserving natural and cultural landscapes often on a site by site basis and equally as often in isolation from surrounding land uses.

Societies and economies have invested heavily in transport infrastructure, industry and housing, all of which are essential in the modern world and vital to economic and societal stability. Whilst these investments in 'grey' infrastructure provide tangible benefits to society they have somewhat overshadowed the less-tangible, though equally, actually more, important benefits that the environment provides to humans.

In the past this 'other' infrastructure, nestling amongst the more identifiable grey infrastructure of development, has rarely attracted the same level of interest or investment, at least on the strategic level, with local-level investment often concentrating on a site by site basis taking into account recreational needs or the aesthetic requirements of changing development design trends over the years. Understandably, as settlements expand and change, the strategic potential of this 'other' infrastructure has remained a secondary consideration.

Today, our interdependence with the environment is becoming better understood and its value and the benefits it provides for society are the subject of much research and debate. What has become clear is that those spaces or areas outside of protected areas can, and do, provide us with vital services, essential to our health and well-being, economies and cultural identity and indeed also support those protected areas by providing connective networks.

The science of ecosystem services brings with it an opportunity to maximise the benefits that the 'other' infrastructure can provide and adds an extra, more tangible value to our green spaces. However, application of ecosystem services does not necessarily address the strategic imbalance or how or where to plan green and open spaces at the city or regional scale. So we have an inherited situation where our important natural areas are not planned strategically and our urban and peri-urban spaces are rarely planned on a strategic basis (Gavrilidis et al. 2017).

This 'other' infrastructure is Green Infrastructure. Green Infrastructure is an approach that brings together both the need for strategic planning of green and open spaces and the science of ecosystem services. It promotes the multifunctional nature of space and the benefits that appropriate management approaches can deliver. It recognises the need to plan land use for specific purposes such as farming, nature protection and development but also provides the tool and methods to identify needs and opportunities to enhance the environment and its functions.

Green Infrastructure is not a new term and has been around since the mid-1990's and has its origins in the United States (Firehock 2010). Although the supporting concept that ecosystems should also be considered as infrastructure has been around since the 1980's (da Silva & Wheeler 2017).

The concept arises from the acknowledgement that natural systems are equally as, if not more, important to societal and economic well-being than what is considered as grey infrastructure. Whilst it might seem

obvious that we as a society need the products and services that green infrastructure provides, the use of the term in the US in the 1990s was one of the first examples where it was specifically mentioned in the context of spatial planning. Many other terms have been used over the years, such as ecological, natural, green and blue infrastructure, each dependent on the academic, professional or contextual differences, however green infrastructure has become the dominant term in academic literature (da Silva & Wheeler 2017).

Green infrastructure as a counterpart to grey infrastructure has since been championed by many, though it could be said that few have done more to promote and qualify the concept than Benedict and McMahon of the US-based Conservation Fund. Since the early 2000's this pairing have paved the way for the universal understanding of the concept, culminating in their publication 'Linking Landscapes and Communities' (Benedict & McMahon 2006). Key to development of the concept was the realisation that most planning approaches were, at best, reactive in terms of planning green spaces with limited strategic planning, particularly in the urban realm.

The acceptance that green infrastructure in its many forms is a vital consideration in planning has, over the years, resulted in green space policies and strategies across Europe's territories, though rarely referring to green infrastructure specifically by name, with terms such as ecological networks, green wedges and green networks often been used (Grădinaru & Hersperger 2018). The GREEN SURGE project also recorded in their report on 20 European case study cities that very few referred to GI by name though other concepts such as green system or ecological networks were used (Hansen et al. 2015). Green infrastructure is not a substitute for ecological networks and their constituent elements which are more often than not protected by existing national legislation and recognised within the planning system. However those ecological networks are part of the wider green infrastructure network.

1.2. Definition(s)

The European Union describes green infrastructure as "a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services such as water purification, air quality, space for recreation and climate mitigation and adaptation. This network of green (land) and blue (water) spaces can improve environmental conditions and therefore citizens' health and quality of life. It also supports a green economy, creates job opportunities and enhances biodiversity. The Natura 2000 network constitutes the backbone of the EU green infrastructure (European Commission 2016)." It is from this definition that the EU GI Strategy derives its description of GI and it is this definition with which the MaGICLandscapes project has based its work.

Green infrastructure elements vary in their functions, both primary and multiple-functions, and scales though all contribute to the wider green infrastructure network. As mentioned above at the transnational scale the Natura 2000 network is the core of the EU GI network, these include large forest and mountainous areas, common in Central European boundary regions and example of which could be the Giant Mountains along the Polish and Czech Republic borders. Large rivers are also transnational-scale GI elements, the River Danube is perfect example of a transnational GI element. The coast shouldn't be forgotten as a transnational GI resource, with dunes, marshland, lagoons, forests and grasslands constituting a varied network and one that has potential to be better connected as we plan for future sea-level rise and in some cases managed retreat from the coasts.

At the regional scale green infrastructure could include protected areas such as the Fiume Po - tratto vercellese alessandrino Special Protected Area in Northern Italy, large woodland areas such as the Dübener Heide Nature Park in Saxony and large water bodies such as the Neusiedler See/Fertő tó UNESCO and Ramsar wetland on the Austrian/Hungarian border.

Local scale green infrastructure tends to be the more varied of the three scales. Its form and function is very much dependent on the local circumstances and location. It should be planned to take on a variety of forms and functions and respond to local needs. Local GI could include elements such as ponds, hedgerows and less-natural elements such as green roofs and green walls.

Table 1 below describes various green infrastructure elements and demonstrates that the concept is applicable at all scales.

Table 1: Green Infrastructure Elements and Examples, adapted from Mazza et al. (2011)

Green Infrastructure Elements	
Core Areas	Areas of high biodiversity value, often having protected status such as Natura 2000 sites, large habitat patches such as woodland, grasslands and water
Restoration Zones	New areas of habitat created for specific species and/or restored ecosystems for service provision
Sustainable Use/Ecosystem Service Zones	Land managed in a sustainable fashion for economic purposes whilst retaining and maintaining ecosystem services, examples include multi-use forestry and High Natural Value (HNV) farmland
Green Urban and Peri-Urban Features	Parks, gardens, small woodlands, grass verges, green walls and roofs, Sustainable Urban Drainage Systems (SUDS), school fields, cemeteries, allotments, street trees, ponds
Natural Connectivity Features	Ecological corridors such as hedgerows, rivers, wildlife strips and stone walls. Includes 'stepping stone' habitats to enable movement of species
Artificial Connectivity Features	Man-made features with the purpose of easing the movement of species through a landscape, includes green bridges over road corridors, tunnels underneath transport corridors and fish passes where natural migration/movement is hindered by development

1.3. Green Infrastructure as a Planning Concept

There exists across Europe and the rest of the world numerous examples of green infrastructure (GI) being employed as a planning concept and/or tool for sustainable development, in green and open space planning, development control, biodiversity protection policy for example, though research carried out within the MaGICLandscapes project revealed that the actual term and concept of GI is not commonly used (see Chapter B).

The economic, socio-cultural and environmental drivers behind the development of GI strategies and plans differ from territory to territory and from region to region. Key economic drivers include climate change adaptation and mitigation, reducing flood risk, soil loss, recreation, biodiversity protection and enhancement and reducing costs to health services.

As GI recognises and promotes the multifunctional nature of green and blue spaces and is underpinned by the science of ecosystem services it has a natural affinity with the commonly accepted three pillars of sustainable development: society, economy and the environment (Purvis et al. 2018, Figure 1).

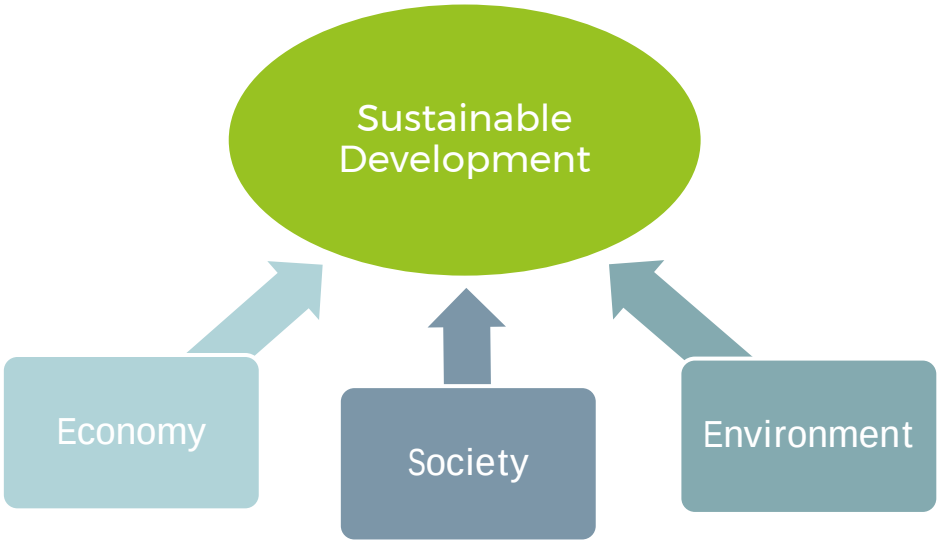

Figure 1: The three Pillars of Sustainable Development

Despite the differing names, many plans and strategies do identify GI as part of a regional network and as applying at other geographical scales as well. They also recognise GI as performing more than just a traditional nature conservation role with socio-economic issues also considered as drivers for change.

In the UK for example the approach is considered an important tool for supporting sustainable development with the National Planning Policy Framework requiring that local planning should 'plan positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure' (Ministry of Housing, Communities and Local Government 2018). Elsewhere the term is very much associated with the urban realm and water management specifically (US EPA 2018) and in cities across the world it is becoming increasingly linked to urban water management (Liu & Jensen 2018).

In Central Europe the concept is not so well established in national and regional planning, though research carried out during the MaGICLandscapes project revealed that the term is widely known amongst planning and conservation professionals, though each often had a different interpretation of GI dependent on their professional background.

The application of the GI concept and recognition that it can deliver multiple benefits manifests itself in many projects and strategies across the Central European space. The Blue/Green Network in the Polish city of Lodz, Germany's publication 'Bundeskonzept Grüne Infrastruktur' (BfN 2017), Corona Verde project in Turin, Italy (Città metropolitana di Torino 2015) are just three examples from Central Europe where the

concept is applied in spirit if not necessarily by name.

For the MaGICLandscapes project partnership regions a review of national, regional and local planning and other policies relating to green infrastructure has been produced. Please see chapter B for more details.

1.4. Green Infrastructure in EU: 2013 the European Commission's Green Infrastructure Strategy

The European Union Green Infrastructure Strategy was adopted by the European Commission in 2013 (European Commission 2013a). It is considered a key element in meeting the EU 2020 Biodiversity Strategy's targets. Target 2 of the Biodiversity Strategy specifically highlights the use of Green Infrastructure (GI) to maintain and enhance ecosystems and their services (European Commission 2011a and b), though all the targets relate to and/or benefit in some way from the GI approach and implementation. In its report 'The Multifunctionality of Green Infrastructure' (European Commission's Directorate-General Environment 2012) the EU Directorate-General for Environment consider green infrastructure has having four 'broad roles': Protecting ecosystem state and biodiversity, Improving ecosystem functioning and promoting ecosystem services, Promoting societal well-being and health and Supporting the development of a green economy, and sustainable land and water management (Figure 2).

Figure 2: Roles of Green Infrastructure (adapted from European Commission's Directorate-General Environment 2012)

2. Natural Capital/Natural Heritage

The Oxford English Dictionary describes capital as 'real or financial assets possessing a monetary value, accumulated wealth and goods' (OED 2018). Natural capital is simply the name given to the stock of natural resources or assets from which humans derive goods and services such as food, water, materials, recreation etc., some of which can be renewable and some non-renewable (NCC 2016). It is from this natural capital that benefits delivered by landscape services flow (Figure 3).

Figure 3: Relationship between Natural Capital, Ecosystem/Landscape Functions and Services and Benefits of Green Infrastructure (adapted from Potschin & Haines-Young 2011)

Natural capital is one of four different types of capital stock the other three being human capital, manufactured capital and social and organisational capital (Ekins 1992). From a human point of view, natural capital can be split into four functions (Ekins et al. 2003):

- Provision of resources for production
- Absorption of waste (production waste and disposal of goods)
- Life support (water, air)
- Amenity

In much the same way as constantly withdrawing money from a bank account without replacing it is unsustainable, over-exploitation of natural capital, a finite resource, without replenishing it is also unsustainable. A more sustainable use of natural capital is summed up well in the following statement from 2009, 'From an economic point of view, nature is an asset which should be preserved. We have to live from the interest and not from the capital itself' (Initiative "Memorandum: Economics for Nature Conservation", 2009).

By considering nature as capital in much the same way as manufactured or human capital we are able to evaluate its contribution to society and economies and thus embed it into decision-making processes where previously it has not carried the same weight as other considerations such as housing, employment and transport infrastructure.

3. Ecosystem Services

Ecosystem services are the goods and services that nature, our natural capital, provides and upon which humans are dependant and it is important to understand those services that ecosystems provide as they are the driver behind long-term protection and restoration of Europe's natural capital (European Union 2017). In the EU Biodiversity Strategy 2020 there is a new focus on Ecosystem Services and Target 2 of the Strategy sets out a series of actions designed to maintain and restore ecosystems and their services (European Commission 2011a). Those actions are; improve knowledge of ecosystems and their services, set priorities to restore and promote the use of green infrastructure and finally to ensure no net loss of biodiversity and ecosystem services (European Commission 2011b).

Three main classifications exist for Ecosystem Services:

- **Millennium Ecosystem Assessment** (**MA,** MA Board 2003) – Recognised globally classification
- **The Economics of Ecosystem and Biodiversity** (**TEEB**, TEEB 2019) – Based on Millennium Ecosystem Assessment, used across Europe
- **Common International Classification of Ecosystem Services** (**CICES**, Haines-Young & Potschin 2018) – Based upon the Millennium Ecosystem Assessment (MA) and The Economics of Ecosystem and Biodiversity (TEEB). This system is developed by the European Environment Agency first published in 2013 and is subject to updates (EEA 2019).

Ecosystem services are often grouped into four main categories: **Provisioning, Regulatory and Maintenance, Cultural and Supporting Services/Functions**. CICES does not cover supporting services. The following examples are taken from the CICES classification scheme (Haines-Young & Potschin 2018).

Provisioning services as the name suggests, are those that provide humans with products from ecosystems, they include nutrition, materials and energy. Examples include:

- Nutrition e.g. cultivated crops, drinking water
- Materials e.g. materials from plants for fodder or fibres from plants, wood for example.
- Energy e.g. Plant based sources such as wood fuel and fuel crops, miscanthus for example

Regulatory and Maintenance services provide benefits to humans from the regulation of ecosystems, they include mediation of waste/toxins/other nuisances, mediation of flows (mass, liquid and gaseous), and maintenance of physical, chemical and biological conditions. Example include:

- Mediation of waster/toxins/other nuisances e.g. reduction of smell/noise/visual impacts or sequestration of sediments and pollutants.
- Mediation of flows (mass, liquid and gaseous) e.g. reducing erosion through vegetation cover or storm protection through shelter belts.
- Maintenance of physical, chemical and biological conditions e.g. Pollination and seed dispersal by insects or micro-climate regulation of temperatures and humidity.

Cultural services are those non-material benefits that humans receive from ecosystems. They are split into two main categories – physical and intellectual interaction with ecosystems and biota and spiritual and symbolic interactions with ecosystems and biota. Examples include:

- Physical and intellectual interaction e.g. Use of ecosystems for leisure such as walking and canoeing or educational purposes such as forest schools, it also includes the aesthetic aspects such as sense of place.
- Spiritual and symbolic interaction e.g. symbolic such as emblematic plants and animals and existence i.e. the enjoyment provided by species and landscapes.

Ecosystem Function or Service?

An ecosystem function or process (La Notte et al. 2017) could be described as the interaction among components in an ecosystem. Examples could be the hydrological cycle, weathering process and ventilation and/or transpiration.

An ecosystem service supply is the flow through which benefits and goods are accumulated (Burkhard et al. 2014). Services could include mediation of waste/toxins/other nuisances, filtration/sequestration, micro-climate regulation, education and flood protection.

4. Landscape Services

As landscapes are subject to a wide range of land uses and considered to be multifunctional, the concept of landscape functions or services can be used as synonym to ecosystem services in the field of landscape ecology and landscape planning as well as spatial, regional, and urban planning. As the term landscape is defined as the visible features of an area of land, its landforms, and how they integrate with natural or man-made features (Hermann et al. 2011), landscape services arise in the spectrum of natural, cultural, peri-urban and even urban landscapes to a varying extent. In landscape development an essential concept has always been that people are part of the landscape and that these landscapes are changed for their benefit (Linehan & Gross 1998; Antrop 2001). Landscape functions describe the capacity of landscapes to provide goods and services that satisfy human needs, directly and indirectly (de Groot 1992). Vallés-Planells et al. (2014) conclude that landscape, cultural identity and diversity, shaped by the way people have interacted with their environment over time, are identified as important components of sustainable development and human well-being.

The landscape services concept can be seen as a bridge between landscape and value. Since landscape sciences primarily focus on spatial pattern and scale, they offer valuable insights into the spatial distribution of human activities and their influence on important landscape processes and structures from which services are derived (Müller et al. 2008).

To integrate the concept into land management decisions an additional approach is to define functions and services at landscape scale. Therefore landscape ecology can become the scientific basis for sustainable landscape development. In state systems where spatial planning policy is decentralised, local stakeholders in particularly need to participate in decision-making on the changes that need to be made in the landscape to better accommodate their perceptions of value (Termorshuizen & Opdam 2009).

Contrary to “ecosystem”, “landscapes” may be associated with people’s local environment and may be more attractive to non-ecological scientific disciplines. As local people define their environment more as a “landscape” than as an “ecosystem”, therefore the term “landscape services” is preferred as a specification of “ecosystem services” (Termorshuizen & Opdam 2009). In addition to this approach with regard to participatory approaches in planning, the terms “landscape function” as well as “landscape service” have become more important in literature recently (Bastian & Schreiber 1999; de Groot et al. 2010; Willemen et al. 2010). Termorshuizen & Opdam (2009) conclude that the concept of “landscape services” is a better approach than “ecosystem services” because landscape services better associate with pattern–process relationships. Furthermore they stated that landscape services better unify scientific disciplines and are more relevant and legitimate to local practitioners.

Landscape services are all goods and services that landscapes provide for sustaining life. It includes potentials, materials and processes of nature (e.g. raw materials, biomass, biodiversity etc.) and services of cultural elements and constructions that come into being through human creation (e.g. buildings, settlements, infrastructure etc.) (Konkoly-Gyuró 2014, personal communication).

Based on de Groot (2006) landscape functions are grouped into five primary categories (based on de Groot 1992 and de Groot et al. 2002):

- **"Regulation functions:** This group of functions relates to the capacity of natural and semi-natural ecosystems to regulate essential ecological processes and life support systems through biogeochemical cycles and other biospheric processes. Regulation functions maintain a "healthy" ecosystem at different scale levels and, at the biosphere level, provide and maintain the conditions for life on Earth. In many ways, these regulation functions provide the necessary pre-conditions for all other functions. Thus, care should be taken not to double count their value in economic analysis. In theory, the number of regulation functions would be almost unlimited, but for landscape planning, only those regulation functions are considered that provide services, which have direct and indirect benefits to humans (such as maintenance of clean air, water and soil, prevention of soil erosion and biological control services)." (de Groot 2006, p. 177)
- **"Habitat functions:** Natural ecosystems provide refuge and reproduction-habitat to wild plants and animals and thereby contribute to the (in situ) conservation of biological and genetic diversity and evolutionary processes. As the term implies, habitat functions relate to the spatial conditions needed to maintain biotic (and genetic) diversity and evolutionary processes. The availability, or condition, of this function is based on the physical aspects of the ecological niche within the biosphere. These requirements differ for different species groups, but can be described in terms of the carrying capacity and spatial needs (minimum critical ecosystem size) of the natural ecosystems which provide them." (De Groot 2006, pp. 177-178)
- **"Production functions:** Photosynthesis and nutrient uptake by autotrophs converts energy, carbon dioxide, water and nutrients into a wide variety of carbohydrate structures, which are then used by secondary producers to create an even larger variety of living biomass. This biomass provides many resources for human use, ranging from food and raw materials (fiber, timber, etc.) to energy resources and genetic material." (De Groot 2006, p. 178)
- **"Information functions:** Because most of human evolution took place within the context of undomesticated habitat, natural ecosystems provide an essential 'reference function' and contribute to the maintenance of human health by providing opportunities for reflection, spiritual enrichment, cognitive development, recreation and aesthetic experience." (De Groot 2006, p. 178)

  It should be pointed out that in this context information functions and services refer to natural as well as cultural landscapes.
- **"Carrier functions:** Most human activities (e.g. cultivation, habitation, transportation) require space and a suitable substrate (soil) or medium (water, air) to support the associated infrastructure. The use of carrier functions usually involves permanent conversion of the original ecosystem. Thus, the capacity of natural systems to provide carrier functions on a sustainable basis is usually limited (exceptions are certain types of shifting cultivation and transportation on waterways, which, on a small scale, are possible without permanent damage to the ecosystem)." (De Groot 2006, p. 178)

  In respect to completeness it has to be mentioned that these carrier functions only refer to cultural landscapes (e.g. mining, waste disposal, transportation, tourism facilities, cultivation, habitation).

Table 2 provides an overview of specific functions, ecosystem processes and the goods and service of natural and semi-natural ecosystems.

Table 2: Functions, processes and goods and service of natural and semi-natural ecosystems. Reproduced and slightly adapted from de Groot (2006; adapted from Constanza et al. 1997, de Groot 1992, de Groot et al. 2002).

Functions		Ecosystem processes and components	Goods and services (examples)
Regulation functions		**Maintenance of essential ecological processes and life support systems**	
1	Gas regulation	Role of ecosystems in bio-geochemical cycles (e.g. CO_2/O_2 balance, ozone layer, etc.)	1.1 UVB-protection by O_3 (preventing disease) 1.2 Maintenance of (good) air quality 1.3 Influence on climate (see also function 2)
2	Climate regulation	Influence of land cover and biol. mediated processes (e.g. DMS-production) on climate	Maintenance of a favourable climate (temp., precipitation, etc.) for, for example, human habitation, health, cultivation
3	Disturbance prevention	Influence of ecosystem structure on dampening environmental disturbances	3.1 Storm protection (e.g. by coral reefs) 3.2 Flood prevention (e.g. by wetlands and forests)
4	Water regulation	Role of land cover in regulating runoff and river discharge	Drainage and natural irrigation
5	Water supply	Filtering, retention and storage of fresh water (e.g. in aquifers)	Provision of water for consumptive use (e.g. drinking, irrigation and industrial use)
6	Soil retention	Role of vegetation root matrix and soil biota in soil retention	6.1 Maintenance of arable land 6.2 Prevention of damage from erosion/siltation
7	Soil formation	Weathering of rock, accumulation of organic matter	7.1 Maintenance of productivity on arable land 7.2 Maintenance of natural productive soils
8	Nutrient regulation	Role of biota in storage and re-cycling of nutrients (e.g. N, P and S)	Maintenance of healthy soils and productive ecosystems
9	Waste treatment	Role of vegetation and biota in removal or breakdown of xeric nutrients and compounds	9.1 Pollution control/detoxification 9.2 Filtering of dust particles (air quality) 9.3 Abatement of noise pollution
10	Pollination	Role of biota in movement of floral gametes	10.1 Pollination of wild plant species 10.2 Pollination of crops
11	Biological control	Population control through trophic-dynamic relations	11.1 Control of pests and diseases 11.2 Reduction of herbivory (crop damage)
Habitat functions		**Providing habitat (suitable living space) for wild plant and animal species**	
12	Refugium function	Suitable living space for wild plants and animals	Maintenance of biological and genetic diversity (and, thus, the basis for most other functions)
13	Nursery function	Suitable reproduction-habitat	Maintenance of commercially harvested species
Production functions		**Provision of natural resources**	
14	Food	Conversion of solar energy into edible plants and animals	14.1 Hunting, gathering of fish, game, fruits, etc. 14.2 Small-scale subsistence farming and aquaculture
15	Raw materials	Conversion of solar energy into biomass for human construction and other uses	15.1 Building and Manufacturing (e.g. lumber) 15.2 Fuel and energy (e.g. fuel wood) 15.3 Fodder and fertilizer (e.g. krill)
16	Genetic resources	Genetic material and evolution in wild plants and animals	16.1 Improve crop resistance to pathogens and pests 16.2 Other applications (e.g. health care)
17	Medicinal resources	Variety in (bio)chemical sub-stances in, and other medicinal uses of, natural biota	17.1 Drugs and pharmaceuticals 17.2 Chemical models and tools 17.3 Test and essay organisms

Functions		Ecosystem processes and components	Goods and services (examples)
18	Ornamental resources	Variety of biota in natural ecosystems with (potential) ornamental use	Resources for fashion, handicraft, jewellery, pets, worship, decoration and souvenirs (e.g. feathers, furs, ivory, orchids, butterflies, aquarium fish, shells, etc.)
Information functions		**Providing opportunities for cognitive development**	
19	Aesthetic information	Attractive landscape features	Enjoyment of scenery (scenic roads, housing, etc.)
20	Re-creation	Variety in landscapes with (potential) re-creational uses	Travel to natural ecosystems for eco-tourism and (re-creational) nature study
21	Cultural and artistic information	Variety in natural features with cultural and artistic value	Use of nature as motive in books, film, painting, folklore, national symbols, architect, advertising, etc.
22	Spiritual and historic information	Variety in natural features with spiritual and historic value	Use of nature for religious or historic purposes (i.e. heritage value of natural ecosystems and features)
23	Science and education	Variety in nature with scientific and educational value	23.1 Use of natural systems for school excursions, etc. 23.2 Use of nature for scientific research
Carrier functions		**Providing a suitable substrate or medium for human activities and infrastructure**	
24	Habitation	Depending on the specific land use type, different requirements are placed on environmental conditions (e.g. soil stability and fertility, air and water quality, topography, climate, geology, etc.)	Living space (ranging from small settlements to urban areas)
25	Cultivation		Food and raw materials from cultivated land and aquaculture
26	Energy-conversion		Energy-facilities (solar, wind, water, etc.)
27	Mining		Minerals, oil, gold, etc.
28	Waste disposal		Space for solid waste disposal
29	Transportation		Transportation by land and water
30	Tourism-facilities		Tourism-activities (outdoor sports, beach-tourism, etc.)

5. Green Infrastructure and Multifunctionality

Green infrastructure (GI) is supported by the science of landscape services. A quick look through the landscape functions and services above reveals that there are multiple services that benefit society that can be delivered by an ecosystem type. If we as society are to plan strategically for the future we need to plan where those services are needed most or where it is necessary to create new ecosystems, habitats and greenspaces to meet those needs.

Green infrastructure approaches to land-use planning promote the widest range of functions and services which can be performed by the same asset, unlocking the greatest number of benefits. Such an approach enables us to demand more from the land in a sustainable way; by helping to identify when it can provide multiple benefits and to manage the many, often conflicting, pressures for housing, industry, transport, energy, agriculture, nature conservation, recreation and aesthetics. It also highlights where it is important to retain and protect single or limited land use functions and services such as primary production or high value nature areas.

Landscape Institute (2009), adapted

The multifunctional nature of GI means that it delivers multiple services that meet multiple needs. The types of GI that are needed depend on the human and environmental needs of the location. Inner cities for example require space for recreation and climate services such as reducing heat island effect and managing rainfall run-off. Areas of a more rural nature may require 'wilder' habitats to improve connectivity between core areas of wildlife value such as Natura 2000 sites or buffering of agricultural land to reduce run-off of pesticides and fertilisers into water-bodies or to aid with pollination and pest control.

Landscapes and greenspaces need to be planned with multifunctionality in mind and consider the local needs and how best they can be delivered by elements of GI within a space and/or the landscape.

Well-planned and multifunctional greenspace and landscape elements can help meet the objectives of multiple sectors and providers and help to solve local problems such as climate change mitigation, access to greenspace, remediation of contaminated, derelict or abandoned land. Involvement of different sectors and inter-sectoral cooperation can enable multiple funding sources to be accessed, reducing the financial burden on a single sector or provider.

6. Benefits of Green Infrastructure

Successful implementation of green infrastructure (GI) projects is dependent on the support of a wide range of stakeholders. These include planners, investors, communities and policy and decision-makers many of whom may not be familiar with the concept of landscape or ecosystem services and may find its scientific approach somewhat alien and understandably perhaps somewhat overly complicated and academic. It is therefore often useful to frame those services in terms of benefits that are more easily identified by stakeholders outside of the scientific realm. Having a clear set of recognisable benefits can make communicating the concept of green infrastructure simpler and more effective. Understanding the benefits that GI can provide (Figure 4) is also key in identifying needs and locations for green infrastructure investment.

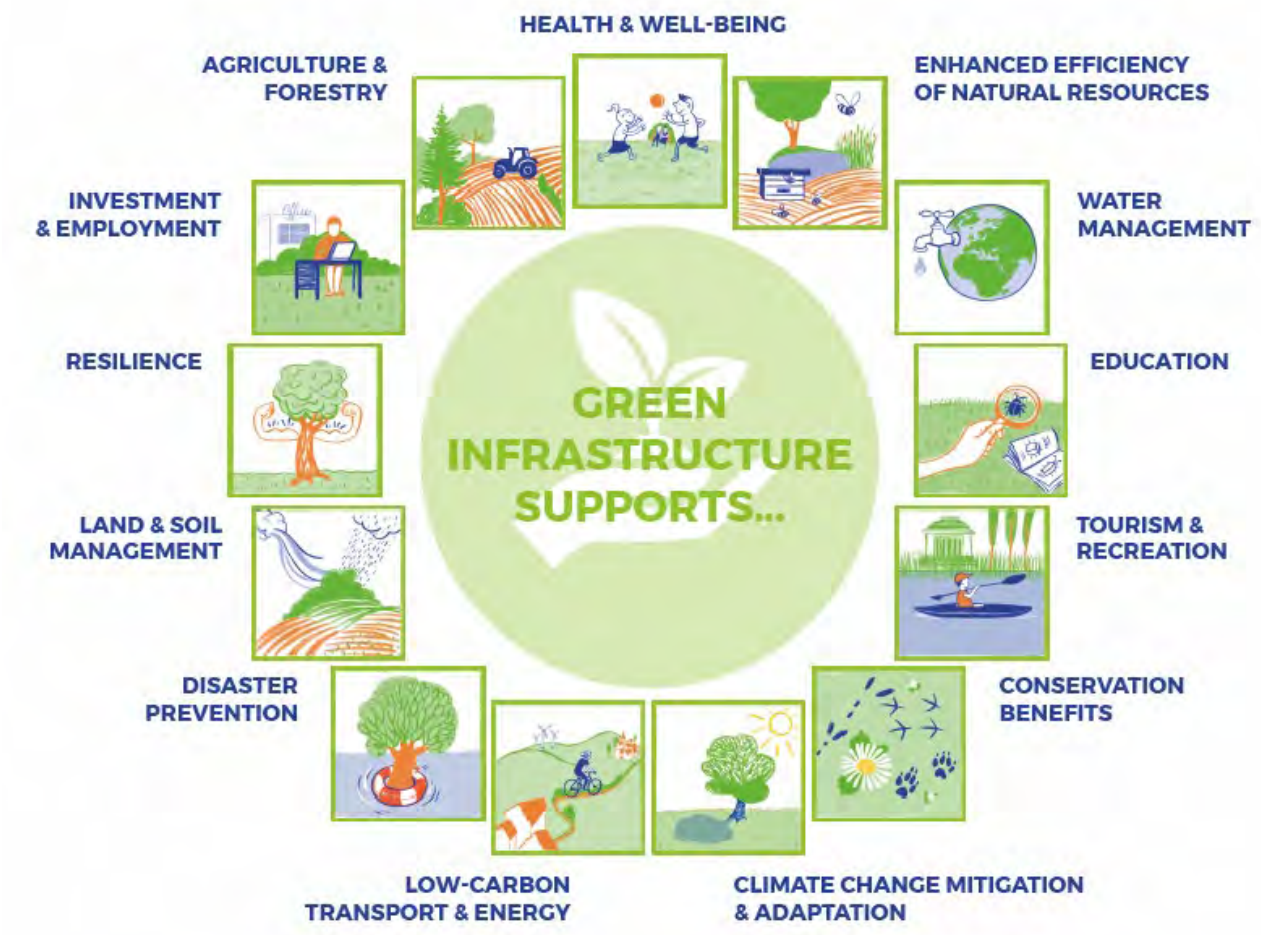

Figure 4: Groups of Benefits of Green Infrastructure (based on European Commission 2013b)

In their Technical Information on Green Infrastructure the European Commission defined 13 groups of GI benefits (Figure 4, European Commission 2013b). These benefit groups are described in the following and examples of landscape services belonging to the respective group are given.

Health and Well-being

Green infrastructure such as parks, woodlands and open spaces have been shown to have a positive effect on our health and well-being. It provides space for us to relax and/or exercise, having a positive effect on our physical and mental health (van den Berg 2015). Increased access to quality green spaces in areas with limited spaces can reduce health inequalities between communities and neighbourhoods. In the United Kingdom a study identified a correlation between human health, in this case obesity, and access to green space where people with access to green space had lower levels of obesity (Sakar 2017). Similarly it has be shown that there is positive relationship between living in areas of green space and cardiovascular mortality (Gascon et al. 2016).

It can also aid in reducing air pollution through absorption, deposition and dispersal of airborne pollutants and thus protecting our health. In Barcelona it is estimated that 305.6 tons of airborne pollution was removed in 2008 by the city's trees (Chaparro & Terradas 2009). Those pollutants included ozone (O_3), sulphur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO) and particulate matter (PM). Green walls, trees and hedges (Al-Dabbous and Kumar 2014) can all contribute to improving air quality as well as helping to reduce noise pollution.

"*The use of vegetation can participate to hampering noise propagation by absorbing or diffracting noise. There is also evidence that the presence of vegetation influences noise perception, regardless of its real effectiveness in reducing noise.*" (ten Brink et al. 2016)

Green spaces are also an important location for social interaction and community activities, promoting social interaction and community cohesion. Social cohesion and physical activity have been shown to have a positive effect on human mental health (Dzhambrov et al. 2018).

Landscape services providing this benefit include: Recreation, Aesthetic Information, Local Climate regulation, and Gas Regulation.

Enhanced Efficiency of Resources

The use of green infrastructure approaches can improve the efficiency of natural resources. An example is the use of GI elements in the landscape to maintain soil fertility through reducing soil loss brought about by drying-out and erosion by wind and water. Green infrastructure elements such as hedgerows and wildflower strips in the agricultural landscape aid in pollination and provide habitat for the natural predators of agricultural pests (Bommarco et al. 2013). Green infrastructure or in this case blue infrastructure is an important part of maintaining freshwater resources through the creation of water-bodies such as ponds and swales and by increasing ground-water recharge through reducing rainfall run-off.

Green Infrastructure and enhanced efficiency of resources

The Czech concept of Territorial System of Ecological Stability (TSES) primarily tries to ensure presence and connectivity of natural or semi-natural habitats. As such it not only protects the existing GI elements but also introduces new ones in forms of bio-centres (patches) and bio-corridors (strips). These new GI elements serve not only as a refugium for organisms but also as a barrier for wind or as a sink for water. This is important especially in intensively used agricultural landscapes. The creation of these new elements started already in 1990 and has spread since then. One example of newly built bio-corridor was realised in 2009-2011 in the landscape of Šardice village (CZ). 5,000 trees, mainly oak, lime and hornbeam, and 5,000 shrubs, were planted on an area of 31 ha.

Photos by Hana Skokanová, adapted from Act No. 114/1992 Coll. on the Conservation of Nature and Landscape (see chapter B, section 3.2.1) and AdaptaN Project Group (2015a)

Landscape services providing this benefit include: Soil Retention, Soil Formation, Nutrient Regulation, Pollination, Cultivation, Food, Raw Materials, Genetic resources, and Biological Control

Water Management

The application of green infrastructure (GI) is beneficial in water management, not only in reducing the rate at which rainfall run-off enters the river network but also helping to protect waterbodies from pollution. Run-off from agricultural land often contains pesticides and fertilisers as well as sediment and is likely to increase due to climate change (Boxall et al. 2009). By providing a natural buffer between the farmland and river courses and other waterbodies the amount of run-off reaching them and altering their chemistry can be reduced. Reducing agricultural and domestic discharges into waterbodies can reduce the likelihood of blue-green algae blooms which are detrimental to human (WHO 2017) and livestock health (Beasley et al. 1989) as well as for aquatic life. In the urban/peri-urban areas run-off from roads can also be managed and 'filtered' by GI elements before it enters any watercourse. Shallow lakes are also vulnerable to excessive nutrients and under current climate predictions will need to have a reduced intake to avoid the negative effects (Mooij et al. 2007).

Green infrastructure can reduce rainfall run-off, slowing down the flows across the landscape/townscape and enabling groundwater reserves to be recharged rather than the water draining away through the river system at high volumes during high rainfall events.

Green Infrastructure and Rainfall Management

In Seattle in the North Western United States the Seattle Public Utilities piloted a project in 2001 to reduce rainfall run-off from a residential street and to protect local streams inhabited by salmon. In Seattle storm water run-off has had a major impact on streams and their wildlife. Through the use of green infrastructure elements such as swales, trees, bushes and by reducing impervious surfaces the total volume of run-off following a storm leaving the street was reduced by 99%. This has helped reduce the load on the wastewater system and helped protect the streams.

adapted from City of Seattle (2018)

In urban and peri-urban areas with their high percentage of sealed surface rainfall run-off can put pressure on wastewater systems which can often lead to the discharge of untreated material into watercourses. Slowing down and storing water in the urban/peri-urban environment can help prevent this. Green roofs, Sustainable Urban Drainage Systems (SUDS), balance ponds and ephemeral wetlands can all help to reduce the rate of run-off.

Extraction of groundwater and the 'drying' out of some soil-types has severe consequences for the stability of buildings and other structures. Using GI to replenish the groundwater and soil moisture can help reduce this risk.

Green infrastructure has be used to reduce the amount of contaminants such as lead, copper and zinc entering watercourses. The use of bioretention ponds has been shown to significantly reduce the level of contaminants reaching watercourses (Davis et al. 2003), (Stagge et al. 2012). The use of GI to intercept contaminated run-off from landfill sites has also been shown to be effective and has the added benefit of helping to sustain biodiversity

Landscape services providing this benefit include: Water Supply, Soil Retention, Local Climate Regulation, and Disturbance Regulation.

Education

Green infrastructure provides a place for learning, whether this is formal learning as part of a curriculum for structured schooling or informal/uncontrolled learning or play as it used to be called. Experiencing and understanding nature is a vital part of protecting it and our future use of the environment (Otto & Pensini 2017). Disconnection or isolation from nature can only serve to devalue its worth for those not experiencing it, whereas attachment to the natural environment promotes pro-environmental behaviour (Scannell & Gifford 2010). In our modern era technology, media and perception of safety as well as limited access to green spaces has changed the way children play and therefore learn. Gill (2005) provides an analogy and one that we should perhaps take notice of.

"*…children are disappearing from the outdoors at a rate that would make the top of any conservationist's list of endangered species if they were any other member of the animal kingdom…*" (Gill 2005)

For schools and pre-schools with a limited amount of space in their grounds the local green spaces, natural or formal, provides the setting for a wider variety of educational activities as well as physical activities. Access to green space for children has be shown to be associated with improved mental health, overall health and the cognitive development of children (McCormick 2017).

Green Infrastructure and Education

The forest kindergarten (Czech: Lesní mateřská školka) "Radovánky" in Kyjov (CZ) is situated in Kyjovsko. It is an outdoor education area in the Boršov Meadows on the outskirts of the town. The area was previously unmanaged meadows and orchards until October 2013. It was transformed into an educational resource for the community of Kyjov with the help of the Czech Union of Nature Conservation (Czech: Český svaz ochranců přírody) that promotes outdoor educational activities and graduates on a vocational training course. Activities taking place there include art activities and creative workshops and has stimulated the renewed management of the meadows and orchards. The site is an excellent example of a community-based scheme set in a green infrastructure setting providing benefits such as education, food production, community interaction and health and well-being and bringing added value to the green infrastructure resource of Kyjov.

Photos by Anke Hahn, Ambrozek (2018), personal communication

Landscape services providing this benefit include: Aesthetic Information, Science and Education, Recreation, and Spiritual and Historic Information.

Tourism and Recreation

Green infrastructure (GI) can provide the settings for tourism and recreational assets and GI elements such as nature reserves are often part of the existing tourism interest, examples being the Rio Formosa Natural Park in Faro, Portugal or Lago di Candia near Turin. Formal parks such as Hyde Park in London, Letná Park in Prague, Wiener Prater in Vienna or Skaryszewski Park in Warsaw are all part of the tourism infrastructure and perform multiple functions including climate control and supporting biodiversity.

Creating new or enhancing natural GI elements in areas with an existing tourism industry can provide alternative tourism products, such as river-based activities (Everard & Moggridge 2011). In cities, especially when considering the impact of climate change, GI enhancements can increase the attractiveness of urban areas for tourism through enhancing their image and combating the negative effects of climate change such as raised temperatures.

GI can provide linking networks for sustainable transport options such as cycling and walking, this has implications for health, air quality (Beckett et al. 1998), tourism offer and reducing vehicle usage especially where commuting routes are considered. Walking and cycling routes between heritage and cultural destinations can be a destination in themselves and provide an alternative to other perhaps less-sustainable transportation.

Green Infrastructure and Tourism

The National Forest in the UK was established in 1995 as a not-for-profit organisation. Its goal was to increase the amount of woodland within the English Midlands, an area of limited woodland cover. By 2018 over 8 million trees have been planted and other habitats enhanced or created across over 500 km^2. The area contained some existing visitor destinations but since 1995 there are 330,000 additional visitors using the National Forest annually, contributing an additional £128 million each year, this supports over 500 full time jobs.

adapted from Natural Economy Northwest (2008)

Landscape services providing this benefit include: Tourism Facilities, Water Regulation, Recreation, Science and Education, and Aesthetic Information.

Conservation Benefits

The permeability of the landscape for flora and fauna is essential for a healthy set of ecosystems. Flora and fauna need networks of interconnected habitat in order to thrive, because of the need for distribution, forage and migration (Forman 2003). Without distribution and the ability to move there is little opportunity for genetic exchange with other populations, this can lead to limited gene pools and can leave species vulnerable. A changing climate and warming temperatures will mean that some species may require requires landscapes through which they can move to more suitable climes.

Disturbance events such as floods, drought and fires can reduce species population size, an unconnected patch of habitat affected by such events will not be recolonised as quickly if it is disconnected from other similar habitats (Klar et al. 2012).

In terms of humans, green infrastructure also provides spaces where we can enjoy and appreciate the variety of flora and fauna that nature has to offer. Interaction through enjoyment of nature helps to foster respect and understanding and can help in environmental education.

Green Infrastructure and Biodiversity

The European Wildcat (Felis silvestris silvestris) was believed to be regionally extinct in Austria but since 2007 over 12 DNA samples collected in National Park Thayatal prove the occurance and indicate the return of the European Wildcat to Austria. Central Europe can provide suitable high quality habitats for the wildcat, but the connectivity between those habitats and the possibilty for neighbouring populations to migrate is strictly limited due to missing Green Infrastructure elements. Without any possibilty of exchange between wildcat populations the genetic variety is suffering and the risk of hybridization is rising. Since wildcats will not migrate over a large areas of open land, the requirements of green infrastrure for the European Wildcats are even higher. Nevertheless, the best way to support wildcat populations in central Europe is to improve appropriate connectivity between suitable habitats and therefore Green Infrastructure is of high importance for our wildcat populations.

Freudl (2018), written communication

Landscape services providing this benefit include: Refugium, Nursery, Aesthetic Information, Spiritual and Historic Information, Science and Education, and Water Supply and Regulation.

Climate Change Mitigation and Adaptation

The use of green infrastructure in cooling towns and cities is well-documented, with green areas providing cooling through shade and evapotranspiration from vegetation. As the climate changes and extreme weather events become more frequent and more adverse, there is a need to ensure that urban areas are prepared for increased temperatures. Human health is affected by increased temperatures, this can be through exposure to heat directly or by the effects of heat on airborne pollutants such as elevating ozone levels which has been identified as increasing the symptoms of asthma (Goodman et al. 2018). Some demographic groups are more vulnerable than other such as children and older people. Of the 14,800 deaths in France caused by the 2003 heatwave, around 60% of the victims were over 75 years old (Confalonieri et al. 2007). A population's sensitivity to increased heat should therefore a factor in planning green infrastructure investment. An increasingly older population means that greater attention should be paid to the positive effects of GI in reducing heat-related mortality.

Green infrastructure should also be considered as one of a number of options for the storing/sequestration of carbon from the atmosphere. More vegetation means more carbon stored in plants and animals and in the soils.

For some countries an increased intensity of rainfall events is also likely due to climate change as oceans release more water through evaporation as they warm up and the moisture holding capacity of the air increases as temperatures rise (Mullan et al. 2012). GI elements within both urban and rural areas can help to regulate and store excessive rainfall reducing the volume and duration of flood events.

The likely increase of the intensity of storms due to climate change means that disturbance to natural systems will also increase, such as wildfires and stronger winds. A well connected network of natural spaces enables repopulation of affected areas following disturbance events and better forage and movement opportunities for species affected.

Landscape services providing this benefit include: Local Climate Regulation, Water Regulation, Soil Retention, Water Supply, Refugium, Nursery, and Gas Regulation.

Low-carbon Transport and Energy

Interconnected green infrastructure elements such as park and greenways can provide traffic-free, low-carbon and sustainable transport options whilst providing other functions essential to humans. The provision of safe and healthier transport options can encourage the uptake of walking and cycling, bringing with it additional health well-being benefits. The use of green routes to connect destinations and places of interest, natural, historic and cultural, can help to improve the visitor interest of an area, and again provide alternatives to motorised transport and thus reduce carbon emissions. GI can be used to mitigate against the negative effects of existing transport corridors by reducing noise and air pollution.

Green infrastructure can reduce carbon emissions through the reduced usage of energy an example of which could be the reduction in the use of air-conditioning in towns and cities where planting such as street trees, green walls and green roofs helps to cool buildings by reducing solar radiation absorption. Green roofs are also considered as improving the ability of building to retain heat during cold periods, reducing the energy demand from heating.

Green infrastructure is a key asset and opportunity for absorbing atmospheric carbon dioxide and sequestration. Over the long-term GI can provide carbon-neutral energy through biomass production of fuel crops such as wood e.g. short-rotation forestry of poplar species or *Miscanthus* for example.

Landscape services providing this benefit include: Raw Materials, Energy Conversion, Transportation, Recreation, Tourism Facilities, Local Climate Regulation, and Gas Regulation.

Disaster Prevention

Climate change will increase the total amount of rainfall and the rate/amount of rainfall in heavier events will increase more due to climate change (Pendergrass & Hartmann 2014). Distribution of rainfall is also likely to change with higher intensity rainfall in some areas, less rainfall in others.

Well-planned GI enhanced and/or created in areas of need can help to reduce flood risk by slowing down rainfall run-off by storing water upstream and releasing it over a longer period of time than the rainfall event itself. This also helps to maintain river levels during periods of drought protecting biodiversity and helps to increase groundwater recharge, securing the water supply. Trees and other vegetation add stability to soils, reducing the likelihood of landslides, they also have an important role in reducing the risk of avalanches.

Green Infrastructure and Disaster prevention

Restoration or creation of wetlands is an excellent example how to contribute to disaster prevention not only in terms of flood reduction but also in helping to increase groundwater recharge. A project of creating a wetland with combination of other GI elements in an intensively used agricultural landscape of Kyjovsko region (CZ) was realized in 2007 with the help of Czech national programme Landscape Care managed by Ministry of Environment. Realisation of a wetland not only contributed to increasing landscape's water retention but also it helped to restore spring of Lúčkový creek, improve its water quality, decrease the amount of soil erosion, increase landscape diversity and help in science and education.

Photos by Marek Havlíček, dapted from AdaptaN Project Group (2015b)

Landscape services providing this benefit include: Soil Retention, Water Regulation, and Local Climate Regulation.

Land and Soil Management

With extreme rainfall events likely to increase but with an overall reduction in rainfall over the year and an increase in the duration of sunshine, it is probably that soils will become drier (Routshek et al. 2014). This leaves soils vulnerable to erosion, firstly because of the increase water flows during extreme rainfall events and secondly because the weakened stability of drier soils (Nearing et al. 2004). Drier soils are also more vulnerable to erosion by wind. This presents problems for food production and also for off-site issues such as an increase in soils entering water courses posing problems for water quality (Mullan 2013) and wildlife and air quality issues.

Green infrastructure within the agricultural landscape can help to reduce the moisture and soil losses. Wind breaks such as hedgerows and small woodland strips can reduce the air-flow across land, this reduces moisture loss and soil loss during dry periods.

Soil-sealing by 'grey' infrastructure can alter the amount of water being absorbed by the ground, green areas designed to hold and slowly release water can help mitigate against this.

Green Infrastructure and Reduction of Soil Erosion

One of the measures how to decrease soil erosion in intensively used agricultural landscape is to divide large blocks of arable land into smaller ones by introducing grassed strips of land. These strips not only help in reduction of soil erosion but also serve as a support for biodiversity, enhance local climate and landscape character. Between 2010 and 2013 in the landscape of Nenkovice village (CZ), a 25 m wide strip of grassland was created and was enriched for trees (in order to stop farmers from ploughing it) and a path for people.

adapted from AdaptaN Project Group (2015c)

Green infrastructure approaches provide ideal, workable and long-lasting solutions in dealing with land regeneration/restoration, specifically mineral extraction sites and landfills. Land-use options on landfill sites is very limited, a multifunctional approach to their regeneration can deliver numerous benefits for local communities and wildlife.

Green Infrastructure and Land Remediation

The Mousley Bottom landfill site in New Mills, Derbyshire, UK was a working site until the mid-1980s. Following decommission the site was sealed with an earthen cap and trees were planted. For much of the 1990s the site remained unmanaged and unloved. Its location close to the centre of New Mills, in the river valley and on the Mid-Shires recreational route meant the 11 ha site was an important and yet unmanaged green infrastructure asset. Since the early 2000's the site has been managed to the benefit of the local community and for wildlife and was awarded Local Nature Reserve Status in 2007.

own experience Marrs and Finn (2018), written communication

Landscape services providing this benefit include: Soil Retention, Soil Formation, Water Supply and Regulation, Nutrient Regulation, Pollination, Raw Materials, and Local Climate Regulation.

Resilience

Ecosystems can undergo disturbances that affect their ability to provide ecosystem services. These disturbances can be short-term such as a flood/fire or long-term stresses such as an oil spill, nutrient enrichment and importantly climate change. The resilience or regenerative capacity of an ecosystem in terms of its services/functions is its ability to 'bounce-back' after short-term disturbances and to withstand and recover from long-term stresses and ideally return to its original state, though this may involve a number of stages/states and time.

In terms of biodiversity resilience can be seen as a species' ability to regenerate, recolonise or survive disturbances. The larger the species' population and therefore intra-genetic variability the more likely it is the species will be resilient. Recolonization after a disturbance event will often, though not always, depend on the accessibility of an area from areas that are home to potential colonists, connectivity between ecosystem types is one way to increase resilience (Oliver et al. 2015).

Habitat/ecosystem patch size is also a key factor in promoting resilience, both in terms of species numbers and the fact that in simple terms a 1 ha fire in a 10 ha woodland is less devastating than a 1 ha in a 2 ha woodland.

Anticipating and assessing where vulnerability exists is key to identifying and prioritising where best green infrastructure investment should take place.

Landscape services providing this benefit include: Disturbance Regulation and Water Regulation.

Investment and Employment

Green infrastructure can provide an attractive setting for employment and opportunities for recreation within a green setting and attractive housing areas are appealing for workers considering moving to an area. Green infrastructure in its many forms can also be the source of employment for example in forestry, management and recreation. Labour productivity is also linked to health and well-being, both physical and mental (ACOEM 2009). Investment is more likely in areas with a healthy population.

From urban beekeeping to organising exercise classes in green space to providing enhanced settings for cultural and historic assets, green infrastructure supports employment and creates opportunities for new businesses. The creation and management of GI also maintains jobs and an increase in the enhancement or creation of GI can only serve to provide more employment opportunities.

Green infrastructure is an important element in the regeneration of neighbourhoods and commercial areas. Attractive, usable and benefit-providing GI assets have been shown to aid in the economic and environmental regeneration of deprived areas.

Green Infrastructure and Employment

'Natura 2000 sites have supported on average about 12 million FTE jobs each year in the EU during the period 2006-2008. This includes about 1.5 million jobs in agriculture, 70,000 jobs in forestry, around 200,000 jobs in fishing, 3.1 million jobs in recreation (excluding employment generated by hotels and restaurants), and 7 million jobs in other industries'

European Commission (2013c)

Landscape services providing this benefit include: Aesthetic Information, Recreation Information, Raw Materials, Cultivation, Tourism Facilities, and Science and Education.

Agriculture and Forestry

In addition to the benefits of retaining soils and moisture for agricultural land, green infrastructure elements within the agricultural landscape can help with productivity as well. In Europe our crop production is highly reliant on pollination by insects and thus our food security is highly dependent on this ecosystem service. Having areas of natural/semi-natural land such as woodland (Kells & Goulson 2009) or riparian habitats (Westphal et al. 2003) close to productive land supports stable populations of pollinators and pest predators (Hänke et al. 2009). Habitat loss has been identified as one of the key drivers of pollinator decline (Winfree et al. 2009).

Green Infrastructure and Agriculture

As study into the effects of climate change on agriculture, in particular rising temperatures, calculated the value of pest control in Austria to be approximately 255 million euros or 8.5 % of the total agricultural plant product value in 2008. Pollination in Austria is worth 298 million Euros, corresponding to 9.9 % of the total agricultural plant product value.

Zulka & Goetzl (2015)

The importance of insects and other animals for pollination is recognised by the European Commission in its EU Pollinators Initiative, in which green infrastructure is identified as being a key strategic element in maintaining and improving pollinator habitats in the wider landscape (European Commission 2018).

Green infrastructure elements in the agricultural landscape can help reduce the impacts of pest species by providing habitat for predators and as part of Integrated Pest Management (Prokopy & Kogan 2009). Integrated Pest Management remains a ‘cornerstone’ of European Commission’s approach and Directive in reducing the use of pesticides (European Commission 2009), though it remains underused by member states (European Commission 2017).

Landscape services providing this benefit include: Soil retention, Cultivation, Raw Materials, Soil Formation, Water Supply and Regulation, Pollination, Local Climate Regulation, Genetic Resources, and Biological Control.

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B. Green Infrastructure in EU Regulations/Programmes and national Laws/Policies

Introduction to the Chapter

At the international and/or European Union (EU) level there are a lot of agreements, directives, programmes or strategies which directly refer to Green Infrastructure (GI), deal with key elements of it or secure the functionality of GI. In its first section this chapter gives an overview of these international and/or EU regulations.

This international section is followed by national sections of the five partner countries in the MaGICLandscapes project: Austria, Czech Republic, Germany, Italy and Poland (in alphabetical order). A number of national laws or policies are based on or partly refer to the international or EU regulations. In some of the five partner countries legislation is the responsibility of the federal states, thus regional laws are also considered, according to the project case study areas (compare chapter C).

Each of the six sections follows the same structure of regulation topics. The regulation topics were selected based on the European Commission Staff Working Document "Technical information on Green Infrastructure (GI)" [SDW(2013) 155 final], which accompanies the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions "Green Infrastructure (GI) — Enhancing Europe's Natural Capital" [COM(2013) 249 final].

These regulation topics are:

- Green Infrastructure
  - → All laws and policies which contain the term Green Infrastructure
- Protection of Nature, Biodiversity and Landscape
  - → Nature and Biodiversity Protection legislation in general, but also more specific laws and policies, such as Biodiversity and Species Protection, Invasive Species Management or the Protection of areas and habitats
  - → Landscape Protection in general, including Protection of Cultural and Natural Heritage
- Environmental Protection
  - → Prevention of negative effects on the environment in general together with laws on Environmental Liability or Environmental Assessment (EIA / SEA)
  - → More specific laws and policies on Water Protection, Air and Climate Protection, Soil Protection
- Economy and Sustainable Development
  - → Laws and policies in the field of Agriculture, Forestry, Hunting and Fishing, Tourism and Recreation, Energy, Sustainable Development
- Spatial Planning
  - → Laws and policies in the field of Regional and Local Planning, Urban Planning, Sectoral Planning, Access to Information on the Environment and Public Participation

For all national laws and/or policies of the partner countries listed in this handbook, the English title, the original title in the corresponding national language, an internet link to the online source as well as a brief description of the content are provided. Where the description contains no citation the information has been extracted from the respective law or policy text. Some laws with limited reference to GI or its functionality are included too, but are presented in a smaller font size. Nevertheless, this list of laws and

policies makes no claim to completeness and is limited to laws and policies concerning the land surface and inland waterways/bodies. It does not cover marine environments.

In the following matrix table (Table 3), the presence of international/EU regulations/programmes and laws/policies of the individual partner countries/regions (columns) is assigned to the regulation topics or subtopics (lines). However, the corresponding laws within a line can vary greatly in detail despite similar protection goals.

The cells of the matrix table contain links to the specific section or subsection. It is distinguished between laws directly related to GI or GI elements (marked by "GI") and laws that are more focused on securing the functionality of GI (marked by "F"), such as laws regulating environmental conditions.

Table 3: Protection of Green Infrastructure (GI) or its Functionality (F) by regulations, laws and policies at different levels

Regulation Topic	Global or regional international regulations	EU	AT	AT, Lower Austria	CZ	DE	DE, Saxony	IT	IT, Pied-mont	PL
Green Infrastructure		GI	GI	GI	GI	GI				GI
Protection of Nature, Biodiversity and Landscape										
Nature and Biodiversity Protection (in general)				GI	GI	GI	GI			GI
Biodiversity Protection	GI	GI	GI		GI	GI	GI	GI	GI	
Species Protection	GI	GI		GI	GI	GI	GI	GI		GI
Invasive Species Management		F		F	F	F	F	F		F
Protection of areas/habitats	GI	GI		GI	GI	GI	GI	GI	GI	GI
Landscape Protection		GI		GI	GI	GI	GI	GI	GI	GI
Protection of Cultural and Natural Heritage	GI	GI					GI		GI	GI
Environmental Protection										
Prevention of harmful Effects on the Environment (in general)		F		F	F	F GI		F		F
Environmental Liability		F	F	F	F	F		F		F
Environmental Assessment (EIA/SEA)	F	F	F		F	F	F	F	F	
Water Protection	GI	GI F	GI		GI	GI F	GI F	GI F	F	GI
Air and Climate Protection		F	F		F	F	F			F
Soil Protection		F		F	F	F	F	F	F	F
Economy and Sustainable Development										
Agriculture		GI		GI	GI	GI	GI			GI
Forestry		GI	GI	GI	GI	GI	GI	GI	GI	GI
Hunting and Fishing		GI F		GI F	GI F	GI F	GI F	F	GI F	GI F
Tourism and Recreation	GI	GI		GI	GI	GI	GI	GI		
Energy		F	F		F	F	F			F
Sustainable Development		F	F		F	F	F	F		F
Spatial Planning										
Regional and Local Planning		F		F	GI F	GI F	GI F		GI F	GI F
Urban Planning		GI		F	GI	GI	GI	GI	GI	GI
Sectoral Planning		F	GI F	F	F	F	F		GI F	GI F
Access to Information on the Environment and Public Participation	F	F	F	F	F	F	F	F	F	F

EU – European Union, AT – Austria, CZ – Czech Republic, DE – Germany, IT – Italy, PL - Poland

1. International Conventions and EU Regulations/ Programmes

Introduction about Green Infrastructure in international Conventions and EU Regulations/Programmes

At the EU level especially several regulations or policies directly refer to Green Infrastructure and support its preservation, enhancement and creation.

Furthermore, many international Conventions and EU Regulations / Programmes focus on certain green infrastructure elements, such as forests or water bodies. On the other hand there are a lot of international Conventions and EU Regulations / Programmes which support the functionality of green infrastructure, such as the potential to mitigate the negative effects of climate change, to improve air quality, to reduce flooding and others.

1.1. Green Infrastructure

EU Regulations

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Green Infrastructure (GI) — Enhancing Europe's Natural Capital - COM (2013) 249 final (Green Infrastructure Strategy)

http://eur-lex.europa.eu/resource.html?uri=cellar:d41348f2-01d5-4abe-b817-4c73e6f1b2df.0014.03/DOC_1&format=PDF

Published in 2013 by the European Commission this Strategy defines the term Green Infrastructure (GI) for its strategic use within the European Union and informs how GI can contribute to achieve a number of key EU policy objectives. It outlines GI as "a successfully tested tool for providing ecological, economic and social benefits through natural solutions", which "can sometimes offer an alternative, or be complementary, to standard grey solutions". The Strategy explicitly promotes investments in Green Infrastructure to sustain and enhance the benefits that nature provides.

Furthermore, the Strategy shows the need for GI to become a standard element of spatial planning and territorial development to better integrate land use, ecosystem and biodiversity concerns. It promotes the development of a Trans-European GI Network (a TEN-G) as an equivalent to the existing networks in grey infrastructure sectors like transport or energy.

The Green Infrastructure Strategy is accompanied by Technical information on Green Infrastructure (see below).

COMMISSION STAFF WORKING DOCUMENT Technical information on Green Infrastructure (GI) - SDW (2013) 155 final

https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52013SC0155&from=EN

This technical Information accompanies the document COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Green Infrastructure (GI) — Enhancing Europe's Natural Capital (see above). The document defines the components of GI and important terms used in conjunction with GI. It gives an overview about the benefits and functions of GI and informs about how the GI topic is connected to European

policies. Furthermore examples of GI initiatives/projects are given.

The following two Communications from the European Commission can be considered as baseline documents for the EU Green Infrastructure Strategy:

- **COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Roadmap to a Resource Efficient Europe - COM(2011) 571 final (Resource Efficiency Roadmap)**

  http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011DC0571

  This Roadmap illustrates what will be needed to reach a resource efficient and sustainable growth and describes short term actions needed to initiate this process. It "provides a framework explaining how policies interrelate and build on each other in which future actions can be designed and implemented coherently". (Communication, p. 3)

  In an Annex Table the inter-linkages between key sectors and resources and their associated EU policy initiatives are outlined.

  The Roadmap identified investing in GI as an important step towards protecting our natural capital and fostered the Commission Communication on Green Infrastructure.

- **COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Our life insurance, our natural capital: an EU biodiversity strategy to 2020 - COM(2011) 244 final (EU 2020 Biodiversity Strategy)**

  http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52011DC0244

  The EU Biodiversity Strategy reflects the commitments taken by the EU in 2010, within the international Convention on Biological Diversity (see Global or Regional International Regulations above). With 6 targets and 20 actions the Strategy aims to halt the loss of biodiversity and ecosystem services in the EU by 2020 and help stop global biodiversity loss.

  The EU Biodiversity Strategy to 2020 includes a commitment for the European Commission to develop a GI strategy. Within the Target 2 of the Biodiversity Strategy "MAINTAIN AND RESTORE ECOSYSTEMS AND THEIR SERVICES", which requires that "[b]y 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15 % of degraded ecosystems", Action 6 is especially to "[s]et priorities to restore and promote the use of green infrastructure".

The following EU policies directly refer to Green Infrastructure:

- **Urban Agenda for the EU, launched with the Pact of Amsterdam (2016)**

  https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam_en.pdf

  Agreed at the Informal Meeting of EU Ministers Responsible for Urban Matters on 30th May 2016 in Amsterdam, The Netherlands, the Pact of Amsterdam sets out an initial list of Priority Themes for the Urban Agenda for the EU. One of these twelve themes is "Climate Adaptation (including Green Infrastructure Solutions)".

- **COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS A Blueprint to Safeguard Europe's Water Resources - COM(2012) 673 final (EU Water Blueprint)**

  http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52012DC0673

  The EU Water Blueprint directly refers to Green Infrastructure (GI) and quotes GI more than once as an

appropriate solution for problems concerning EU waters, their ecological status and vulnerability.

It promotes the use of "green infrastructure such as the restoration of riparian areas, wetlands and floodplains to retain water, support biodiversity and soil fertility, and prevent floods and droughts. This is a valuable alternative to classical grey infrastructure (e.g. embankments, dykes and dams)." (Communication, p. 5)

- **WHITE PAPER Adapting to climate change: Towards a European framework for action - COM(2009) 147 final**

  http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0147:FIN:EN:PDF

  This White Paper directly refers to Green Infrastructure. It quotes Green Infrastructure "a crucial role in adaptation in providing essential resources for social and economic purposes under extreme climatic conditions. Examples include improving the soil's carbon and water storage capacity, and conserving water in natural systems to alleviate the effect of droughts and to prevent floods, soil erosion and desertification".

1.2. Protection of Nature, Biodiversity and Landscape

1.2.1. Nature and Biodiversity Protection

Global or Regional International Regulations

IUCN Protected Areas Categories System

https://www.iucn.org/theme/protected-areas/about/protected-areas-categories

The International Union for Conservation of Nature (IUCN) classifies protected areas according to their management objectives into seven classes. This classification is widely recognised as a kind of global standard for defining and recording protected areas.

Treaty No. 104 - Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention), 19th September 1979

https://www.coe.int/en/web/conventions/full-list/-/conventions/rms/0900001680078aff

"The Bern Convention is a binding international legal instrument in the field of nature conservation, covering most of the natural heritage of the European continent and extending to some States of Africa." (Council of Europe 2018a)

The Bern Convention aims at conserving wild flora and fauna and their natural habitats. As part of its work under the Bern Convention the Council of Europe launched the so called Emerald Network, an ecological network of Areas of Special Conservation Interest.

To fulfil its obligations arising from the Bern Convention and to realise the Emerald Network the European Union set up the Habitats Directive (Council Directive 92/43/EEC, see EU Regulations below) and subsequently the Natura 2000 network.

Convention on the Conservation of Migratory Species of Wild Animals (CMS, Bonn Convention), 23rd June 1979

http://www.cms.int/sites/default/files/instrument/CMS-text.en_.PDF

"As an environmental treaty under the aegis of the United Nations Environment Programme, CMS provides

a global platform for the conservation and sustainable use of migratory animals [terrestrial, aquatic and avian migratory species] and their habitats. CMS brings together the States through which migratory animals pass, the Range States, and lays the legal foundation for internationally coordinated conservation measures throughout a migratory range." (UNEP/CMS Secretariat 2018)

Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), November 1995

http://www.unep-aewa.org/sites/default/files/basic_page_documents/aewa_agreement_text_2016_2018_FINAL_correction%20made%20on%20p%2054_wcover.pdf

Developed under the framework of the Convention on Migratory Species (CMS, see above), the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) is aiming at the conservation of migratory waterbirds and their habitats throughout their entire migratory range across Africa, Europe, the Middle East, Central Asia, Greenland and the Canadian Archipelago (UNEP/AEWA Secretariat 2018).

Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention), 1972

http://whc.unesco.org/archive/convention-en.pdf

"The most significant feature of the 1972 World Heritage Convention is that it links together in a single document the concepts of nature conservation and the preservation of cultural properties. The Convention recognizes the way in which people interact with nature, and the fundamental need to preserve the balance between the two." (UNESCO World Heritage Centre 2019)

Man and the Biosphere Programme (MAB):

MAB Strategy (2015-2025), Lima Action Plan (2016-2025) and Lima Declaration

http://unesdoc.unesco.org/images/0024/002474/247418E.pdf

The Man and the Biosphere Programme (MAB) is a programme of the United Nations Educational, Scientific and Cultural Organization (UNESCO). Launched in 1971, it forms the basis for the World Network of Biosphere Reserves. MAB "is an Intergovernmental Scientific Programme that aims to establish a scientific basis for the improvement of relationships between people and their environments. MAB combines the natural and social sciences, economics and education to improve human livelihoods and the equitable sharing of benefits, and to safeguard natural and managed ecosystems, thus promoting innovative approaches to economic development that are socially and culturally appropriate, and environmentally sustainable." (UNESCO 2017)

Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention)

The 4th Strategic Plan 2016 – 2024

http://www.ramsar.org/sites/default/files/documents/library/scan_certified_e.pdf

https://www.ramsar.org/sites/default/files/documents/library/4th_strategic_plan_2016_2024_e.pdf

As written in the Strategic Plan the Mission of the Ramsar Convention is the "conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world. To achieve this Mission it is essential that vital ecosystem functions and the ecosystem services they provide to people and nature are fully recognized, maintained, restored and wisely used."

The Strategic Plan lays out four overall goals and 19 specific targets which are designed to support the prevention, halt and reversion of the global decline of wetlands. Its goals and targets also contribute to

achieve the Sustainable Development Goals (SDG, see section 1.4.6) and targets.

Alpine Convention, 1991

Protocols to the Alpine Convention

http://www.alpconv.org/en/convention/framework/Documents/Framework_en.pdf

http://www.alpconv.org/en/convention/protocols/default.html

Entered into force on March 1995, the Alpine Convention contains general measures for the sustainable development of the Alpine region. It is a framework that sets out the basic principles. Specific measures implementing these basic principles are contained in the Protocols to the Alpine Convention, which cover many different issues like nature protection and landscape conservation, soil conservation, mountain farming, mountain forests, tourism, energy, spatial planning and sustainable development and transport.

Convention on Biological Diversity (CBD), 1992

Strategic Plan 2011-2020, including Aichi Biodiversity Targets

https://www.cbd.int/doc/legal/cbd-en.pdf

https://www.cbd.int/doc/strategic-plan/2011-2020/Aichi-Targets-EN.pdf

The objectives of the Convention on Biological Diversity (CBD) are:

- the conservation of biological diversity,
- the sustainable use of its components and
- the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.

The Strategic Plan includes the 20 so-called Aichi Biodiversity Targets. It serves as a flexible ten-year framework for the establishment of national and regional targets and action by all countries and stakeholders. The Strategic Plan and Aichi Targets promote the coherent and effective implementation of the three objectives of the Convention on Biological Diversity.

EU Regulations

COUNCIL DECISION 82/72/EEC concerning the conclusion of the Convention on the conservation of European wildlife and natural habitats

http://extwprlegs1.fao.org/docs/texts/eur4186.doc

With this Council Decision the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention, see above) is approved on behalf of the European Economic Community.

COUNCIL DIRECTIVE 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive)

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31992L0043&from=EN

According to Article 2 of the Habitats Directive the aim of this Directive shall be to contribute towards ensuring bio-diversity through the conservation of natural habitats and of wild fauna and flora in the territory of the EU Member States. "Measures taken pursuant to this Directive shall be designed to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest." These measures shall consider the economic, social and cultural requirements and regional and local characteristics as well.

Special Areas of Conservation (SAC) shall be set up. Those are sites hosting the natural habitat types listed

in Annex I of the Directive and habitats of the species listed in Annex II of the Directive. They shall enable the natural habitat types and the species' habitats to be maintained or, where appropriate, restored to a favourable conservation status in their natural range.

Together with the Special Protection Areas (SPAs) of the Birds Directive (see below) the Special Areas of Conservation (SAC) of the Habitats Directive form the EU wide Natura 2000 ecological network of protected areas.

DIRECTIVE 2009/147/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 30 November 2009 on the conservation of wild birds (Birds Directive)

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0147&from=EN

This Directive aims at the conservation of all species of naturally occurring birds in the wild state in the territory of the EU Member States. It covers the protection, management and control of these species and shall apply not only to birds but also to their eggs, nests and habitats. The EU Member States shall take the requisite measures to preserve, maintain or re-establish a sufficient diversity and area of habitats for all the species of birds. This shall include primarily the following measures:

- creation of protected areas, the so-called Special Protection Areas (SPAs)
- upkeep and management in accordance with the ecological needs of habitats inside and outside the protected zones
- re-establishment of destroyed biotopes
- creation of biotopes

Together with the Special Areas of Conservation (SAC) of the Habitats Directive (see above) the Special Protection Areas (SPAs) of the birds Directive form the EU wide Natura 2000 ecological network of protected areas.

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Our life insurance, our natural capital: an EU biodiversity strategy to 2020 - COM(2011) 244 final (EU 2020 Biodiversity Strategy)

http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52011DC0244

The EU Biodiversity Strategy reflects the commitments taken by the EU in 2010, within the international Convention on Biological Diversity (see Global or Regional International Regulations above). With 6 targets and 20 actions the Strategy aims to halt the loss of biodiversity and ecosystem services in the EU by 2020 and help stop global biodiversity loss.

Beside the Resource Efficiency Roadmap (see section 1.1 and 1.4.6) the EU Biodiversity Strategy to 2020 is one of the baseline documents for the EU Green Infrastructure Strategy (see section 1.1), which includes a commitment for the European Commission to develop a GI strategy. Within the Target 2 of the Biodiversity Strategy "MAINTAIN AND RESTORE ECOSYSTEMS AND THEIR SERVICES", which requires that "[b]y 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15 % of degraded ecosystems", Action 6 is especially to "[s]et priorities to restore and promote the use of green infrastructure".

REGULATION (EU) No 1143/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species (IAS Regulation)

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R1143&from=DE

COMMISSION IMPLEMENTING REGULATION (EU) 2016/1141 of 13th July 2016 adopting a list of invasive alien species of Union concern

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R1141

COMMISSION IMPLEMENTING REGULATION (EU) 2017/1263 of 12th July 2017 updating the list of invasive alien species of Union concern

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1263

According to Article 1 of the Regulation "[t]his Regulation sets out rules to prevent, minimise and mitigate the adverse impact on biodiversity of the introduction and spread within the Union, both intentional and unintentional, of invasive alien species."

The Regulation contains three distinct types of measures to combat Invasive Alien Species:

- Prevention of introduction or spread of invasive alien species of Union concern
- Early detection and rapid eradication of invasive alien species of Union concern to prevent them from establishing
- Management of already well-established and widely spread invasive alien species that they do not spread any further and to minimise the harm they cause

1.2.2. Landscape Protection

Global or Regional International Regulations

Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention, 1972)

http://whc.unesco.org/archive/convention-en.pdf

See section 1.2.1

Convention for the Protection of the Architectural Heritage of Europe (Granada Convention, 1985)

https://www.coe.int/en/web/conventions/full-list/-/conventions/rms/090000168007a087

"The main purpose of the Convention is to reinforce and promote policies for the conservation and enhancement of Europe's heritage." (Council of Europe 2018b)

Architectural heritage according to this Convention includes not only monuments and buildings but also sites with the combined works of man and nature.

"It is open for signature by member states and for accession by non-member states and the European Community." (Council of Europe 2018b)

European Landscape Convention (Florence Convention, 2000)

https://www.coe.int/en/web/conventions/full-list/-/conventions/rms/0900001680080621

"The European Landscape Convention of the Council of Europe promotes the protection, management and planning of the landscapes and organises international co-operation on landscape issues." (Council of Europe 2018c)

It was adopted on 20th October 2000 in Florence (Italy) and came into force on 1st March 2004 (Council of Europe Treaty Series no. 176). "It is open for signature by member states of the Council of Europe and for accession by the European Community and European non-member states." (Council of Europe 2018b)

1.3. Environmental Protection

1.3.1. Prevention of harmful Effects on the Environment

Global or Regional International Regulations

Convention on Environmental Impact Assessment in a Transboundary Context (Espoo or EIA Convention, 1991)

Protocol on Strategic Environmental Assessment (SEA Protocol, 2003)

https://www.unece.org/fileadmin/DAM/env/eia/documents/legaltexts/Espoo_Convention_authentic_ENG.pdf

https://www.unece.org/fileadmin/DAM/env/eia/documents/legaltexts/protocolenglish.pdf

"The Espoo (EIA) Convention sets out the obligations of Parties to assess the environmental impact of certain activities at an early stage of planning. It also lays down the general obligation of States to notify and consult each other on all major projects under consideration that are likely to have a significant adverse environmental impact across boundaries." (UNECE 2019a)

"It was complemented by the Protocol on Strategic Environmental Assessment (Kyiv, 2003)" (UNECE 2019a)

The objective of the SEA Protocol is to provide for a high level of protection of the environment, including health. It ensures that environmental and health considerations are taken into account in the development of plans and programmes as well as in the preparation of policies and legislation. According to this Protocol clear, transparent and effective procedures for strategic environmental assessment should be established. The Protocol also provides for public participation in strategic environmental assessment and refers to the Aarhus Convention (see section 0).

EU Regulations

DECISION No 1386/2013/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 20 November 2013 on a General Union Environment Action Programme to 2020 'Living well, within the limits of our planet' (7th EAP)

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013D1386

According to Article 2 of the Decision priority objectives of the 7th EAP are among others to protect, conserve and enhance the European Union's natural capital, to turn the EU into a resource-efficient, green and competitive low-carbon economy, to safeguard citizens from environment-related pressures and risks to health and well-being, to enhance the sustainability of the Union's cities and to increase the Union's effectiveness in addressing inter-national environmental and climate-related challenges.

DIRECTIVE 2004/35/CE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage (ELD)

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02004L0035-20130718&from=EN

According to Article 1 of the Directive its purpose is to establish a framework of environmental liability based on the 'polluter-pays' principle, to prevent and remedy environmental damage.

Environmental damage, according to the Directive, is defined as:

- damage to protected species and natural habitats that has significant adverse effects on reaching or maintaining their favourable conservation status, except damages already identified in the context of

the Habitats and Birds Directive (see section 1.2.1),

- damage to water that significantly adversely affects the ecological, chemical or quantitative status or the ecological potential, as defined in the Water Framework Directive (see section 1.3.2), of the waters concerned,
- land damage (including the characteristics and functions of soil), which is any land contamination that creates a significant risk of human health.

ANNEX II of the Directive "sets out a common framework to be followed in order to choose the most appropriate measures to ensure the remedying of environmental damage".

DIRECTIVE 2011/92/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (codification)

https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:32011L0092

This Directive codifies the initial Directive of 1985 (Council Directive 85/337/EEC of 27 June 1985) and its three amendments of 1997, 2003 and 2009 and "shall apply to the assessment of the environmental effects of those public and private projects which are likely to have significant effects on the environment" (Article 1 of the Directive). It refers to the Espoo Convention (see Global or Regional International Regulations above) and the Aarhus Convention (see section 0).

DIRECTIVE 2014/52/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (Environmental Impact Assessment Directive – EIA Directive)

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0052

This Directive amends the Directive 2011/92/EU (see above) and simplifies the rules for assessing the potential effects of projects on the environment. It pays greater attention to threats and challenges that have emerged since the initial Directive of 1985 came into force. More attention in the assessment process is now paid to resource efficiency, climate change and disaster prevention (European Commission 2017).

DIRECTIVE 2001/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (Strategic Environmental Assessment Directive – SEA Directive)

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32001L0042

The SEA Directive transposes the Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo or EIA Convention, see Global or Regional International Regulations above) in the EU legislation.

DIRECTIVE 2002/49/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 June 2002 relating to the assessment and management of environmental noise (Environmental Noise Directive – END)

http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32002L0049

According to Article 1 of this Directive its "aim […] shall be to define a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise". This is specified by Article 2 according to which "[t]his Directive shall apply to environmental noise to which humans are exposed in particular in built-up areas, in public parks or other quiet areas in an agglomeration, in quiet areas in open country, near schools, hospitals and other noise-sensitive buildings and areas". Noise maps and action plans for agglomerations, major roads, major railways

and major airports have to be made or approved, every 5 years, by the respective competent authorities.

1.3.2. Water Protection

Global or Regional International Regulations

CONVENTION on the Law of the Non-Navigational Uses of International Watercourses, New York, 21 May 1997 (UN Watercourses Convention - UNWC)

http://legal.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf

According to Article 1 of the Convention it "applies to uses of international watercourses and of their waters for purposes other than navigation and to measures of protection, preservation and management related to the uses of those watercourses and their waters".

CONVENTION on the Protection and use of Transboundary Watercourses and International Lakes done at Helsinki, on 17 March 1992

https://www.unece.org/fileadmin/DAM/env/water/pdf/watercon.pdf

According to Article 2 general provisions of the Convention amongst others are to "ensure that transboundary waters are used with the aim of ecologically sound and rational water management, conservation of water resources and environmental protection" and to "ensure conservation and, where necessary, restoration of ecosystems".

In the Central European context there are many international Conventions on the protection of transboundary watercourses and international lakes, for example:

- **CONVENTION on the International Commission for the Protection of the Elbe (ICPER)**

  http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:21991A1123%2801%29&rid=1

  by the International Commission for the Protection of the Elbe River with the Federal Republic of Germany and the Czech Republic as contracting parties to the ICPER (more information: **https://www.ikse-mkol.org/en/ikse/fokus-2015/**)

- **CONVENTION on cooperation for the protection and sustainable use of the Danube river (Danube River Protection Convention – DRCP)**

  https://www.icpdr.org/flowpaper/viewer/default/files/DRPC%20English%20ver.pdf

  by the International Commission for the Protection of the Danube River with Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Germany, Hungary, Moldova, Montenegro, Romania, Slovakia, Slovenia, Serbia, Ukraine and the European Union as Contracting Parties to the DRPC (more information: **http://www.icpdr.org/main/icpdr/danube-river-protection-convention**)

- **CONVENTION on the International Commission for the Protection of the Oder (ICPO Convention)**

  http://www.mkoo.pl/index.php?mid=1&aid=7&lang=EN

  by the International Commission for the Protection of the Odra River against Pollution with the Government of the Federal Republic of Germany, the Government of the Republic of Poland, the Government of the Czech Republic and the European Community as Contracting Parties (more information: **http://www.mkoo.pl/index.php?mid=1&lang=EN**)

- **Bodensee-Richtlinien 2005 (mit Änderungen vom 13.05.2014)**

  http://www.igkb.org/fileadmin/user_upload/dokumente/publikationen/vorschriften/Bodensee-Richtlinien_2005_2015.pdf

  by the International Commission on water protection of Lake Constance (Internationale Gewässerschutzkommission für den Bodensee - IGKB)

EU Regulations

DIRECTIVE 2000/60/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 October 2000 establishing a framework for Community action in the field of water policy (Water Framework Directive)

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02000L0060-20141120&from=EN

According to Article 1 of this Directive its purpose "is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater". Amongst others a further deterioration should be prevented and the status of aquatic ecosystems as well as terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems should be protected and enhanced. Furthermore a sustainable water use based on a long-term protection of available water resources should be promoted.

Member States have to produce river basin management plans for each river basin district lying entirely within their territory, which are reviewed and updated every six years.

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS A Blueprint to Safeguard Europe's Water Resources - COM(2012) 673 final (EU Water Blueprint)

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52012DC0673

The EU Water Blueprint directly refers to Green Infrastructure (GI) and quotes GI more than once as an appropriate solution for problems concerning EU waters, their ecological status and vulnerability.

It promotes the use of "green infrastructure such as the restoration of riparian areas, wetlands and floodplains to retain water, support biodiversity and soil fertility, and prevent floods and droughts. This is a valuable alternative to classical grey infrastructure (e.g. embankments, dykes and dams)." (Communication, p. 5)

DIRECTIVE 2007/60/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 October 2007 on the assessment and management of flood risks (Floods Directive)

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32007L0060

According to Article 1 of the Floods Directive its "purpose […] is to establish a framework for the assessment and management of flood risks, aiming at the reduction of the adverse consequences for human health, the environment, cultural heritage and economic activity associated with floods in the Community".

Member States shall undertake a preliminary flood risk assessment for each river basin district lying within their territory, prepare flood hazard maps and flood risk maps, establish flood risk management plans and coordinate the application of the Floods Directive and that of the Water Framework Directive (see above).

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL Addressing the challenge of water scarcity and droughts in the European Union – COM (2007) 414 final (EU Drought Policy)

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52007DC0414

"[T]his Communication presents an initial set of policy options at European, national and regional levels to address and mitigate the challenge posed by water scarcity and drought within the Union." (COM, p. 3)

DIRECTIVE 2006/7/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 February 2006 concerning the management of bathing water quality and repealing Directive 76/160/EEC (Bathing Water Directive - BWD)

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:064:0037:0051:EN:PDF

According to Article 1 of this Directive "[t]he purpose […] is to preserve, protect and improve the quality of the environment and to protect human health by complementing Directive 2000/60/EC" (Water Framework Directive, see above), under which bathing waters belong to the protected areas (see ANNEX IV of the Water Framework Directive).

1.3.3. Air and Climate Protection

EU Regulations

DIRECTIVE 2008/50/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 May 2008 on ambient air quality and cleaner air for Europe (Ambient Air Quality Directive)

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:152:0001:0044:en:PDF

According to Article 1 of this Directive it lays down measures aimed amongst others at "defining and establishing objectives for ambient air quality designed to avoid, prevent or reduce harmful effects on human health and the environment as a whole; […] assessing the ambient air quality in Member States on the basis of common methods and criteria; […] obtaining information on ambient air quality in order to help combat air pollution and nuisance and to monitor long-term trends and improvements resulting from national and Community measures; […] maintaining air quality where it is good and improving it in other cases".

WHITE PAPER Adapting to climate change: Towards a European framework for action – COM (2009) 147 final

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0147:FIN:EN:PDF

This White Paper directly refers to Green Infrastructure. It quotes Green Infrastructure "a crucial role in adaptation in providing essential resources for social and economic purposes under extreme climatic conditions. Examples include improving the soil's carbon and water storage capacity, and conserving water in natural systems to alleviate the effect of droughts and to prevent floods, soil erosion and desertification".

1.3.4. Soil Protection

EU Regulations

COMMUNICATION FROM THE COMMISSION TO THE COUNCIL, THE EUROPEAN PARLIAMENT, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Thematic Strategy for Soil Protection - COM(2006) 231 final

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52006DC0231

The overall objective of this Thematic Strategy for Soil Protection is the protection and sustainable use of soil. This should be based on two guiding principles:

- "Preventing further soil degradation and preserving its functions" by action in the field of soil use and management or action at the source when soil acts as a sink/receptor of the effects of human activities or environmental phenomena

- "Restoring degraded soils to a level of functionality consistent at least with current and intended use, thus also considering the cost implications of the restoration of soil" (Communication, p. 5)

DECISION No 1386/2013/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 20 November 2013 on a General Union Environment Action Programme to 2020 'Living well, within the limits of our planet' (7th EAP)

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013D1386

"[T]he Seventh Environment Action Programme […] recognises that soil degradation is a serious challenge. It provides that by 2020 land is managed sustainably in the Union, soil is adequately protected and the remediation of contaminated sites is well underway and commits the EU and its Member States to increasing efforts to reduce soil erosion and increase soil organic matter and to remediate contaminated sites." (European Commission 2016)

1.4. Economy and Sustainable Development

1.4.1. Agriculture

EU Regulations

Common Agricultural Policy (CAP)

https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/cap-glance_en

"Launched in 1962, the EU's common agricultural policy (CAP) is a partnership between agriculture and society, and between Europe and its farmers. It aims to

- support farmers and improve agricultural productivity, so that consumers have a stable supply of affordable food
- ensure that European Union (EU) farmers can make a reasonable living
- help tackling climate change and the sustainable management of natural resources
- maintain rural areas and landscapes across the EU
- keep the rural economy alive promoting jobs in farming, agri-foods industries and associated sectors

The CAP is a common policy for all the countries of the European Union. It is managed and funded at European level from the resources of the EU's budget." (European Commission 2019a)

1.4.2. Forestry

EU Regulations

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS A new EU Forest Strategy: for forests and the forest-based sector - COM (2013) 659 final

http://eur-lex.europa.eu/resource.html?uri=cellar:21b27c38-21fb-11e3-8d1c-01aa75ed71a1.0022.01/DOC_1&format=PDF

One of the guiding principles of the EU Forest Strategy is the "Sustainable forest management and the multifunctional role of forests, delivering multiple goods and services in a balanced way and ensuring forest protection". (Communication, p. 5)

According to the Strategy the "2020 forest objectives" are "[t]o ensure and demonstrate that all forests in the EU are managed according to sustainable forest management principles and that the EU's contribution to promoting sustainable forest management and reducing deforestation at global level is strengthened, thus:

- contributing to balancing various forest functions, meeting demands, and delivering vital ecosystem services; […]" (Communication, p.6)

Green Paper on Forest Protection and Information in the EU: Preparing forests for climate change SEC (2010)163 final

https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52010DC0066&from=EN

"This Green Paper

- identifies briefly the general situation and global relevance of forests;
- describes the characteristics of EU forests and their functions;
- identifies the main challenges faced by EU forests in a changing climate and how they could compromise forest functions;
- presents an overview of the tools available to ensure forest protection […]." (Green Paper, p. 3)

1.4.3. Hunting and Fishing

EU Regulations

AGREEMENT between BirdLife International and FACE on Directive 79/409/EEC (2004)

http://ec.europa.eu/environment/nature/conservation/wildbirds/hunting/docs/agreement_en.pdf

This Agreement between BirdLife International and FACE (Federation of Associations for Hunting and Conservation of the EU) consists of ten points enabling hunting within the framework of the Birds Directive (see section 1.2.1). Both organisations for example:

- recognise the Birds Directive as an appropriate legal instrument for the conservation of both wild birds and their habitats at a favourable conservation status.
- support the establishment of the NATURA 2000 Network and recognize the importance of effective habitat protection and active management for biodiversity conservation.

European Charter on Hunting and Biodiversity

http://www2.ecolex.org/server2neu.php/libcat/docs/LI/MON-081629.pdf

As its major goal "[t]he Charter promotes principles and guidelines intended to ensure that hunting and hunting tourism in Europe are practiced in a sustainable manner, while avoiding negative impacts on biodiversity and making a positive contribution to the conservation of species and habitats and the needs of society". In case of sustainable hunting the major objectives of the Charter are to:

- provide a set of non-binding principles and guidelines for sustainable hunting to facilitate biodiversity conservation and rural development;
- encourage hunter involvement in monitoring, management, and research efforts directed towards stewardship and the conservation of wildlife and their habitats;
- promote cooperation between hunters and other stakeholders in the conservation and management of biodiversity.

The Common Fisheries Policy (CFP)

https://ec.europa.eu/fisheries/cfp_en

Inland fisheries are not managed under the CFP.

1.4.4. Tourism and Recreation

Global or Regional International Regulations

Global Sustainable Tourism Council Criteria VERSION1, 1 NOVEMBER 2013 and Suggested Performance Indicators VERSION 1, 10 DECEMBER 2013 for Destinations

https://www.gstcouncil.org/wp-content/uploads/2013/11/Dest-_CRITERIA_and_INDICATORS_6-9-14.pdf

The Global Sustainable Tourism Council Criteria are the result of a worldwide effort to reach sustainability in travel and tourism and to develop a common worldwide understanding of sustainable destinations. The Criteria and Indicators are used as a basis for certification of sustainable managed tourism destinations.

EU Regulations

European Tourism Indicators System (ETIS) and

ETIS toolkit for sustainable destination management (2016)

https://ec.europa.eu/docsroom/documents/21749/attachments/1/translations/en/renditions/native

The ETIS is a management, information and monitoring tool for tourism destinations.

"The specific objective of the ETIS is to contribute to improving the sustainable management of destinations. It aims at helping destinations and the stakeholders within to measure their sustainability management processes, enabling them to monitor their performance and progress over time." (ETIS Toolkit, p. 10)

It contains 43 core indicators within four categories:

- destination management,
- social and cultural impact,
- economic value,
- environmental impact.

1.4.5. Energy

EU Regulations

DIRECTIVE 2009/28/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (Renewable Energy Directive)

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0028&from=DE

According to Article 1 of this Directive it "establishes a common framework for the promotion of energy from renewable sources" in the EU. The Directive specifies renewable energy targets for each country and commits EU countries to compile national renewable energy action plans on how they plan to meet these targets. Every two years, EU countries have to publish national renewable energy progress reports where the progress towards the respective national target is measured.

1.4.6. Sustainable Development

Global or Regional International Regulations

Transforming our world: the 2030 Agenda for Sustainable Development

http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

The 2030 Agenda, adopted by all United Nations Member States in 2015, is a plan of action for people, planet and prosperity. The Agenda announces 17 **Sustainable Development Goals (SDG)**, for example Goal 15: "Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss".

EU Regulations

ESDP - European Spatial Development Perspective towards Balanced and Sustainable Development of the Territory of the European Union

http://ec.europa.eu/regional_policy/sources/docoffic/official/reports/pdf/sum_en.pdf

The European Spatial Development Perspective "is a non-binding document presented by the ministers responsible for spatial planning in the Member States that exerts influence mainly by persuasion by discourse rather than formal instruments or implementation structures. It defined three policy guidelines of the spatial planning agenda of the EU as polycentricity and urban-rural partnership, parity of access to infrastructure and knowledge and sustainable development and protection of nature and cultural heritage" (Dallhammer et al. 2018, p. 13).

COMMUNICATION FROM THE COMMISSION EUROPE 2020 - A strategy for smart, sustainable and inclusive growth – COM (2010) 2020 final (Europe 2020 Strategy)

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:EN:PDF

The Europe 2020 Strategy "is a strategy to turn the EU into a smart, sustainable and inclusive economy delivering high levels of employment, productivity and social cohesion. This is the Europe 2020 strategy. This is an agenda for all Member States, taking into account different needs, different starting points and national specificities so as to promote growth for all". (Strategy, p. 10)

The Strategy contains targets to be reached by 2020 in five areas:

- Employment
- Research and Innovation
- Climate Change and Energy
- Education
- Combating Poverty

These EU targets have been translated into national targets for each EU country:

http://ec.europa.eu/eurostat/documents/4411192/4411431/Europe_2020_Targets.pdf

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Roadmap to a Resource Efficient Europe - COM(2011) 571 final (Resource Efficiency Roadmap)

http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011DC0571

This Roadmap illustrates what will be needed to reach a resource efficient and sustainable growth and

describes short term actions needed to start off this process. It "provides a framework explaining how policies interrelate and build on each other in which future actions can be designed and implemented coherently". (Communication, p. 3)

In an Annex Table the inter-linkages between key sectors and resources and their associated EU policy initiatives are outlined.

Beside the EU Biodiversity Strategy to 2020 (see section 1.1 and 1.2.1) the Roadmap is one of the baseline documents for the EU Green Infrastructure Strategy (see section 1.1), which identified investing in GI as an important step towards protecting our natural capital and fostered the Commission Communication on Green Infrastructure.

1.5. Spatial Planning

1.5.1. Regional and Local Planning

EU Regulations

European Spatial Development Perspective - Towards Balanced and Sustainable Development of the Territory of the European Union (ESDP)

http://ec.europa.eu/regional_policy/sources/docoffic/official/reports/pdf/sum_en.pdf

See section 1.4.6

Territorial Agenda of the European Union (2007)

Territorial Agenda of the European Union 2020 (2011)

https://ec.europa.eu/regional_policy/sources/policy/what/territorial-cohesion/territorial_agenda_leipzig2007.pdf

https://ec.europa.eu/regional_policy/sources/policy/what/territorial-cohesion/territorial_agenda_2020.pdf

The Territorial Agenda is a non-binding document. The first Territorial Agenda of 2007 outlined the intentions of the Member States towards territorial development, defined the priorities of the EU in that regard, and listed measures to implement the agenda on an EU and a member state level. The follow up Agenda of 2011 acts as a policy guideline to contribute to the Europe 2020 Strategy (see section 1.4.6). Both versions of the Territorial Agenda (2007 and 2011) contain suggestions and guidelines which contribute to the UN Sustainable Development Goal 11 ("Make cities and human settlements inclusive, safe, resilient and sustainable") and the New Urban Agenda (see section 1.5.2) (Dallhammer et al. 2018).

1.5.2. Urban Planning

EU Regulations

Urban Agenda for the EU, launched with the Pact of Amsterdam (2016)

https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam_en.pdf

Agreed at the Informal Meeting of EU Ministers Responsible for Urban Matters on 30th May 2016 in Amsterdam, The Netherlands, the Pact of Amsterdam sets out an initial list of Priority Themes for the Urban Agenda for the EU. One of these twelve themes is "Climate Adaptation (including Green Infrastructure Solutions)". Another theme is "Sustainable use of land and Nature-Based solutions", which includes renaturing / greening of Urban Areas.

1.5.3. Sectoral Planning

EU Regulations

TEN-T (Trans-European Transport Network)

https://ec.europa.eu/transport/themes/infrastructure_en

"The Trans-European Transport Network (TEN-T) is a European Commission policy directed towards the implementation and development of a Europe-wide network of roads, railway lines, inland waterways, maritime shipping routes, ports, airports and rail-road terminals. It consists of two planning layers:

- The Comprehensive Network: Covering all European regions
- The Core Network: Most important connections within the Comprehensive Network linking the most important nodes" (European Commission 2019b)

This Policy "advances sustainable transport solutions which lead the process towards the achievement of the European Union's long-term transport policy objectives (meeting future mobility needs while ensuring resource efficiency and reducing carbon emissions)" (European Commission 2019c).

REGULATION (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU Text with EEA relevance

http://publications.europa.eu/resource/cellar/f277232a-699e-11e3-8e4e-01aa75ed71a1.0006.01/DOC_1

One major objective of this Regulation and its Guidelines is to develop a sustainable mobility of persons and goods within the framework of the Trans-European Transport Network policy (see above). These guidelines refer to a lot of Directives in the field of Environment and Biodiversity Protection, which should be taken into account when planning the transport network in order to avoid or to mitigate or compensate for negative impacts on the environment and to protect biodiversity effectively. Those directives of the European Parliament and of the Council are for example Directive 92/43/EEC (Habitats Directive, see section 1.2.1), Directive 2009/147/EC (Birds Directive, see section 1.2.1), Directive 2000/60/EC (Water Framework Directive, see section 1.3.2), Directive 2001/42/EC (Strategic Environmental Assessment Directive – SEA, see section 1.3.1), and Directive 2011/92/EU (Environmental Impact Assessment Directive – EIA, see section 1.3.1).

1.5.4. Access to Information on the Environment and Public Participation

Global or Regional International Regulations

CONVENTION on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, done at Aarhus, Denmark, on 25 June 1998 (Aarhus Convention)

http://www.unece.org/fileadmin/DAM/env/pp/documents/cep43e.pdf

"The Aarhus Convention is a new kind of environmental agreement. The Convention:

- Links environmental rights and human rights
- Acknowledges that we owe an obligation to future generations
- Establishes that sustainable development can be achieved only through the involvement of all stakeholders
- Links government accountability and environmental protection
- Focuses on interactions between the public and public authorities in a democratic context." (UNECE 2019b)

EU Regulations

COUNCIL DECISION 2005/370/EC of 17 February 2005 on the conclusion, on behalf of the European Community, of the Convention on access to information, public participation in decision-making and access to justice in environmental matters

https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32005D0370&from=EN

With this Council Decision the Aarhus Convention (see Global or Regional International Regulations above) is approved on behalf of the European Community.

REGULATION (EC) No 1367/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 6 September 2006 on the application of the provisions of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters to Community institutions and bodies (Aarhus Regulation)

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:264:0013:0019:EN:PDF

The Aarhus Regulation applies the Aarhus Convention (see Global or Regional International Regulations above). It "addresses the 'three pillars' of the Aarhus Convention - access to information, public participation and access to justice in environmental matters - where those are of relevance to EU institutions and bodies and lays down related requirements". (European Commission 2018)

DIRECTIVE 2003/4/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 28 January 2003 on public access to environmental information and repealing Council Directive 90/313/EEC (Environmental Information Directive)

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:041:0026:0032:EN:PDF

This Directive is concerning the first "pillar" of the Aarhus Convention (see Global or Regional International Regulations above): "access to information". It was to be implemented in the national law of the EU Member States by 14 February 2005.

DIRECTIVE 2003/35/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to the participation and access to justice Council Directives 85/337/EEC and 96/61/EC - Statement by the Commission

http://eur-lex.europa.eu/resource.html?uri=cellar:4a80a6c9-cdb3-4e27-a721-d5df1a0535bc.0004.02/DOC_1&format=PDF

This Directive is concerning the second "pillar" of the Aarhus Convention (see Global or Regional International Regulations above): "public participation in decision-making". It was to be implemented in the national law of the EU Member States by 25 June 2005.

DIRECTIVE 2007/2/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:108:0001:0014:en:PDF

This Directive ensures "that the spatial data infrastructures of the Member States are compatible and usable in a Community and transboundary context" (European Commission 2019d). It "requires that common Implementing Rules […] are adopted in a number of specific areas (Metadata, Data Specifications, Network Services, Data and Service Sharing and Monitoring and Reporting)" (European Commission 2019d).

ESPON 2020 Cooperation Programme (2015)

https://www.espon.eu/sites/default/files/attachments/ESPON_2020_Cooperation_Programme_-_SFC_Version-_11-03-15_1.pdf

The ESPON 2020 Cooperation Programme aims at promoting and fostering a European territorial dimension in development and cooperation by providing evidence, knowledge transfer and policy learning to public authorities and other policy actors at all levels.

2. National Laws/Policies of Austria and Regional Laws/Policies of Lower Austria

Introduction about GI in the national/regional Law and Policy

Green infrastructure as a precise subject hasn't been established in the Austrian legislation yet. Nonetheless, legal matter referring to elements of green infrastructure appears in different national and regional jurisdiction. In Austria most of the legislation regarding nature and landscape conservation, etc. lies within the responsibility of the federal states. National laws are published in the Austrian Federal Law Gazette (Bundesgesetzblatt, in the following indicated by: [BGBl.]). Laws of the federal state Lower Austria are published in the Lower Austrian Law Gazette (Landesgesetzblatt, in the following indicated by: [LGBl.]).

The only documents directly referring to green infrastructure are the **Austrian Biodiversity Strategy 2020+** (Biodiversitäts-Strategie Österreich 2020+) and the **Lower Austrian Nature Protection Concept** (Naturschutzkonzept Niederösterreich).

The Austrian Biodiversity Strategy 2020+ is the national implementation of the EU 2020 Biodiversity Strategy and therefore deals with the issues of preservation of species and habitats and the support of biodiversity and ecosystem services by biotope networks and consequently (elements of) green infrastructure.

2.1. Green Infrastructure

National Regulations

Austrian Biodiversity Strategy 2020+

Biodiversitäts-Strategie Österreich 2020+

https://www.bmnt.gv.at/dam/jcr:7dd9ff6f-1a39-4f77-8c51-6dceaf6b195f/Biodiversit%C3%A4tsstrategie2020_dt.pdf

The Biodiversity Strategy Austria 2020+ aims to preserve the diversity of life in Austria, to slow down the loss of species, genetic diversity and habitats, and to minimise the sources of threats. With regard to GI the following targets are defined:

- Target 10: Establishment of a valuable, functional biotope network by acceleration and support of voluntary measures to create a biotope network as well as enhancement of biotope networks by
  - improving the quality of relevant areas and structural elements
- Target 11: Priority areas for ecological functions (green infrastructure) are considered or identified in local and regional spatial planning as well as the significant increase in ecological permeability in higher-ranking traffic routes by
  - regional planning of wildlife corridors/habitat networking axes/green infrastructure
  - identification of areas with increased need for Green Infrastructure and consideration in planning of different levels and sectors, such as zoning, regional planning, overall transport scheme and therefore coordinated establishment of green bridges and tunnels
  - development of nationwide strategies for habitat networking

Habitat connectivity Austria

Lebensraumvernetzung Österreich

www.lebensraumvernetzung.at

As part of the Austrian Biodiversity Strategy 2020+ the national projects and sub-strategies "Habitat connectivity Austria" ("Lebensraumvernetzung Österreich: Grundlagen – Aktionsfelder – Zusammenarbeit") and "Habitat Networking for the Protection of Biodiversity" (Lebensraumvernetzung zur Absicherung der Biodiversität) are supporting the implementation of the targets 10 and 11 of the Austrian Biodiversity Strategy 2020+.

The project "Habitat Networking for the Protection of Biodiversity", focussed in the Austria-wide identification of the most important habitat axes in Austria in cooperation with the federal states.

Regional Regulations

Lower Austrian Nature Protection Concept (2015)

Naturschutzkonzept Niederösterreich (2015)

http://www.noe.gv.at/noe/Naturschutz/Naturschutzkonzept.html

http://www.noe.gv.at/noe/Naturschutz/Naturschutzkonzept_Februar_2015.pdf

The Lower Austrian Nature Protection Concept ("Naturschutzkonzept") published in 2011 divides Lower Austria into several regions based on its natural landscapes and provides a basis for nature conservation in these regions. In 2015, the topic area "green infrastructure – wildlife corridors – habitat connectivity" has been added (Amt der NÖ Landesregierung, Abteilung Naturschutz, 2015).

2.2. Protection of Nature, Biodiversity and Landscape

2.2.1. Nature and Biodiversity Protection

National Regulations

Austrian Biodiversity Strategy 2020+

Biodiversitäts-Strategie Österreich 2020+

https://www.bmnt.gv.at/dam/jcr:7dd9ff6f-1a39-4f77-8c51-6dceaf6b195f/Biodiversit%C3%A4tsstrategie2020_dt.pdf

The Biodiversity Strategy Austria 2020+ aims to preserve the diversity of life in Austria, to slow down the loss of species, genetic diversity and habitats, and to minimise the sources of threats. With regard to GI the following targets are defined:

- Target 10: Species and habitats are preserved
- Target 11: Biodiversity and ecosystem services are important in terms of land use and transport planning.

Regional Regulations

Lower Austrian Nature Conservation Act 2000

NÖ (Niederösterreich) Naturschutzgesetz 2000 (NÖ NSchG 2000)

[LGBl. 5500-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20000814

The Lower Austrian Nature Conservation Act 2000 is a comprehensive and the fundamental legislation for the conservation of nature and landscape, which aims to preserve, maintain or restore nature in all its forms of appearance. The main focus of this act is the protection and development of nature's peculiarities and their ability to develop, the ecological function of the habitats, the diversity, the species richness and the representation of the native and local animals and plants as well as the sustainability of natural processes. It also includes the endeavour to maintain, restore and improve the environment serving human health and recreation as the best possible basis of life as well as the preservation and maintenance of nature extends to all its manifestations, whether they are in their original state or are shaped by man (cultural landscape) is an important topic. NÖ NSchG 2000 also governs the implementation of the European Birds Directive and the Habitats Directive as well as their realisation in the Natura 2000 network of protected areas. Also the management of invasive non-native species is specified by this legal matter in terms of prohibition of introduction and support of controlling these species.

Especially with regard to GI the following aims are defined:

§12

Natural monuments can therefore include, in particular, gorges, waterfalls, springs, trees, hedges, vegetated avenues, hedges and groves and rare habitats.

§22

- Preservation and care of smaller, natural or near-natural surface waters, of marsh meadows and dry and calcareous grassland, as well as of valuable hedges and groves.
- The promotion of measures to improve important landscape ecological functions. (e.g. biotope, extensification, conversion to near-natural agricultural and forestry practices)

The following decrees and acts are dealing with various kind of protected areas, which can themselves be attributed to GI entirely.

Decree on Nature Reserves

Verordnung über die Naturschutzgebiete

[LGBl. 5500/13-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20000750

In addition to the comprehensive Lower Austrian Nature Conservation Act 2000, the Decree on Nature Reserves constitutes the establishment of so called nature reserves ('Naturschutzgebiete'), which are a category of protected areas regulated by regional law.

Lower Austrian National Park Act

NÖ Nationalparkgesetz

[LGBl. 5505-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20000675

The Lower Austrian National Park Act (NÖ Nationalparkgesetz) determines regulations regarding external

borders, zoning and management plans of Lower Austrian national parks.

Decree on Nature Parks

Verordnung über die Naturparks

[LGBl. 5500/50-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20000674

The Lower Austrian Decree on Nature Parks (Verordnung über die Naturparks) determines regulations regarding external borders of Lower Austrian nature parks.

Decree on the European Protected Areas

Verordnung über die Europaschutzgebiete

[LGBl. 5500/6-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20000668

In addition to the comprehensive Lower Austrian Nature Conservation Act 2000, the Decree on the European Protected Areas defines regulations regarding external borders, subject of protection, conservation objectives and necessary conservation measures for Natura 2000 sites.

Lower Austrian Wildlife Conservation Decree

NÖ Artenschutzverordnung

[LGBl. 5500/2-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20000992

Additionally the lower Austrian Wildlife Conservation Decree specifies the special protection of species of wild plants and animals listed in its Annexes. These are based on regional and national red lists and the European Habitats Directive as well as the European Birds Directive.

2.2.2. Landscape Protection

European Landscape Convention

Europäische Landschaftskonvention

Austria has not yet ratified the European Landscape Convention. Although the federal states and the federal government welcome the idea and objectives of the draft convention, they are reserved for the convention as an additional, legally binding instrument because of the administrative and financial costs involved. In a concerted Austrian opinion, it was pointed out in the discussion phase that it would be useful to improve the efficiency, coordination and transparency of existing national, European and international regulatory mechanisms and instruments (e.g. international agreements).

Since nature conservation and landscape protection is regulated by the individual federal states in Austria, legal matters referring to the concept of landscape are covered by the Lower Austrian laws and regulations of Nature and Biodiversity Protection (section 2.2.1), especially the:

Lower Austrian Nature Conservation Act 2000

NÖ (Niederösterreich) Naturschutzgesetz 2000 (NÖ NSchG 2000)

[LGBl. 5500-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20000814

The Lower Austrian Nature Conservation Act 2000 is a comprehensive and the fundamental legislation for the conservation of nature and landscape, which aims to preserve, maintain or restore nature in all its forms of appearance. (for more details see section 2.2.1)

2.3. Environmental Protection

2.3.1. Prevention of harmful Effects on the Environment

National Regulations

Federal Act on Environmental Liability for the Prevention and Rehabilitation of Environmental Damages (Federal Environmental Liability Act - B-UHG)

Bundesgesetz über Umwelthaftung zur Vermeidung und Sanierung von Umweltschäden (Bundes-Umwelthaftungsgesetz - B-UHG)

[BGBl. I Nr. 55/2009]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20006304

On the basis of the costs-by-cause principle, the Federal Environmental Liability Act regulates measures for the prevention and remediation of environmental damages.

The scope of application of the B-UHG is restricted to damage to the water bodies and to the soil according to the Austrian distribution of responsibilities. Damage to biodiversity and soil damage caused by certain activities, on the other hand, fall within the competence of the federal states.

Federal Act on the Assessment of Environmental Impacts (Environmental Impact Assessment Act 2000)

Bundesgesetz über die Prüfung der Umweltverträglichkeit (Umweltverträglichkeitsprüfungsgesetz 2000 – UVP-G 2000)

[BGBl. Nr. 697/1993]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10010767

The Environmental Impact Assessment Act 2000 regulates the task of environmental impact assessment and public participation.

Regarding GI its aim is to identify, describe and evaluate the direct and indirect effects of a project on humans, animals, plants and their habitats, on soil, water, air and climate and on the landscape.

Federal Noise Protection Act

Bundesgesetz über die Erfassung von Umgebungslärm und über die Planung von Lärmminderungsmaßnahmen (Bundes-Umgebungslärmschutzgesetz – Bundes-LärmG)

[BGBl. I Nr. 60/2005]

https://www.ris.bka.gv.at/GeltendeFassung/Bundesnormen/20004158/Bundes-L%c3%a4rmG%2c%20Fassung%20vom%2009.11.2017.pdf

The purpose of this federal act is to reduce the harmful effects of environmental noise to human health and decrease the disturbance from environmental noise. The Federal Noise Protection Act also aims to prevent

the impact of noise on Natura 2000 sites and habitats.

Regional Regulations

Lower Austrian Environmental Protection Act

NÖ Umweltschutzgesetz

[LGBl. 8050-8]

https://www.ris.bka.gv.at/Dokumente/Landesnormen/LNO40006778/LNO40006778.pdf

The Lower Austrian Environmental Protection Act is targeted on preserving, improving or restoring the natural environment of humans, animals and plants in Lower Austria by maintenance of waters and their protection against pollution, avoidance of litter and other waste materials, the disposal and recovery of waste and other waste materials at appropriate sites by appropriate means, the fight against air pollution, the fight against noise, the care of the biological environment and its protection against damaging interventions and the implementation of proposals and initiatives to improve the quality of life of citizens in their community.

Lower Austrian Environmental Liability Act

NÖ Umwelthaftungsgesetz (NÖ UHG)

[LGBl. 6200-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20000613

The Lower Austrian Environmental Liability Act regulates biodiversity damage caused by the activities listed therein, but also for damage caused by other hazardous activities, in accordance with the national environmental laws.

Biodiversity damage means the degradation of protected species and natural habitats in terms of significant adverse effects on the achievement or maintenance of the favourable conservation status of these habitats or species. Protected species and habitats are derived from the "Birds Directive" of 1979 (Directive 79/409/EEC) and the Habitats Directive of 1992 (Directive 92/43/EEC).

2.3.2. Water Protection

National Regulations

Water Rights Act 1959 - WRG 1959

Wasserrechtsgesetz 1959 – WRG 1959

[BGBl. Nr. 215/1959]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10010290

The Water Rights Act 1959 provides the comprehensive legal framework for the assessment of a wide range of living conditions that are relevant to water management. It is the legal basis for a variety of measures, as well as the legal instruments in particular for the following three thematic areas: the use of the waters, the protection and the cleanliness of the waters and the protection from the dangers of water.

2.3.3. Air and Climate Protection

National Regulations

Federal Act on Air Pollution Control

Bundesgesetz zum Schutz vor Immissionen durch Luftschadstoffe (Immissionsschutzgesetz–Luft, IG-L)

[BGBl. I Nr. 115/1997]

https://www.ris.bka.gv.at/GeltendeFassung/Bundesnormen/10011027/IG-L%2c%20Fassung%20vom%2009.11.2017.pdf

The Federal Act on Air Pollution Control is aimed at the permanent protection of human health, of animals and plants, biocoenosis, habitats and their interactions as well as cultural and real assets against harmful air pollutants as well as the precautionary reduction of air pollutant emissions.

Federal Act on Climate Protection

Bundesgesetz zur Einhaltung von Höchstmengen von Treibhausgasemissionen und zur Erarbeitung von wirksamen Maßnahmen zum Klimaschutz (Klimaschutzgesetz – KSG)

[BGBl. I Nr. 106/2011]

https://www.ris.bka.gv.at/GeltendeFassung/Bundesnormen/20007500/KSG%2c%20Fassung%20vom%2009.11.2017.pdf

The Aim of the Federal Act on Climate Protection is to coordinate the implementation of effective measures to enable climate protection by working out measurable, reportable and verifiable reduction of greenhouse gas emissions or enhancement of carbon sinks.

2.3.4. Soil Protection

Regional Regulations

Lower Austrian Soil Protection Act

NÖ Bodenschutzgesetz (NÖ BSG)

[LGBl. 6160-0]

https://www.ris.bka.gv.at/GeltendeFassung/LrNO/20000603/N%c3%96%20BSG%2c%20Fassung%20vom%2009.11.2017.pdf

The Lower Austrian Soil Protection Act is targeted at maintaining and improving sustainable soil fertility and soil health by protection from pollution and prevention of soil erosion and soil compaction.

2.4. Economy and Sustainable Development

2.4.1. Agriculture

Regional Regulations

Lower Austrian Agricultural Act

NÖ Landwirtschaftsgesetz

[LGBl. 6100-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20000610

The Lower Austrian Agricultural Act aims at the modern development of agriculture and forestry for the benefit of the public. With regard to GI the following aims are defined:

- Securing a minimum number of agricultural and forestry cultivators necessary for the conservation,

protection and cultivation of the cultural landscape.

- Protection and improvement of useful, protective, welfare and recreational effects/functions of the forest.

Lower Austrian State Act on Merging and Land Consolidation 1975

Flurverfassungs-Landesgesetz 1975 (FLG)

[LGBl. 6650-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20000625

The Lower Austrian State Act on Merging and Land Consolidation 1975 regulates the merging and land consolidation of agricultural areas. With regard to GI the following aims are defined:

The creation and maintenance of an efficient and environmentally compatible land use system within the framework of a farming or forestry enterprise, including natural structural elements of the cultural landscape such as, embankments, hedgerows and boundary ridges for example.

2.4.2. Forestry

National Regulations

Federal Act of 3rd July 1975 regulating Forestry (Forestry Act 1975)

Bundesgesetz vom 3. Juli 1975, mit dem das Forstwesen geregelt wird (Forstgesetz 1975)

[BGBl. Nr. 440/1975]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10010371

The Forestry Act 1975 is the central federal source of forest law in Austria with the objective of the preservation of forest and the forest floor, as well as the securing of the effects of forests and sustainable forest management. Amongst others the use of forests, forest replanting, silvicultural land use planning, preservation of the forest and forest protection are the purpose of this Act.

Forest Development Plan

Waldentwicklungsplan (WEP)

https://www.bmnt.gv.at/forst/oesterreich-wald/raumplanung/waldentwicklungsplan/WEP.html

Even though the forest development plan does not have a legally binding legislative effect, the contents of this plan are taken into consideration in environmentally relevant procedures such as Environmental Impact Assessment and Strategic Environmental Assessment. The forest development plan shall be updated at 10 yearly intervals.

In the federal states of Lower Austria, Upper Austria and Styria, wild animal corridors are represented in special maps of the forest development plan and are therefore federal.

Regional Regulations

Lower Austrian Forest Implementation Act

NÖ Forstausführungsgesetz

[LGBl. 6851-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20000587

In addition to the comprehensive federal Forestry Act 1975, the Lower Austrian Forest Implementation Act defines the implementation of the Forestry Act 1975 in the competence of the federal states.

2.4.3. Hunting and Fishing

Regional Regulations

Lower Austrian Hunting Act 1974

NÖ Jagdgesetz 1974 (NÖ JG)

[LGBl. 6500-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20000559

The Lower Austrian Hunting Act 1974 provides the comprehensive legal framework for the right to hunt as the exclusive right to prey upon, capture, hunt and adapt wild game within a certain hunting area in the wild.

Lower Austrian Hunting Decree

NÖ Jagdverordnung (NÖ JVO)

[LGBl. 6500/1-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20001057

In addition to the comprehensive Lower Austrian Hunting Act 1974, the Lower Austrian Hunting Decree defines secondary legal framework for the right to hunt.

Lower Austrian Fisheries Act 2001

NÖ Fischereigesetz 2001 (NÖ FischG 2001)

[LGBl. 6550-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20001025

The Lower Austrian Fisheries Act 2001 provides the comprehensive legal framework for fisheries in terms of general regulations, fishing licences, fishery protection as well as violations and penalties.

Lower Austrian Fisheries Decree 2002

NÖ Fischereiverordnung 2002 (NÖ FischVO 2002)

[LGBl. 6550/1-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20000592

The Lower Austrian Fisheries Decree 2002 regulates fishing rights, closed season and minimum landing/removal size of local fish, lampreys, crustaceans and mussels.

2.4.4. Tourism and Recreation

Regional Regulations

Lower Austrian Tourism Act

NÖ Tourismusgesetz 2010

[LGBl. 7400-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20000632

The main focus of the Lower Austrian Tourism Act is on promoting and developing tourism in Lower Austria, taking suitability, ecological resilience and economic conditions into account. As a side issue the concept of landscape as well as natural treasures and their protection are mentioned.

2.4.5. Energy

National Regulations

Energy Strategy Austria (2020)

Energiestrategie Österreich (2020)

https://www.bmwfw.gv.at/Ministerium/Staatspreise/Documents/energiestrategie_oesterreich.pdf

The objective of the Austrian Energy Strategy is to develop a sustainable energy system which makes energy services available for private consumption as well as for businesses in the future whilst implementing EU rules. Security of supply, environmental compatibility, cost effectiveness, social compatibility and competitiveness have been fixed as core objectives in the Austrian Energy Strategy.

2.4.6. Sustainable Development

National Regulations

Austrian Strategy for Sustainable Development (2002)

Österreichische Strategie Nachhaltige Entwicklung, ÖSTRAT (2002)

https://www.bmlfuw.gv.at/dam/jcr:795a66f4-6f21-4f89-9991-51fcf3b6c50e/%C3%96STRAT_2010.pdf

The Austrian Strategy for Sustainable Development builds on the goals and policy principles of the European Union Sustainable Development Strategy, the Federal Sustainable Development Strategy (NSTRAT 2002), sustainable development strategies and programmes, and is guided by the United Nations Millennium Goals. It is aimed primarily at politics and administration and is implemented through a multi-year work programme.

Masterplan Rural Areas

Masterplan Ländlicher Raum

https://www.bmnt.gv.at/dam/jcr:a981bda1-1689-4d1f-87cf-9fc5418522cb/MASTERPLAN%20f%C3%BCr%20den%20l%C3%A4ndlichen%20Raum.pdf

The “Masterplan Rural Areas” is a program for the socioeconomic strengthening of rural areas in Austria. Especially focus area 5 „sustainable land use“, which deals with elements of green infrastructure indirectly, by calling for a reduction of the consumption of land and building development.

2.5. Spatial Planning

2.5.1. Regional and Local Planning

Regional Regulations

Lower Austrian Regional Planning Act

NÖ Raumordnungsgesetz 2014 (NÖ ROG 2014)

[LGBl. Nr. 3/2015]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20001080

The Lower Austrian Regional Planning Act provides the comprehensive legal framework for land use planning, development concepts, town and country planning, regional planning and development, supra-local planning, landscape concepts.

2.5.2. Urban Planning

Regional Regulations

Lower Austrian Building Regulations 2014

NÖ Bauordnung 2014 (NÖ BO 2014)

[LGBl. Nr. 1/2015]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20001079

The Lower Austrian Building Regulations 2014 provides the comprehensive legal framework for urban planning, building legislation and construction.

2.5.3. Sectoral Planning

National Regulations

Federal Act of 16th July 1971 on the Federal Roads (Federal Road Act 1971)

Bundesgesetz vom 16. Juli 1971, betreffend die Bundesstraßen (Bundesstraßengesetz 1971 – BStG 1971)

[BGBl. Nr. 286/1971]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10011428

The Federal Road Act 1971 regulates the construction, maintenance and administration of federal roads, with the exception federal motorways in Austria. Road infrastructure and attached embankments are important elements of grey and in the appropriate quality even green infrastructure.

Railway Act 1957

Eisenbahngesetz 1957

[BGBl. Nr. 60/1957]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10011302

The Railway Act 1957 regulates the operation, construction, maintenance and administration of railways, rail vehicles and railway infrastructure in Austria. Railway infrastructure and attached embankments are important elements of grey and in the appropriate quality even green infrastructure.

High Voltage Current Line Act 1968

Starkstromwegegesetz 1968

[BGBl. Nr. 70/1968]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10006274

The High Voltage Current Line Act 1968 regulates the operation, construction, maintenance and administration of power line infrastructure in Austria. Power line infrastructure and attached embankments are important elements of grey and in the appropriate quality even green infrastructure.

Guidelines and Regulations for Roads (RVS) of 4th March 2014 "Protection of Wild-living Mammals (except Bats) on Traffic Routes" & RVS of 4th March 2012 "Protection of Game"

Richtlinien und Vorschriften für den Straßenbau (RVS) 04.03.14 "Schutz wildlebender Säugetiere (ausgenommen Fledermäuse) an Verkehrswegen" & RVS 04.03.12 "Wildschutz"

Federal Ministry for Transport, Innovation and Technology (bmvit - Bundesministerium für Verkehr, Innovation und Technologie)

http://www.fsv.at/shop/produktdetail.aspx?IDProdukt=04680bcf-a89d-4124-aac6-262a7854bef8

http://www.fsv.at/shop/produktdetail.aspx?IDProdukt=eafb2c26-1d55-4a0e-87bf-124cf7ab30fc

This Guidelines and Regulations for Roads regulate the planning and installation of wildlife crossings in highway construction.

Directive on Wildlife Corridors

Dienstanweisung Lebensraumvernetzung Wildtiere

https://www.bmvit.gv.at/verkehr/strasse/umwelt/downloads/wildtiere.pdf

The Directive on Wildlife Corridors has been conceived by the Federal Ministry for Transport, Innovation and Technology (bmvit - Bundesministerium für Verkehr, Innovation und Technologie) as an implementation measure for the establishment of wildlife corridors. Based on the RVS 04.03.12 the directive regulates the construction and management of structural crossing aids in the course of new as well as existing road projects. These crossing aids may include: underpass tunnels, overpasses, amphibian tunnels and culverts. Wildlife crossings are structures of green infrastructure that allow animals to cross manmade barriers safely, allowing connections or reconnections between habitats, thus combating habitat fragmentation.

Regional regulations

Lower Austrian Roads Act

NÖ Straßengesetz 1999

[LGBl. 8500-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20000791

The Lower Austrian Roads Act regulates the construction, maintenance and administration of all public roads, with the exception of federal roads (federal motorways and federal highway roads) in Lower Austria.

2.5.4. Access to Information on the Environment and Public Participation

National Regulations

Federal Act on Access to Information on the Environment

Bundesgesetz über den Zugang zu Informationen über die Umwelt (Umweltinformationsgesetz – UIG)

[BGBl. Nr. 495/1993]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10010766

The aim of this Federal Act is to inform the public about the environment, in particular by ensuring the right of access to environmental information and promoting the systematic and comprehensive availability and dissemination of environmental information.

Regional Regulations

Lower Austrian Information Act

NÖ Auskunftsgesetz

[LGBl. 0020-0]

https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=LrNO&Gesetzesnummer=20000048

The Lower Austrian Information Act implements the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) in Lower Austrian legislation. The act grants the public rights regarding access to information, public participation and access to justice, in governmental decision-making processes on matters concerning the local, national and transboundary environment.

3. National Laws/Policies of the Czech Republic

Introduction about GI in the national/regional Law and Policy

The concept of green infrastructure has not yet been introduced in Czech legislation. However, there are some documents (both legislative and non-legislative) dealing with issues that can be implicitly included in a subset of green infrastructure, or at least they are in some way related to green infrastructure.

The main legislative document focused on nature and landscape in the Czech Republic is **Act No. 114/1992 Coll. on the Conservation of Nature and Landscape**. The protection (conservation) is divided into two parts. Firstly, it is a general site and species protection. Secondly, it is a special site and species protection.

General nature and landscape protection comprises protection of landscape, species diversity, natural values and aesthetic values of nature, as well as conservation and considerate use of natural resources. The following areas of protection are defined: general landscape protection, encompassing the following instruments – a **Territorial System of the Ecological Stability** of the landscape (TSES), a significant landscape component, a landscape character, a natural park, and a temporarily protected area; general species protection, guaranteeing that all plant and animal species are protected from destruction, damage, collection and catching. General plant and animal species and habitat protection includes an important instrument of protection of wild birds and trees growing outside the forest and general protection of the inanimate component of nature and landscape (protection of caves, natural surface phenomena related to caves, palaeontological finds, and minerals).

Special nature and landscape protection legislation defines six categories of specially protected areas – national parks (NP), protected landscape areas (PLA), national nature reserves (NNR), nature reserves (NR), national nature monuments (NNM) and nature monuments (NM).

After the incorporation of the Czech Republic to the European Union (EU) in 2004, some later regulations of the Act No. 114/1992 Coll. had to be implemented in order to be adjusted to the Community legislation requirements. The Czech Republic has been a member of the EU since 2004. Natura 2000 is a set of protected areas created according to uniform principles in all EU member states. The aim of the system is to ensure protection of the most valuable species of animals, plants and types of natural habitats from the pan-European point of view.

Conceiving of Natura 2000 is based on two directives of the European Union - Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora and Directive 2009/147/EC on the conservation of wild birds. These documents list the species of plants, animals and types of natural habitats for which Natura 2000 sites should be designated.

The Ministry of the Environment of the Czech Republic (MoE) is responsible for the preparation of the Natura 2000 system. The Agency for Nature and Landscape Protection of the Czech Republic (AOPK CR) has been commissioned to prepare such documentation. Individual sites are announced by the government of the Czech Republic. The government also specifies species and number of birds for which sites are designated (Government Order No. 51/2005 Coll.).

There are lot of legislative documents that have some connection with functionality of green infrastructure in the Czech Republic legislation and therefore could be mentioned below, though only the main ones in the particular category are mentioned.

3.1. Green Infrastructure

The topic of the green infrastructure is directly mentioned in the document called "**Policy of Architecture and Building Culture of the Czech Republic**" approved by the government of the Czech Republic on 14th January 2015.

Politika architektury a stavební kultury České republiky

https://www.mmr.cz/getmedia/98015a2c-08e9-4ce1-8cf1-8dbc84c78e2d/2015_IV_17_Politika_architektury_a_stavebni_kultury_Ceske_republiky.pdf?ext=.pdf (Czech version only)

It is a non-legislative strategic document with a nationwide scope, which should bring some improvements in people's lives by improving the quality of the environment in which they live. In the section of relevant European documents, the strategy of the European Commission published in May 2013 is mentioned. Steps, which should lead to fulfilment of the strategic visions are defined. There is an objective of elaborating a methodical guideline for defining of the green infrastructure (including a system of green areas, a system of watercourses and areas of water, a landscape permeability and public spaces) within a spatial planning documentation. The Ministry for Regional Development is responsible for achieving the target. The co-operating organisations are the Ministry of the Environment, the Ministry of Agriculture, public administration at the level of regions and municipalities, the Czech Chamber of Architects, the Association for Urban and Regional planning of the Czech Republic, universities and non-profit organisations.

3.2. Protection of Nature, Biodiversity and Landscape

3.2.1. Nature and Biodiversity Protection

Act No. 114/1992 Coll. on the Conservation of Nature and Landscape

Zákon 114/1992 Sb. o ochraně přírody a krajiny

[In effect since 1st June 1992]

https://www.mzp.cz/www/platnalegislativa.nsf/58170589E7DC0591C125654B004E91C1/%24file/z114_1992.pdf (Czech version only)

The purpose of this Act is to contribute to the preservation and restoration of the natural balance in the landscape, to the conservation of the diversity of all forms of life, natural values and beauty, and to the management of natural resources.

The conservation of nature and landscape shall be ensured in particular among other ways by:

- the conservation and establishment of Territorial Systems of the Ecological Stability of the landscape (TSES),
- the general conservation of wild plant and animal species, and the particular conservation of those species that are rare or endangered, by positively influencing their natural development and creating the conditions for their preservation, and also by using special growing and breeding facilities,
- the conservation of woodland species growing outside of the forests,
- the establishment of a network of specially protected areas and their care,
- participation in the establishment and approval of forestry plans, with the aim of ensuring environmentally appropriate forestry management,
- participation in the process of territorial planning and building proceedings, with the aim of promoting an environmentally balanced and aesthetically valuable landscape,
- participation in the conservation of land resources, particularly in the landscaping of land,
- influence of water management in the landscape, with the aim of maintaining natural conditions for life in water and wetland ecosystems, while preserving the natural character and appearance of water courses, areas, and wetlands,

- the restoration and establishment of new, naturally valuable ecosystems, e.g. in the reclamation and making of other changes of the structure and utilisation of the landscape,
- protection of the landscape for ecologically appropriate forms of economic utilisation, tourism, and recreation,
- regulation of intentional dispersion of non-indigenous species.

Decree No. 395/1992 Coll., of the Ministry of the Environment, implementing selected provisions of Czech National Council Act No. 114/1992 Coll., on the Conservation of Nature and Landscape

Vyhláška 395/1992 Sb., kterou se provádějí některá ustanovení zákona České národní rady 114/1992 Sb. o ochraně přírody a krajiny

[In effect since 13th August 1992]

https://www.mzp.cz/www/platnalegislativa.nsf/7698185C778DA46FC125654B0044DDBC/%24file/V%20395_1992.pdf (Czech version only)

We can find definition and evaluation of the Territorial System of Ecological Stability (TSES) in this Decree. On a regular basis, authorities responsible for the conservation of the natural environment conduct assessments of ecological stability systems in terms of their stabilisation potential.

This Decree defines the protection of important elements in the natural landscape. There is list of specially-protected plant and animal species and their level of endangerment in the attachment as well. The term of biological assessment is defined. The biological assessment is a report containing an analysis, description and evaluation of the current state of the natural environment and the expected direct and indirect impact of the utilisation of the site, as planned by the investor/developer, on the local flora and fauna.

Decree No. 166/2005 Coll., of the Ministry of the Environment, implementing certain provisions of Act No 114/1992 on the Conservation of Nature and Landscape, as amended, in connection with the Creation of the NATURA 2000 Network

Vyhláška 166/2005 Sb., kterou se provádějí některá ustanovení zákona č. 114/1992 Sb., o ochraně přírody a krajiny, ve znění pozdějších předpisů, v souvislosti s vytvářením soustavy Natura 2000

[In effect since 28th April 2005]

https://www.mzp.cz/www/platnalegislativa.nsf/0D6E962EB6BDBAFBC1257005002BEC91/%24file/V%20166_2005.pdf (Czech version only)

A list of European habitat types which occur on the territory of the Czech Republic, including priority habitats, and a list of species that are important from a European perspective and which occur on the territory of the Czech Republic, including species requiring special area protection, are given in an attachment to this Decree.

Decree No. 64/2011 Coll., of the Ministry of the Environment, on Management Plans, Declaration Documents, Records and Designations for Protected Areas

Vyhláška 64/2011 Sb. o plánech péče, označování a evidenci území chráněných podle zákona 114/1992 Sb.

[In effect since 18th March 2011]

http://www.zakony.cz/zakon-SB2011064 (Czech version only)

This Decree defines contents of care plans for each category of specially protected areas and a procedure of their processing, marking of individual elements in the field, on maps etc.

Decree No. 45/2018 Coll., on Management Plans, Care Principles, Declaration Documents, Records and Designations for Protected Areas

Vyhláška 45/2018 Sb. o plánech péče, zásadách péče a podkladech k vyhlašování, evidenci a označování chráněných území

[In effect since 23rd March 2018]

https://www.mzp.cz/www/platnalegislativa.nsf/6D55F32E60BE9109C12582AB003F5088/%24file/V%2045_2018.pdf (Czech version only)

This decree defines content of special protected areas strategical documents. These documents describe, inter alia, current status and ecological value of the territory.

Act No. 115/2000 Coll., on Compensation of Damages caused by Selected Specially Protected Animals, as amended

Zákon č. 115/2000 Sb. o poskytování náhrad škod způsobených vybranými zvláště chráněnými živočichy

[In effect since 10th May 2000]

https://www.mzp.cz/www/platnalegislativa.nsf/32BD32B1F08CA4FCC125690B0026DC41/%24file/Z%20115_2000.pdf (Czech version only)

This act defines ways of compensation of damages caused by selected specially protected animals. These animals are listed in the act as well.

Act No. 100/2004 Coll., on the Conservation of Species of Wild Fauna and Flora, Regulated Trade Therein, and Other Measures to Protect Those Species, and on Amending Certain Acts

Zákon č. 100/2004 Sb. o ochraně druhů volně žijících živočichů a planě rostoucích rostlin regulováním obchodu s nimi a dalších opatřeních k ochraně těchto druhů a o změně některých zákonů

[In effect since 5th March 2004]

https://www.mzp.cz/www/platnalegislativa.nsf/140FCFF93EFBFF1AC1256E85004B4646/%24file/Z%20100_2004.pdf (Czech version only)

This act shall regulate the conservation of species of wild fauna and flora, the survival of which is endangered, with the aim of preserving them by regulating trade therein, in line with the Convention on International Trade in Endangered Species of Wild Fauna and Flora and the laws of the European Communities, regulating the import and export of species of wild animals and plants, the import of cetacean products, import of seal products, the use of leg-hold traps, the import of pelts and other pelt products. Furthermore, it shall establish the conditions for trading in endangered species of wild animals and plants set out below and set out certain other measures to ensure the protection and keeping track of those species in the Czech Republic.

Government Order No. 51/2005, laying down the species and number of birds for which special protection areas are defined

Nařízení vlády 51/2005, kterým se stanoví druhy a počet ptáků pro které se vymezují ptačí oblasti

[In effect since 31st January 2005]

https://www.mzp.cz/www/platnalegislativa.nsf/C634848271CD2D3FC12570040048E3B4/%24file/OL-NV51_05_DRUHYPTAKU_PO-050517.doc (Czech version only)

The order specifies species of birds, including regularly occurring migratory birds, for which special protection areas are defined.

State Nature Conservation and Landscape Protection Programme of the Czech Republic

Státní program ochrany přírody a krajiny ČR

[In effect since 30th November 2009]

http://www.ochranaprirody.cz/res/archive/107/014758.pdf?seek=1373448734 (Czech version only)

This document desribes state and development of landscape of the Czech Republic and its main ecosystems. It proposes objectives for individual type of ecosystems and management methods to achieve them. It also contains list of tools for nature and landscape conservation.

National Biodiversity Strategy of the Czech Republic 2016-2025

Strategie ochrany biologické rozmanitosti ČR 2016-2025

[In effect since 9th March 2016]

https://www.cbd.int/doc/world/cz/cz-nbsap-v2-en.pdf

The National Biodiversity Strategy of the Czech Republic (hereinafter the "Strategy") represents a fundamental conceptual document defining the priorities in the field of conservation, and the sustainable use of biodiversity within the territory of the Czech Republic. It follows up the comprehensive evaluation of the previous document from 2005, on the basis of which, priority areas and objectives were identified. It also takes into account the current international commitments, in particular, the EU Biodiversity Strategy to 2020 and the Strategic Plan of the Convention on Biological Diversity (CBD) to 2020. At the same time, the Strategy follows up on the measures defined by the State Environmental Policy, and it is also linked to other conceptual documents which span across all sectors.

3.2.2. Landscape Protection

Act No. 114/1992 Coll., on the Conservation of Nature and Landscape

Zákon 114/1992 Sb. o ochraně přírody a krajiny

[In effect since 1st June 1992]

https://www.mzp.cz/www/platnalegislativa.nsf/58170589E7DC0591C125654B004E91C1/%24file/z114_1992.pdf (Czech version only)

The purpose of this Act is to contribute to the preservation and restoration of the natural balance in the landscape, to the conservation of the diversity of all forms of life, natural values and beauty, and to the management of natural resources. The Act defines inter alia that landscape character of a place or area shall be its natural, cultural, and historical character, and it must be protected from activities that reduce its aesthetic and natural values.

European Landscape Convention

https://www.coe.int/en/web/conventions/full-list/-/conventions/rms/0900001680080621

The Czech Republic has ratified the European Landscape Converntion at 1st October 2004.

3.3. Environmental Protection

3.3.1. Prevention of harmful Effects on the Environment

Act No. 17/1992 Coll., on the Environment

Zákon č. 17/1992 Sb. o životním prostředí

[In effect since 16th January 1992]

https://www.mzp.cz/www/platnalegislativa.nsf/5B17DD457274213EC12572F3002827DE/%24file/Z%2017_1992.pdf (Czech version only)

This act defines basic terms and determines basic principles of environmental protection and obligations of legal and natural persons in the process of protecting and improving the environment and in the utilization of natural resources.

State Environmental Policy of the Czech Republic 2012-2020

Státní politika životního prostředí České republiky 2012-2020

https://www.mzp.cz/C125750E003B698B/en/sep_cz/$FILE/SOPSZP-SEP2012-2020(2016)-170404.pdf

The main objective of the Policy is to ensure a healthy and high-quality environment for citizens living in the Czech Republic, to significantly contribute to a more effective use of resources and minimise negative impacts of human activities on environment, including cross-border impacts, and thus contribute to the improvement of quality of life in Europe and globally. Public participation is its essential component.

Act No. 100/2001 Coll., on Environmental Impact Assessment and on amendments to some related Acts

Zákon 100/2001 Sb. o posuzování vlivů na životní prostředí a o změně některých souvisejících zákonů

[In effect since 1st January 2002]

https://www.mzp.cz/www/platnalegislativa.nsf/8A12B8F25817A234C125729D0039D956/%24file/Z%20100_2001.pdf (Czech version only)

The Act in conformity with the law of the European Community regulates the assessment of impacts on the environment and on public health (hereinafter "environmental impact assessment") and the procedure for natural and legal persons, administrative authorities and territorial self-governing units (municipalities and regions) in this assessment. Plans and conceptions as delimited in this Act, the implementation of which could have serious environmental impact, shall be subject to environmental impact assessment. The purpose of the environmental impact assessment shall be to obtain an objective professional foundation for issuing a decision or measure pursuant to special regulations and thereby contribute to the sustainable development of society. This foundation shall be one of the basic documents in procedures pursuant to special regulations.

The assessment shall comprise the impacts on public health and the impacts on the environment, including impacts on fauna and flora, ecological systems, the soil, the geological environment, water, air, climate and landscape, natural resources, tangible property and cultural monuments, delimited by special regulations and on the mutual interactions and connections between them.

Act No. 167/2008 Coll., on the Prevention and Remedying of Environmental Damage and on amendments to certain Acts

Zákon 167/2008 Sb. o předcházení ekologické újmě a o její nápravě

[In effect since 17th August 2008]

https://www.mzp.cz/www/platnalegislativa.nsf/85F81EFDC601ACFDC1257B1D00379CD6/%24file/Z%20167_2008.pdf (Czech version only)

This Act transposes the relevant European Community Directive (Directive 2004/35/EC of the European Parliament and of the Council on environmental liability with regard to the prevention and remedying of environmental damage, as amended by Directive 2006/21/EC of the European Parliament and of the Council on the management of waste from extractive industries and amending Directive 2004/35/EC) and regulates the rights and obligations of persons with regard to the prevention and remediation of environmental damage where this has harmed or there is an imminent threat of its causing harm to protected species of wild fauna and flora, to the natural habitats specified in this Act, to the water or to the soil; it also regulated the duties of the state administration in this area.

3.3.2. Water Protection

Act No. 254/2001 Coll., on Water and on Amendments to some Acts (Water Act)

Zákon 254/2001 Sb. o vodách a o změně některých zákonů (vodní zákon)

[In effect since 1st January 2002]

https://www.mzp.cz/www/platnalegislativa.nsf/20F9C15060CAD3AEC1256AE30038D05C/%24file/Z%20254_2001.pdf (Czech version only)

The purpose of this Act is to protect surface water and groundwater, stipulate conditions for economic utilisation of water resources whilst preserving and improving the quality of surface water and groundwater, create conditions for reducing the adverse effects of floods and drought and ensure the safety of water management structures in accordance with European Community Law. The purpose of this Act is also to contribute to the protection of aquatic ecosystems and directly dependent terrestrial ecosystems.

The Act regulates legal relationships involving surface water and groundwater, the relationships of natural persons and legal entities with surface water and groundwater utilisation, as well as the relationships with plots of land and buildings directly connected with those waters, in the interests of ensuring sustainable water utilisation, the safety of water management structures and protection against floods and the impacts of drought. Within the relationships governed by this Act, the principle of cost recovery of water services, including costs of related environmental protection and resource costs, shall be taken into account in accordance with a polluter pays principle.

Surface water and groundwater are not subject to ownership and do not constitute a part or appendage of the plot of land on which or under which they occur; rights to water are regulated by this Act.

In general use of surface water, it is prohibited to endanger the quality or wholesomeness of water, to impair the natural environment and run-off regime, to damage the banks of water bodies, water management structures and facilities and fish breeding facilities and to violate the rights and legally protected interests of other persons.

3.3.3. Air and Climate Protection

Act No. 201/2012 Coll., on Air Protection

Zákon 201/2012 o ochraně ovzduší

[In effect since 13th June 2012]

https://www.mzp.cz/www/platnalegislativa.nsf/9F4906381B38F7F6C1257A94002EC4A0/%24file/Z%20201_2012.pdf (Czech version only)

This Act incorporates relevant European Union regulations and adjust inter alia permissible levels of pollution and air pollution, methods of assessing pollution levels or instruments to reduce pollution and air pollution.

National Emission Reduction Programme

Národní program snižování emisí

[In effect since 2nd December 2015]

https://www.mzp.cz/C1257458002F0DC7/cz/strategicke_dokumenty/$FILE/OOO-NPSE_final-20190621.pdf (Czech version only)

This programme analyzes status and development of air in the Czech Republic, causes of pollution, emissions of pollutants from individual economical sectors, potential development scenarios etc. The programme sets out procedures to remedy current state of air quality or objectives of reducing air pollution levels.

National action plan on Adaptation to Climate Change in the Czech Republic

Národní akční plán adaptace na změnu klimatu

[In effect since 16th January 2017]

https://www.mzp.cz/C1257458002F0DC7/cz/narodni_akcni_plan_zmena_klimatu/$FILE/OEOK-NAP_cely_20170127.pdf (Czech version only)

The main objective of this action plan is to increase the readiness of the Czech Republic to climatic chase and to mitigate its impacts

The Climate Protection Policy of the Czech Republic

Politika ochrany klimatu v České republice

[In effect since 22nd March 2017]

https://www.mzp.cz/C125750E003B698B/en/climate_protection_policy/$FILE/OEOK_CPPES_20180105.pdf (executive summary)

The Policy defines main objectives in the climate protection at the national level to ensure the fulfilment of the greenhouse gas emission reduction objectives in order to reach international commitments of the Czech Republic. Furthermore it contributes towards gradual long-term transition to sustainable low emission economy.

3.3.4. Soil Protection

Act No. 334/1992 Coll., on the Conservation of Agricultural Land Resources

Zákon 334/1992 Sb. o ochraně zemědělského půdního fondu

[In effect since 1st July 1992]

https://www.mzp.cz/www/platnalegislativa.nsf/B9E6985E9AA11F98C12564EA003D3E04/%24file/Z%20334_1992.pdf (Czech version only)

The Act defines the agricultural land fund, its qualitative and quantitative conservation, the rules for exemption of land from the fund, levies for exemption of agricultural land, state administration in the area of the protection of the agricultural land fund, and vindicatory measures.

3.4. Economy and Sustainable Development

3.4.1. Agriculture

Act No. 252/1997 Coll., on Agriculture

Zákon 252/1997 Sb. o zemědělství

[In effect since 13th October 1997]

http://eagri.cz/public/web/mze/legislativa/pravni-predpisy-mze/tematicky-prehled/Legislativa-MZe_uplna-zneni_zakon-1997-252-viceoblasti.html (Czech version only)

The aim of this Act is, inter alia, to create prerequisites for supporting non-agricultural production functions that contribute to the protection of environmental components, such as soil, water and air, and the preservation of populated and cultural landscape.

Act No. 334/1992 Coll., on the Conservation of Agricultural Land Resources

Zákon 334/1992 Sb. o ochraně zemědělského půdního fondu

[In effect since 1st July 1992]

https://www.mzp.cz/www/platnalegislativa.nsf/B9E6985E9AA11F98C12564EA003D3E04/%24file/Z%20334_1992.pdf (Czech version only)

Agricultural land resources are the Czech Republic's primary natural resource, an irreplaceable asset that is key to agricultural production and one of the primary elements of our natural environment. The conservation of agricultural land resources and their cultivation and rational utilisation are activities which lead to the protection and improvement of the natural environment.

Agricultural land resources consist of farmed land, specifically arable land, hop-gardens, vineyards, gardens, orchards, meadows and pastures (hereinafter referred to as 'agricultural land') and land, which is not currently being farmed but that used to be farmed in the past and is to be farmed in the future (hereinafter referred to as 'temporarily idled land'). Agricultural land resources also include ponds with fish or aquatic poultry farms and non-agricultural land that is required for agricultural production – such as farm roads, land containing equipment used for agricultural irrigation, irrigation tanks, drainage ditches, dams designed to protect against excess water or flooding, protective terracing designed to work against erosion, etc.

To ensure that agricultural land resources are protected as part of land use planning work, as carried out in accordance with separate regulations, the parties obtaining and preparing land planning documentation and materials must comply with the applicable protection guidelines. They must also propose and explain a solution, which appears to be the most suitable in terms of the conservation of agricultural land resources and in terms of the conservation of other general interests that are protected under the law. While doing so, the parties must evaluate the anticipated consequences of the proposed solution in terms of its impact on agricultural land resources. Such an assessment is usually done by comparing the proposed solution to another alternative solution.

3.4.2. Forestry

Act No. 289/1995 Coll., on Forests and on Amendments to some Acts (Forest Act)

Zákon 289/1995 Sb. o lesích a o změně a doplnění některých zákonů (lesní zákon)

[In effect since 1st January 1996]

http://eagri.cz/public/web/mze/legislativa/pravni-predpisy-mze/tematicky-prehled/Legislativa-MZe_uplna-zneni_zakon-1995-289-viceoblasti.html (Czech version only)

The purpose of this Act is to determine conditions for the preservation, tending and regeneration of forests as a national asset, forming an irreplaceable part of the environment, to enable the fulfilment of all their functions and to support sustainable forestry

Every individual must behave in such a way as to avoid any danger or damage to the forests or sites and equipment used for management purposes in the forests. While carrying out forestry activities, a forest owner shall be obliged to endeavour not to harm the interests of other forest owners and to ensure that the functions of the forests are preserved (i.e. fulfilled in a consistent and stable manner) and that the gene pool of forest tree species is preserved. Forest land must not be used by anybody for other purposes unless provided otherwise by this Act.

Decree No. 189/2013 Coll., of the Ministry of the Environment, on the Protection of Woody Plants

Vyhláška 189/2013 Sb. o ochraně dřevin a povolování jejich kácení

[In effect since 15th July 2013]

https://www.mzp.cz/www/platnalegislativa.nsf/d79c09c54250df0dc1256e8900296e32/73A5CAE717918FEDC1257B9D00397443/$file/V%20189_2013.pdf (Czech version only)

This Decree defines, among other things, social functions of woody plants, which are the set of functions influencing the human environment, such as dust reduction, noise reduction or microclimate improvement. Social functions include aesthetic functions as well. The Decree defines unlawful interferences with trees and the size and characteristics of trees for whose felling a permission is not necessary.

3.4.3. Hunting and Fishing

Act No. 449/2001 Coll., on Game Management

Zákon 449/2001 Sb. o myslivosti

[In effect since 31st December 2001]

http://eagri.cz/public/web/mze/legislativa/pravni-predpisy-mze/tematicky-prehled/Legislativa-MZe_uplna-zneni_zakon-2001-449-viceoblasti.html (Czech version only)

This act shall lay down, inter alia, management and preservation of wild game species in the territory of the Czech Republic, special keeping of game in captivity, import and export of live game, import and release of animals that currently do not live in the territory of the Czech Republic, creation and use of hunting areas, use of hunting grounds and improvement of living conditions of game, regulation of game stocks, game hunting including game hunting on non-hunting grounds, hunting of animals that are not the game, compensation for damage caused by game and by hunting activities, and compensation for damage to game and game management facilities, control of shot game, state administration of game management, supervision and penalties for a failure to perform duties or for a breach of duties and state support to the maintenance of the historical and cultural level and traditions of Czech game management.

Act No. 99/2004 Coll., on fish farming, performance of fishing right, fishing inspection, protection of marine fishing resources and on amendment of some acts

Zákon 99/2004 Sb. o rybníkářství, výkonu rybářského práva, rybářské stráži, ochraně mořských rybolovných zdrojů a o změně některých zákonů

[In effect since 5th March 2004]

http://eagri.cz/public/web/mze/legislativa/pravni-predpisy-mze/tematicky-prehled/Legislativa-MZe_uplna-zneni_zakon-2004-99-viceoblasti.html (Czech version only)

This act regulates, inter alia, breeding, protection of fish and fishing, farming and fishing of aquatic organisms and protection of their life and environment.

3.4.4. Tourism and Recreation

Act No. 114/1992 Coll., on the Conservation of Nature and Landscape

Zákon 114/1992 Sb. o ochraně přírody a krajiny

[In effect since 1st June 1992]

https://www.mzp.cz/www/platnalegislativa.nsf/58170589E7DC0591C125654B004E91C1/%24file/z114_1992.pdf (Czech version only)

This act, inter alia, regulates tourism, especially in protected areas. Individual protected conditions for each category of specially protected areas are defined. For example, it restricts movement outside marked paths etc.

3.4.5. Energy

Act No. 458/2000 Coll., on business conditions and public administration in the energy sectors and amending certain Acts

Zákon č. 458/2000 Sb. o podmínkách podnikání a o výkonu státní správy v energetických odvětvích a o změně některých zákonů

[In effect since 29th December 2000]

https://www.mpo.cz/en/energy/energy-legislation/cr-legislation/energy-act--221616/

This act orders that activities connected with energy cannot endanger life and persons, property or the interest in environmental protection.

Act No. 165/2012 Coll., on promoted energy sources and on amendment to some Acts

Zákon č. 165/2012 Sb. o podporovaných zdrojích energie a změně některých zákonů

[In effect since 30th May 2012]

https://www.eru.cz/documents/10540/473304/165_2012_AJ.pdf/5e2856ee-dbb6-4e0f-891a-ef771f5511cf

For the climate and environmental protection, the purpose of this act is to, inter alia, promote the use of renewable sources, secondary sources, high-efficient combined generation of powerand heat, bio-methane and de-centralized power generation.

3.4.6. Sustainable Development

Act No. 17/1992 Coll., on the Environment

Zákon č. 17/1992 Sb. o životním prostředí

[In effect since 16th January 1992]

https://www.mzp.cz/www/platnalegislativa.nsf/5B17DD457274213EC12572F3002827DE/%24file/Z%2017_1992.pdf (Czech version only)

This act defines basic terms and determines basic principles of environmental protection and obligations of

legal and natural persons in the process of protecting and improving the environment and in the utilization of natural resources. This act follows the principle of permanently sustainable development.

The Strategic Framework for Sustainable Development in the Czech Republic

Strategický rámec udržitelného rozvoje České republiky

[In effect since 11th January 2010]

https://www.mzp.cz/C125750E003B698B/en/czech_republic_strategy_sd/$FILE/KM-SFSD_CR_EN-20100317.pdf

The role of the Strategic Framework for Sustainable Development of the Czech Republic is to establish a consensual framework for the preparation of other materials of a conceptual nature (sectoral policies and action programmes) and can thus be considered an important starting point for strategic decision-making within individual departments, for interdepartmental cooperation, and for collaboration with interest groups.

3.5. Spatial Planning

3.5.1. Regional and Local Planning

Act No. 183/2006 Coll., on Town and Country Planning and Building Code (Building Act)

Zákon 183/2006 Sb. o územním plánování a stavebním řádu (stavební zákon)

[In effect since 1st January 2007]

http://www.mmr.cz/getmedia/9a941cf5-268b-4243-9880-d1b169fb33d6/SZ_angl.pdf?ext=.pdf

This Act governs, in the matters of town and country planning, particularly:

- the objectives and tasks of town and country planning,
- the system of authorities of town and country planning,
- the town and country planning instruments,
- the assessment of the impacts on area sustainable development,
- decision-making within the area,
- possibilities of consolidation of procedures pursuant to this Act with procedures of the environmental impact assessment,
- conditions for construction, land development and for preparation of the public infrastructure,
- records of planning activity and
- qualification requirements for planning activity.

The objective of town and country planning is to create the preconditions for construction and for sustainable development of the area, consisting in the balanced relationship of conditions for the favourable environment, for economic development, and for cohesion of community for inhabitants of the area, and which satisfies the needs of present generation without endangering the conditions of life of the future generations.

The town and country planning protects and develops the natural, cultural and civilisation values of the area as a public priority, including the urban planning, architectural and archaeological heritage. And it protects the landscape as the substantial component of the environment of the inhabitants' life and the

basis of their identity. With respect to that it determines the conditions for economical utilisation of the developed area and ensures the protection of the non-developed area and grounds without development potential. The areas with development potential are limited with respect to the potential of the area development and the rate of utilisation of the developed area.

Within the non-developed area it is possible, in accordance with its character, to locate the structures, facilities and other measures only for agriculture, forestry, water management, raw material extraction, for protection of nature and landscape, for public transport and public infrastructure, for reduction of risk of ecological and natural disasters and for removing their consequences, and technical measures and structures, which will improve the conditions of its utilisation for purposes of recreation and tourism, for example, cycle paths, sanitary facilities, ecological and information centres.

Decree No. 500/2006 Coll., of the Ministry for Regional Development, on Territorial Analytical Documents, Planning Documentation, and the Way of Recording Land-Use Planning Activities

Vyhláška 500/2006 Sb. o územně analytických podkladech, územně plánovací dokumentaci a způsobu evidence územně plánovací činnosti

[In effect since 1st January 2007]

http://www.uur.cz/images/uzemnirozvoj/stavebnirad/vyhlasky/en/Decree500.pdf

This Decree specifies, in more detail, the content requirements of planning analytic materials, of planning documentation, including requirements for documents related to their procurement, assessment of impacts on sustainable development of the area, and updates of planning documentation, and filing of documents for planning activities.

Planning analytic materials procured by a town & country planning authority and planning analytic materials procured by a regional office contain surveys and assessments of a region's sustainable development which state its strengths, weaknesses, opportunities and threats. The surveys and assessments are divided into several groups. These groups include, amongst others, geology, aquatic regime, quality of the environment, nature and landscape protection, agricultural land resources dedicated to forestry, public transport and technical infrastructure, socio-demographic conditions, dwelling, leisure time activities, and economic conditions. These specialised surveys and assessments result in the assessment of the region's conditions to balance suitable environment, economic growth and coherence of area's culture(s).

Decree No. 501/2006 Coll., of the Ministry for Regional Development, on General Land-Use Requirements

Vyhláška 501/2006 Sb. o obecných požadavcích na využívání území

[In effect since 1st January 2007]

https://www.zakonyprolidi.cz/cs/2006-501 (Czech version only)

This Decree defines general requirements for the use of land for the purpose of defining areas and land, laying down conditions for their use and placing buildings on them, and deciding on the change of the building and the change of the influence of the building on the use of the territory.

Areas of recreation, water and water-management, agriculture, forestry, or nature are defined among others.

Act No. 248/2000 Coll., on Support to Regional Development

Zákon 248/2000 Sb. o podpoře regionálního rozvoje

[In effect since 9th August 2000]

https://www.zakonyprolidi.cz/cs/2000-248 (Czech version only)

This act specifies an obligation to follow the document called the Regional development strategy. It is a basic document of the regional policy and summarises its objectives, problematic areas and priorities. The strategy is based on sustainable development principles.

Act No. 139/2002 Coll., on Land Adjustmenst

Zákon 139/2002 Sb. o pozemkových úpravách a pozemkových úřadech a o změně zákona 229/1991 Sb., o úpravě vlastnických vztahů k půdě a jinému zemědělskému majetku, ve znění pozdějších předpisů

[In effect since 15th April 2002]

http://eagri.cz/public/web/mze/legislativa/pravni-predpisy-mze/tematicky-prehled/Legislativa-MZe_uplna-zneni_zakon-2002-139-viceoblasti.html (Czech version only)

This act deals with land adjustments. These could, inter alia, provide conditions for improving quality of living in rural areas, including help to diversify economic activities, imroving the environment, protecting and redeveloping of land fund, forestry and water management. Land adjustments should also contribute to reducing averse effects of floods and drought and increase the ecological stability of the landscape.

Furthermore, there are some important regional and local strategic documents regarding the green infrastructure through a topic of Territorial System of the Ecological Stability of the landscape (TSES). At a regional level, there are documents called **territorial development principles** (zásady územního rozvoje, ZÚR). In those particular documents, areas for regional and supraregional TSES are defined.

For example, territorial development principles of the South Moravian Region from 2016 are mentioned below.

Text part, in Czech only (section devoted to TSES begins on page 105):

https://www.kr-jihomoravsky.cz/archiv/oupsr/zur_jmk_5/TEXTOVA_CAST/NAVRH/ID.pdf#view=fit

Shortcuts used: NRBC – supraregional biocentre, K – supraregional biocorridor, RBC – regional biocentre, RK – regional biocorridor

Graphic part (TSES is green coloured, shortcuts correspond to the text part):

https://www.kr-jihomoravsky.cz/archiv/oupsr/zur_jmk_5/GRAFICKA_CAST/I2.pdf#zoom=100

There is a spatial and administrative level called administrative districts of municipalities with extended competence in the Czech Republic, so called "small districts". Small districts (správní obvody obcí s rozšířenou působností, SO ORP) represent transition between regional and local level. An example of such territory is the area of interest of VÚKOZ (a partner in the MaGICLandscapes project) – Kyjovsko (a case study area in the MaGICLandscapes project, bounded by borders of SO ORP Kyjov). For this particular level, there are strategic documents called **land analytic background** (územně analytické podklady, ÚAP). These documents include not only regional and supraregional level of TSES, but also the local level.

For example, the Land analytic background of SO ORP Kyjov is mentioned below.

http://www.mestokyjov.cz/treti-uplna-aktualizace-uzemne-analytickych-podkladu-obce-s-rozsirenou-pusobnosti-kyjov/d-4150

There is a text part (textová část) and four graphic parts – values drawing (výkres hodnot), limits drawing (výkres limitů), problems drawing (výkres problémů) and intentions drawing (výkres záměrů).

At a local level, there are **territorial plans** (územní plán, ÚP) of each individual town or village. All three

levels of TSES are included. Both existing and planned (implementation is being planned) elements of TSES are shown.

For example, graphic part of the Territorial plan of the Bohuslavice u Kyjova village is mentioned below.

http://www.mestokyjov.cz/assets/File.ashx?id_org=7843&id_dokumenty=19623

Shortcuts used: NRBC – supraregional biocentre, RBC – regional biocentre, RK – regional biocorridor, LBC – local biocentre, LBK – local biocorridor, existující – existing, neexistující – non existing (planned)

A special case is represented by protected areas like national parks. Spatial scale can be similar to previous cases, but administrative and planning mode is set differently. For example, The Krkonoše Mountains National Park (KRNAP) has its own **care plan** (mentioned below) valid for the period of 2010-2020.

http://www.krnap.cz/data/File/legislativa/plan_pece_2010_2020/pp-krnap_cast-a_text-final.pdf

The section of the document dedicated to TSES (ÚSES) begins at page 124.

3.5.2. Urban Planning

Act No. 183/2006 Coll., on Town and Country Planning and Building Code

Zákon 183/2006 Sb. o územním plánování a stavebním řádu

[In effect since 1st January 2007]

http://www.mmr.cz/getmedia/9a941cf5-268b-4243-9880-d1b169fb33d6/SZ_angl.pdf?ext=.pdf

As mentioned above (3.5.1), this act governs town and country planning

3.5.3. Sectoral Planning

Act No. 11/1994 Coll., on Road Transport

Zákon 111/1994 Sb. o silniční dopravě

[In effect since 8th June 1994]

https://www.zakonyprolidi.cz/cs/1994-111 (Czech version only)

This act adjusts, inter alia, transport of hazardous substances with potential impact on the environment.

3.5.4. Access to Information on the Environment and Public Participation

Act No. 123/1998 Coll., on Access to Information on the Environment

Zákon 123/1998 Sb. o právu na informace o životním prostředí

[In effect since 1st July 1998]

https://www.mzp.cz/www/platnalegislativa.nsf/5263F44CC9B71746C1256FFE00293E2F/%24file/Z%20123_1998.pdf (Czech version only)

This Act incorporates the relevant European Union regulations (Directive 2003/4/EC of the European Parliament and of the Council on public access to environmental information and repealing Council Directive 90/313/EEC; Directive 2007/2/EC of the European Parliament and of the Council of 14th March 2007 on the establishment of the Infrastructure for Spatial Information in the European Community (INSPIRE)) and regulates the security of the right of access to timely delivered and complete environmental information.

The government of the Czech Republic discusses and approves the report on the state of the environment of the Czech Republic once a year. This report shall in particular contain information on the quality of the

environment and on the environmental burdens. In connection with the environmental status report, the Ministry of the Environment of the Czech Republic elaborates once a year environmental status reports for individual regions. These reports must be published in electronic form within three months from the approval of the environmental status report of the Czech Republic.

State Environmental Policy of the Czech Republic 2012-2020

Státní politika životního prostředí České republiky 2012-2020

https://www.mzp.cz/C125750E003B698B/en/sep_cz/$FILE/SOPSZP-SEP2012-2020(2016)-170404.pdf

The main objective of the Policy is to ensure a healthy and high-quality environment for citizens living in the Czech Republic, to significantly contribute to a more effective use of resources and minimise the negative impacts of human activities on environment, including cross-border impacts, and thus contribute to the improvement of quality of life in Europe and globally. Public participation is its essential component.

4. National Laws/Policies of Germany and regional Laws/Policies of Saxony

Introduction about GI in the national/regional Law and Policy

Several policies and policy instruments have been set up on national and state level to support explicitly the preservation and extension of green infrastructure. Those are the **Federal Green Infrastructure Concept (2017)** and the **White Paper Urban Green (2017)**.

Further, the concept of green infrastructure is implied indirectly by laws / policies on certain green infrastructure elements, like forests, water bodies, agricultural landscapes and by-laws / policies supporting the functionality of green infrastructure, like the potential to mitigate climate change, to minimise air pollution, to prevent floods and others.

Respectively, green infrastructure as such is anchored in legislation through acts, orders and provisions dealing with key elements of green infrastructure and/or its ecological functions / services.

4.1. Green Infrastructure

National Regulations

Federal Green Infrastructure Concept (2017) - Booklet and Expert Report

Bundeskonzept Grüne Infrastruktur - Grundlagen des Naturschutzes zu Planungen des Bundes (2017)

https://www.bfn.de/fileadmin/BfN/planung/bkgi/Dokumente/BKGI_Broschuere.pdf
https://www.bfn.de/fileadmin/BfN/planung/bkgi/Dokumente/BKGI_Broschuere_englisch.pdf

Bundeskonzept Grüne Infrastruktur – Fachgutachten (2017)

https://www.bfn.de/fileadmin/BfN/service/Dokumente/skripten/skript457.pdf

The Federal Green Infrastructure Concept (BKGI), published as a booklet in March 2017 by the Federal Agency for Nature Conservation, is a basic document for decision-making about plans adopted by the Federal Republic of Germany and integrated into EU-wide processes for the establishment of green infrastructure. One of the main aims of the BKGI is the conservation and restoration of ecosystem services, and therefore the protection of natural capital. The Federal Concept was developed by the Federal Agency for Nature Conservation on the basis of the results of the R + D project "Federal Green Infrastructure Concept - Expert Report". The Expert Report describes in detail background and the professional contents of the Federal Concept.

White Paper Urban Green (2017)

Weißbuch Stadtgrün (2017)

https://www.bmi.bund.de/SharedDocs/downloads/DE/publikationen/themen/bauen/wohnen/weissbuch-stadtgruen.pdf

In 2015 the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety published the Green Paper Urban Green. This Paper summarised the current state of knowledge on urban greenery for the first time. It was conceived as a discussion paper with the aim of initiating a broad dialogue on the importance of urban green in integrated urban development. One result of this discussion process is the White Paper Urban Green published in May 2017. It comprises a total of ten fields of action and a large number of concrete federal measures for securing and qualifying green areas and open spaces. Thus, the federal government has given a mandate for the coming years, as it can help cities and communities to

strengthen urban green by an integrated and sustainable urban development policy.

4.2. Protection of Nature, Biodiversity and Landscape

4.2.1. Nature and Biodiversity Protection

National Regulations

Act on Nature Conservation and Landscape Management (Federal Nature Conservation Act – BNatSchG)

Gesetz über Naturschutz und Landschaftspflege (Bundesnaturschutzgesetz - BNatSchG)

[Act of 29th July 2009 (Federal Law Gazette (BGBl.) I p. 2542), last amended by Article 1 of the Act of 15th September 2017 (BGBl. I p. 3434)]

https://www.gesetze-im-internet.de/bnatschg_2009/BNatSchG.pdf

Alongside provisions for the protection of species and for protected areas, the Federal Nature Conservation Act includes provisions on landscape planning, interventions in nature and landscape, biotope networks, access to nature and landscape for recreational purposes, management of invasive species and the participation of recognised nature conservation associations in certain decision-making processes.

The Federal Nature Conservation Act also implements the EU Habitats Directive and the EU Birds Directive in national law (both Directives see section 1.2.1).

The Federal Nature Conservation Act is supplemented in each of the sixteen German federal states (Länder) by state-level legislation that may vary in detail.

Protection of Species Decree

Verordnung zum Schutz wild lebender Tier- und Pflanzenarten (Bundesartenschutzverordnung - BArtSchV)

[Order of 16th February 2005 (BGBl. I p. 258, 896), last amended by Article 10 of the Act of 21st January 2013 (BGBl. I p. 95)]

https://www.gesetze-im-internet.de/bartschv_2005/BArtSchV.pdf

The Protection of Species Decree is a statutory decree based on the Federal Nature Conservation Act (see above).

Further Regulations:

Act on the Convention on the Conservation of European Wildlife and Natural Habitats of 19th September 1979

Gesetz zu dem Übereinkommen vom 19. September 1979 über die Erhaltung der europäischen wildlebenden Pflanzen und Tiere und ihrer natürlichen Lebensräume (EuLRaumÜbkG)

[Act of 17th July 1984 (BGBl. 1984 II p. 618), last amended by Article 416 of the Decree of 31st August 2015 (BGBl. I p. 1474)]

http://www.gesetze-im-internet.de/eulraum_bkg/EuLRaum%C3%9CbkG.pdf

The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention, see section 1.2.1), signed by the Federal Republic of Germany at 19th September 1979 in Bern, is approved.

Act on the Agreement on the Conservation of African-Eurasian Migratory Waterbirds of 16th June 1995

Gesetz zu dem Abkommen vom 16. Juni 1995 zur Erhaltung der afrikanisch-eurasischen wandernden Wasservögel (WVögelAbkG)

[Act of 18th September 1998 (BGBl. 1998 II p. 2498), last amended by Article 29 of the Decree of 31st August 2015 (BGBl. I p.

1474)]

http://www.gesetze-im-internet.de/wv_gelabkg/WV%C3%B6gelAbkG.pdf

The Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA, see section 1.2.1) of 16th June 1995, signed by the Federal Republic of Germany at 15th August 1996, is approved.

Act on the Convention on the Conservation of Migratory Species of Wild Animals of 23rd June 1979

Gesetz zu dem Übereinkommen vom 23. Juni 1979 zur Erhaltung der wandernden wildlebenden Tierarten (WildTArtÜbkG)

[Act of 29th June 1984 (BGBl. 1984 II p. 569), last amended by Article 417 of the Decree of 31st August 2015 (BGBl. I p. 1474)]

http://www.gesetze-im-internet.de/wildtart_bkg/WildTArt%C3%9CbkG.pdf

The Convention on the Conservation of Migratory Species of Wild Animals (CMS, Bonn Convention, see section 1.2.1), signed by the Federal Republic of Germany at 23rd June 1979 in Bonn is approved.

National Biodiversity Strategy (2007)

Nationale Strategie zur biologischen Vielfalt (2007)

http://www.biologischevielfalt.de/fileadmin/NBS/documents/broschuere_biolog_vielfalt_strategie_bf.pdf

This strategy is geared towards implementing the 2002 UN Convention on Biological Diversity (CBD, see section 1.2.1) in Germany and defines about 330 nature conservation goals that are required to be reached by 2020.

A Strategy of the German Federal Ministry of Food, Agriculture and Consumer Protection on Conservation and Sustainable Use of Biodiversity for Food, Agriculture, Forestry and Fisheries (2007)

Agrobiodiversität erhalten, Potenziale der Land-, Forst- und Fischereiwirtschaft erschließen und nachhaltig nutzen - Eine Strategie des BMELV (2007)

http://www.bmel.de/cae/servlet/contentblob/384104/publicationFile/23380/StrategiepapierAgrobiodiversitaet.pdf

http://www.ble.de/DE/Themen/Landwirtschaft/Biologische-Vielfalt/Strategie-des-BMEL-zur-Agrobiodiversitaet/strategie-des-bmel-zur-agrobiodiversitaet_node.html

This Strategy aims on improving the conditions for the long-term conservation and sustainable innovative utilisation of genetic resources for food, agriculture, forestry and fisheries as a precautionary strategy. Furthermore it is focused on better linking the conservation and use of biodiversity as part of a rural innovation strategy for sustainable development.

Regional Regulations

Saxon Nature Conservation Act

Sächsisches Naturschutzgesetz – SächsNatSchG

[Act of 6th June 2013 (SächsGVBl. p. 451), last amended by Article 25 of the Act of 29th April 2015 (SächsGVBl. p. 349)]

https://www.revosax.sachsen.de/vorschrift/12836-Saechsisches-Naturschutzgesetz

The Saxon Nature Conservation Act is based on the Federal Nature Conservation Act (see above) and provides for specific regulations for the Free State of Saxony. The main components of the Saxon Conservation Act in respect to green infrastructure are among others regulations and provisions on:

- Nature conservation intervention (definition of interventions, procedures for interventions and regulations for compensation and compensation measures)

- Provisions on forestry, fisheries and agriculture (reference to further legislation)
- The regulation of landscape planning at state level, definition of responsibilities and framework conditions for planning
- The Ecological Account (see below) and compensation schemes
- Regulations for the definition and classification of natural monuments, national parks, national natural monuments, nature reserves, nature parks, etc.
- The establishment of legally protected biotopes in addition to the protected biotopes according to the Federal Nature Conservation Act
- The legal anchoring of the biotope network and biotope networking according to the Federal Nature Conservation Act at the Länder level, as well as additional comments and specific regulations for the Free State of Saxony
- The legal anchoring and protection of NATURA 2000 sites (Special Protection Areas - SPA (European bird protection areas)) at the Länder level
- Regulations for environmental impact assessments in accordance with the Federal Nature Conservation Act at Länder level
- The protection of wild animal and plant species, as well as their habitats and biotopes
- Regulations on compensation and expropriation
- The definition of nature conservation authorities

Recommended Action on Intervention Regulation under Nature Conservation Law (2003)

Handlungsempfehlung zur naturschutzrechtlichen Eingriffsregelung (2003)

https://www.umwelt.sachsen.de/umwelt/natur/8516.htm

https://www.umwelt.sachsen.de/umwelt/download/Handlungsempfehlung_170709.pdf

The intervention regulation is legally provided within the Saxon Nature Conservation Act (§ 9-12). It serves to protect the so-called normal landscape and to ensure that the »status quo« of nature and landscape does not deteriorate. The main principles are avoiding and/or minimising damage.

If damage to nature and the landscape cannot be avoided, the project owner shall be liable for damages, i.e. they are responsible for compensating for the adverse effects through appropriate nature conservation measures. The Saxon Ministry of Environment and Agriculture has published “Recommended Action for the Assessment and Accounting of Interventions in the Free State of Saxony (Handlungsempfehlung zur Bewertung und Bilanzierung von Eingriffen in Sachsen)”.

Ecological Account and Saxon Ecological Account Decree

Ökokonto und Sächsische Ökokonto-Verordnung (SächsÖKoVO)

[Decree of 2nd July 2008 (SächsGVBl. p. 498)]

https://www.revosax.sachsen.de/vorschrift/10363-Saechsische-Oekokonto-Verordnung

The Saxon Ecological Account Decree defines requirements to areas or measures to be acknowledged for the eco-account - and thus may potentially serve as compensation areas or measures according to §10 and 11 of Saxon Nature Conservation Act. Furthermore, the role of the state nature conservation authority in respect to approval and evaluation of these measures is defined. In addition, the regulation stipulates the management of the eco-account.

The eco-account provides for nature and landscape improvement measures that are executed in advance.

Measures are first implemented independently of an intervention and can subsequently be assigned to one or more construction projects as compensatory measures. By doing this, developers/investors can refer to readily available compensation measures. A pool of potential compensation measures can be set up before an intervention starts.

The state-owned enterprise "Zentrales Flächenmanagement" (Central Area Management) has been operating since 1st October 2017 as the Saxon Eco-Area Agency. For measures in forest and forest areas the state forest enterprise "Sachsenforst" is responsible. A compensation area cadastral map serves as an instrument for recording, monitoring and documenting compensation measures. The role of the state enterprise "Zentrales Flächenmanagement" is, among others, the procurement and purchase of land for state purpose, as well as the provision of compensation areas and ecological account measures. Furthermore, the state-owned enterprise "Zentrales Flächenmanagement" is committed to the restoration of fallow land and sustainable land use practices in the Free State of Saxony.

Basic Protection Decree for FFH Areas (Sites of Community Importance - SCI)

Grundschutzverordnung Sachsen für FFH-Gebiete

[Decree of 26th November 2012 (SächsABl. p. 1499)]

https://www.revosax.sachsen.de/vorschrift/12635-Grundschutzverordnung-Sachsen-fuer-FFH-Gebiete

This Decree designates Sites of Community Importance (SCI) and Special Areas of Conservation (SAC) according to the EU Habitats Directive (see section 1.2.1) as part of the EU NATURA 2000 network of protected areas. For these areas, including the species and habitats within these areas, conservation objectives, protection measures and requirements on their use are stipulated. Through these regulations, the protection and preservation of the FFH areas in Saxony are enshrined in law and thus legally protected.

Basic Protection Decree for Bird Protection Areas (Special Protection Areas – SPA)

Grundschutzverordnung Sachsen für Vogelschutzgebiete

[Decree of 26th November 2012 (SächsABl. p. 1513)]

https://www.revosax.sachsen.de/vorschrift/12636-Grundschutzverordnung-Sachsen-fuer-Vogelschutzgebiete

This Decree designates Special Protection Areas (SPA) according to the EU Birds Directive (see section 1.2.1) as part of the EU NATURA 2000 network of protected areas. For these areas, including the species and habitats within these areas, conservation objectives, protection measures and requirements on their use are stipulated. Through these regulations, the protection and preservation of the FFH areas in Saxony are enshrined in law and thus legally protected.

Programme on Conservation of Biological Diversity in Saxony 2020

Biologische Vielfalt 2020 - Programm, Maßnahmenplan und -bericht des Sächsischen Staatsministeriums für Umwelt und Landwirtschaft

[Programme of January 2013]

https://www.umwelt.sachsen.de/umwelt/download/BioVielfalt2020.pdf

This Programme sets out strategies and specific actions to protect and preserve species diversity in different sectors, like nature conservation, agriculture, fisheries, forestry and hunting. The programme is based on an analysis of the current situation of species, as well as the threats and drivers of biodiversity loss.

An important tool for the implementation of the biodiversity programme are the financial support programmes for conservation-friendly management practices.

Saxon concept for dealing with widespread invasive species

Landeskonzept zum Umgang mit weit verbreiteten invasiven Arten

https://www.umwelt.sachsen.de/umwelt/download/Landeskonzept_Umgang_invasiven_Arten_Internet.pdf

This concept is the basis for the management of invasive non-native species in Saxony. It defines measures and actions and sets priorities to avoid a further loss of biodiversity caused by invasive non-native species.

4.2.2. Landscape Protection

National Regulations

Landscape protection in Germany is regulated by the **Act on Nature Conservation and Landscape Management (Federal Nature Conservation Act – BNatSchG**, Gesetz über Naturschutz und Landschaftspflege (Bundesnaturschutzgesetz - BNatSchG)). For details see section 4.2.1.

Regional Regulations

Landscape protection in Saxony is regulated by the **Saxon Nature Conservation Act** (Sächsisches Naturschutzgesetz – SächsNatSchG). For details see section 4.2.1.

Saxon Monument Protection Act

Sächsisches Denkmalschutzgesetz

[Act of 3rd March 1993 (SächsGVBl. S. 229), last amended by Article 12 of the Act of 15th December 2016 (SächsGVBl. S. 630)]

https://www.revosax.sachsen.de/vorschrift/5198-Saechsisches-Denkmalschutzgesetz#roml

Beside the protection of cultural monuments itself this act covers also the (green) surroundings of a cultural monument or the products of gardening and landscaping.

4.3. Environmental Protection

4.3.1. Prevention of harmful Effects on the Environment

National Regulations

Act on the Prevention of Harmful Effects on the Environment Caused by Air Pollution, Noise, Vibration and Similar Phenomena (Federal Pollution Control Act)

Gesetz zum Schutz vor schädlichen Umwelteinwirkungen durch Luftverunreinigungen, Geräusche, Erschütterungen und ähnliche Vorgänge (Bundes-Immissionsschutzgesetz - BImSchG)

[Act as promulgated on 17th May 2013 (BGBl. I p. 1274), last amended by Article 3 of the Act of 18th July 2017 (BGBl. I p. 2771)]

https://www.gesetze-im-internet.de/bimschg/BImSchG.pdf

The purpose of this Act is to protect people, animals and plants, the soil, the water, the atmosphere as well as cultural and other material goods against harmful environmental effects and to prevent the emergence of harmful environmental impact. Pollutants within the meaning of this Act are air contaminants, noise, vibration, light, heat, rays and similar effects on the environment.

Further Regulations:

Environmental Framework Act

Umweltrahmengesetz (URaG)

[Act of 29th June 1990 (GBl. GDR 1990 I p. 649), amended by Article 12 of the Act of 22nd March 1991 (BGBl. I p. 766, 1928)]

https://www.gesetze-im-internet.de/urag/URaG.pdf

This Act regulates environmental matters after the political turn in the GDR. By this Act, the pollution control regulations of the Federal Republic of Germany came into force in their respective legal form as a law, Decree or general administrative provision in the German Democratic Republic.

Federal Mining Act

Bundesberggesetz (BBergG)

[Act of 13th August 1980 (BGBl. I p. 1310), last amended by Article 2 (4) of the Act of 20th July 2017 (BGBl. I p. 2808)]

https://www.gesetze-im-internet.de/bbergg/BBergG.pdf

https://www.gesetze-im-internet.de/englisch_bbergg/englisch_bbergg.pdf

The purpose of this Act is:

- to ensure the availability of raw materials by managing and promoting the exploration, extraction and processing of mineral resources with a view to geographical constraints and sustainable mining while applying economical and low-impact technology,
- to ensure the safety of mining operations and employees, and
- to strengthen precautions against risks to human life, health or to third-party equipment and materials arising from mining activities and to improve the compensation of unavoidable damage.

Further Regulations:

Decree on spoil heaps and residual holes (i.e. redundant quarries)

Anordnung über Halden und Restlöcher (HaldeRlAnO)

[Decree of 2nd October 1980 (GBl. GDR 1980, p. 301); Continuing law of the former GDR]

https://www.gesetze-im-internet.de/halderlano/HaldeRlAnO.pdf

According to this Decree, dumps and residual holes need to be designed and maintained in such a way as to meet the national cultural requirements and the requirements of radiation protection.

Basic Directive on Environmental Protection of the German Armed Forces

Grundsatzweisung für den Umweltschutz der Bundeswehr

[Directive of 11th December 2007, repealing the directive of 18th November 1998 (VMBl 1999, p. 22)]

http://www.bundeswehr.de/resource/resource/MzEzNTM4MmUzMzMyMmUzMTM1MzMyZTM2MzEzMDMwMzAzMDMwMzAzMDY3NmE2ODMyNzM2YjM3NjYyMDIwMjAyMDIw/20071211_Grundsatzweisung

According to this Directive environmental protection is part of all plans and actions of the "Bundeswehr" in fulfilling its mission. The tasks of the "Bundeswehr" are therefore:

- to reduce and eliminate existing environmental damage and to prevent damage to humans and the environment,
- to minimise risks to humans, animals and plants, nature and landscape, environmental media (air, water, soil) and material goods,
- to preserve and extend the scope for the development of future generations, as well as open spaces for

the development of wild species and landscapes.

The objectives and principles of nature conservation and landscape management as well as the principle of sustainable development must be taken into account in operations carried out by the "Bundeswehr".

German and European regulations and international agreements on species protection and the conservation of biodiversity, like the Federal Nature Conservation Act, Birds Directive, Habitats Directive, Bern Convention, Bonn Convention, or the Convention on Biological Diversity also apply to the "Bundeswehr".

The training areas with their valuable natural components have especially important functions for the protection of nature and species' diversity. Furthermore the ecological and partly also economic advantages of greening "Bundeswehr" buildings should be considered and implemented more intensively, especially in densely populated areas.

Environmental Liability Act

Gesetz über die Vermeidung und Sanierung von Umweltschäden (Umweltschadensgesetz - USchadG)

[Act of 10th May 2007 (BGBl. I p. 666), last amended by Article 4 of the Act of 4th August 2016 (BGBl. I p. 1972)]

https://www.gesetze-im-internet.de/uschadg/USchadG.pdf
https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Strategien_Bilanzen_Gesetze/uschadg_en.pdf

This Act serves to implement the Directive of the European Parliament and of the Council on Environmental Liability (ELD, see section 1.3.1) with Regard to the Prevention and Remedying of Environmental Damage.

Act on Environmental Impact Assessment

Gesetz über die Umweltverträglichkeitsprüfung (UVPG)

[Act as promulgated on 24th February 2010 (BGBl. I p. 94), last amended by Article 2 of the Act of 8th September 2017 (BGBl. I p. 3370)]

https://www.gesetze-im-internet.de/uvpg/UVPG.pdf

The Act on the Assessment of Environmental Impacts contains provisions governing the Environmental Impact Assessment (EIA) and the Strategic Impact Assessment (SEA).

Further Regulations:

Espoo Contracts Act on the Convention on Environmental Impact Assessment in a Transboundary Context

Gesetz zu dem Übereinkommen vom 25. Februar 1991 über die Umweltverträglichkeitsprüfung im grenzüberschreitenden Rahmen sowie zu der auf der zweiten Konferenz der Parteien in Sofia am 27. Februar 2001 beschlossenen Änderung des Übereinkommens (Espoo-Vertragsgesetz)

[Act of 7th June 2002 (BGBl. II p. 1406)]

https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBl&bk=Bundesanzeiger_BGBl&start=//*%255B@attr_id=%2527bgbl202s1406.pdf%2527%255D#__bgbl__%2F%2F*%5B%40attr_id%3D%27bgbl202s1406.pdf%27%5D__1517909337642

This act approves the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo or EIA Convention, see section 1.3.1) and transposes it into national law.

Second Espoo Contracts Act on the Convention on Environmental Impact Assessment in a Transboundary Context

Gesetz zu der Zweiten Änderung des Übereinkommens vom 25. Februar 1991 über die Umweltverträglichkeitsprüfung im grenzüberschreitenden Rahmen (Zweites Espoo-Vertragsgesetz)

[Act of 17th March 2006 (BGBl. II p. 224)]

https://www.bgbl.de/xaver/bgbl/start.xav?start=//*%5B@attr_id=%27bgbl206s0224.pdf%27%5D#__bgbl__%2F%2F*%5B%40attr_id%3D%27bgbl206s0224.pdf%27%5D__1517909870252

This act approves the second amendment to the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo or EIA Convention, see section 1.3.1.)

Agreement between the Government of the Federal Republic of Germany and the Government of the Republic of Poland on the Implementation of the Convention on Environmental Impact Assessment in a Transboundary Context

[Agreement of 11th April 2006]

https://www.bmu.de/fileadmin/bmu-import/files/pdfs/allgemein/application/pdf/eia_agreement.pdf

With this Agreement the Government of the Federal Republic of Germany and the Government of the Republic of Poland determined to apply the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo or EIA Convention, see section 1.3.1.) between the Federal Republic of Germany and the Republic of Poland for the benefit of both countries.

Decree on Environmental Impact Assessment of Mining Projects

Verordnung über die Umweltverträglichkeitsprüfung bergbaulicher Vorhaben (UVP-V Bergbau)

[Decree of 13th July 1990 (BGBl. I p. 1420), last amended by Article 2 (24) of the Act of 20th July 2017 (BGBl. I p. 2808)]

https://www.gesetze-im-internet.de/uvpbergbv/UVP-V_Bergbau.pdf

This Decree regulates which mining measures require an environmental impact assessment.

Regional Regulation

Saxon Act on Environmental Impact Assessment

Gesetz über die Umweltverträglichkeitsprüfung im Freistaat Sachsen

[Act as promulgated on 9th July 2007 (SächsGVBl. p. 349), last amended by Article 5 of the Act of 12th July 2013 (SächsGVBl. p. 503)]

https://www.revosax.sachsen.de/vorschrift/5448-SaechsUVPG

This Act regulates the implementation of the Environmental Impact Assessment in the Free State of Saxony in respect to Article 3 of the Council Directive 85/337/EEC from 27th June 1985 on the environmental impact assessment of certain public and private projects (see DIRECTIVE 2011/92/EU in section 1.3.1.). The Environmental Impact Assessment should include the identification, description and assessment of the direct and indirect effects of a project on humans, including human health, animals and plants, soil, water, air, climate and landscape, cultural assets and other physical assets and the interactions between the aforementioned protected values.

4.3.2. Water Protection

National Regulations

Federal Water Act

Gesetz zur Ordnung des Wasserhaushalts (Wasserhaushaltsgesetz - WHG)

[Act of 31st July 2009 (BGBl. I p. 2585), last amended by Article 1 of the Act of 18th July 2017 (BGBl. I p. 2771)]

https://www.gesetze-im-internet.de/whg_2009/WHG.pdf

The Federal Water Act transposes the EU Water Framework Directive (WFD, see section 1.3.2) into German national law. German Länder (states) are allowed to adapt their respective water acts to the European provisions. The act is the legal basis for transboundary, sustainable water management too. It aims to

achieve a good status for all water bodies by 2027 at the latest, in terms of pollutant levels and the native aquatic fauna and flora. Management plans must be drawn up. River basin communities, sharing joint responsibility for the catchment areas of large rivers, have been established amongst the Länder (states) to coordinate this process (BMU 2019).

In addition, the Federal Water Act transposed the EU Floods Directive to water legislation in Germany. There are also several key decrees regulating the implementation of the Federal Water Act. These include the Waste Water Decree (Abwasserverordnung, AbwV), the Surface Waters Decree (Oberflächengewässerverordnung, OGewV, see below) and the Groundwater Decree (Grundwasserverordnung, GrwV). (BMU 2019).

Surface Waters Decree

Verordnung zum Schutz der Oberflächengewässer (Oberflächengewässerverordnung - OGewV)

[Decree of 20th June 2016 (BGBl. I p. 1373)]

https://www.gesetze-im-internet.de/ogewv_2016/OGewV.pdf

The Surface Waters Decree is one of the key decrees regulating the implementation of the Federal Water Act. Furthermore, it implements the EU environmental quality standards for inland waters.

Federal Waterway Act

Bundeswasserstraßengesetz (WaStrG)

[Act of 23rd May 2007 (BGBl. I p. 962, 2008 I p. 1980), last amended by Article 2 (8) of the Act of 20th July 2017 (BGBl. I p. 2808)]

https://www.gesetze-im-internet.de/wastrg/WaStrG.pdf

This Act lays down provisions relating to navigation on federal waterways. According to this Act in the management, expansion and new construction of federal waterways the needs of the country's culture and water resource management have to be observed/respected. Furthermore in the maintenance of waterways, the needs of the natural balance must be taken into account, the visual appearance and the recreational value of the aquatic landscape must be considered, and natural resources have to be preserved.

Flood Control Act

Gesetz zur Verbesserung des vorbeugenden Hochwasserschutzes (Hochwasserschutzgesetz)

[Act of 3rd May 2005 (BGBl. I p. 1224)]

https://www.bmu.de/fileadmin/bmu-import/files/pdfs/allgemein/application/pdf/hochwasserschutzgesetz.pdf

https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Wasser_Abfall_Boden/Wasser/hochwasserschutzgesetz_en.pdf

(see Flood Control Act II below)

Flood Control Act II

Gesetz zur weiteren Verbesserung des Hochwasserschutzes und zur Vereinfachung von Verfahren des Hochwasserschutzes (Hochwasserschutzgesetz II)

[Act of 30th June 2017 (BGBl. I p. 2193)]

https://www.bgbl.de/xaver/bgbl/text.xav?SID=&tf=xaver.component.Text_0&tocf=&qmf=&hlf=xaver.c

omponent.Hitlist_0&bk=bgbl&start=%2F%2F*%5B%40node_id%3D%27263128%27%5D&skin=pdf&tlevel=-2&nohist=1

"Catastrophic flooding events in recent years, especially the hundred-year flood of the summer of 2002, occasioned the first flood control act. With the Flood Control Act the German (Hochwasserschutzgesetz), government introduced stringent, nationally binding requirements for the prevention of flood damage for the first time" (BMU 2005)

"The Flood Control Act II will further improve flood control in Germany and will take better account of advancing climate change. The new provisions have largely been incorporated into the Federal Water Act, in addition the Federal Building Code, the Federal Nature Conservation Act and the Rules of Procedure of the Administrative Courts were also amended. […] [P]rotective measures were included for new risk areas in the Federal Water Act, namely, "risk areas outside of flood plains" (section 78b, Federal Water Act) and "flood retention areas" (section 78d, Federal Water Act)." (BMU 2017)

National Flood Protection Programme

Nationales Hochwasserschutzprogramm

[Programme decided at the Conference of Environment Ministers held in Heidelberg at 24th October 2014]

https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Binnengewaesser/hochwasserschutzprogramm_bericht_bf.pdf

The National Flood Protection Programme sets criteria and assessment standards for the identification and prioritisation of effective measures to the improvement of preventive flood protection.

Regional Regulations

Saxon Act on Water

Sächsisches Wassergesetz

[Act of 12th July 2013 (SächsGVBl. p. 503), last amended by Article 2 of the Act of 8th July 2016 (SächsGVBl. p. 287)]

https://www.revosax.sachsen.de/vorschrift/12868-SaechsWG

The Act on Water adopts the European Water Framework Directive (WFD, see section 1.3.2) to its regulatory frameworks. In addition to provisions for the management and use of waters (for shipping, etc.), aspects of water protection including the shoreline and riparian zones are regulated. Further, regulations on public water supply, groundwater and wastewater and flood protection are provided by the Act, as well as regulations for the development and re-naturalisation of water bodies. The Act defines the water authorities and their responsibilities and formulates the design of a water monitoring network.

Saxon Decree on Wastewater

Sächsische Kommunalabwasserverordnung

[Decree of 3rd May 1996 (SächsGVBl. p. 180), last amended by Article 2 of the Decree of 12th June 2014 (SächsGVBl. p. 363)]

https://www.revosax.sachsen.de/vorschrift/4365-Saechsische-Kommunalabwasserverordnung

The Decree implements regulations on communal waste water treatment 91/271/EEC of the European Council from 21st May 1991.

Saxon Bathing Water Decree

Sächsische Badegewässer-Verordnung

[Decree of 15th April 2008 (SächsGVBl. p. 279), amended by Article 5 of the Decree of 12th June 2014 (SächsGVBl. p. 363)]

https://www.revosax.sachsen.de/vorschrift/10076-Saechsische-Badegewaesser-Verordnung

Those provisions implement Regulation 2006/7/EC of the European Parliament and the European Council from 15th February 2006 on the quality and management of bathing water (see section 1.3.2).

4.3.3. Air and Climate Protection

National Regulations

Act on the Prevention of Harmful Effects on the Environment Caused by Air Pollution, Noise, Vibration and Similar Phenomena (Federal Pollution Control Act)

Gesetz zum Schutz vor schädlichen Umwelteinwirkungen durch Luftverunreinigungen, Geräusche, Erschütterungen und ähnliche Vorgänge (Bundes-Immissionsschutzgesetz - BImSchG)

[Act as promulgated on 17th May 2013 (BGBl. I p. 1274), last amended by Article 3 of the Act of 18th July 2017 (BGBl. I p. 2771)]

https://www.gesetze-im-internet.de/bimschg/BImSchG.pdf

The purpose of this Act is to protect people, animals and plants, the soil, the water, the atmosphere as well as cultural and other material goods against harmful environmental effects and to prevent the emergence of harmful environmental impact. Pollutants within the meaning of this Act are air contaminants, noise, vibration, light, heat, rays and similar effects on the environment.

Climate Protection Action Programme 2020

Aktionsprogramm Klimaschutz 2020

https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Aktionsprogramm_Klimaschutz/aktionsprogramm_klimaschutz_2020_broschuere_bf.pdf

The German cabinet adopted the Climate Protection Action Programme in Dezember 2014. The goal of climate protection in Germany is to reduce greenhouse gas emissions by at least 40 percent by 2020 compared to 1990 levels. With the present climate protection action programme 2020, the federal government decides measures to achieve the 2020 target. This includes, for example, measures relating to agriculture, land use, land use change or forestry. Agricultural measures are an amendment of the Fertiliser Decree and an increase in the area of organic farming. On the part of land use the conservation of permanent grassland and the protection of peatlands should play an important role.

Climate Action Plan 2050 - Principles and goals of the German government's climate policy

Klimaschutzplan 2050 – Klimaschutzpolitische Grundsätze und Ziele der Bundesregierung

https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Klimaschutz/klimaschutzplan_2050_bf.pdf

https://www.bmu.de/fileadmin/Daten_BMU/Pools/Broschueren/klimaschutzplan_2050_en_bf.pdf
(English version)

The German cabinet adopted the Climate Action Plan 2050 in November 2016. The final target is to reach a 80 to 95 percent lower greenhouse gas emissions compared to 1990 by 2050. The Climate Action Plan provides guidance to all areas of action in the process to achieve the climate targets in line with the Paris

Agreement (Climate Change Conference in Paris 2015). These areas of action are energy, buildings, transport, trade and industry, agriculture and forestry. In addition to the measures of the Climate Protection Action Programme 2020 (see above), the Climate Action Plan also mentiones the conservation and sustainable management of forests or the reduction of land consumption as measures to achieve the target.

German Strategy for Adaptation to Climate Change (DAS) and Adaptation Action Plan (APA)

Deutsche Anpassungsstrategie an den Klimawandel (DAS) und Aktionsplan Anpassung (APA)

[Strategy decided by the Federal Cabinet on 17th December 2008; Action Plan adopted in August 2011 by the Federal Government]

https://www.bmu.de/fileadmin/bmu-import/files/pdfs/allgemein/application/pdf/das_gesamt_bf.pdf

https://www.bmu.de/fileadmin/bmu-import/files/pdfs/allgemein/application/pdf/aktionsplan_anpassung_klimawandel_bf.pdf

The DAS and the APA aim to reduce the negative effects of climate change and to seize opportunities. The DAS identifies possible climate impacts and outlines action options for several fields of action and selected regions. The APA specifies the DAS by specifically naming activities of the federal government in the field of climate change adaptation and determines future steps for a further development and implementation of the DAS. In Addition, the APA helps individuals, businesses and governments to incorporate climate and extreme weather factors into their planning and decision-making.

Regional Regulations

Saxon Energy and Climate Programme 2012

Energie und Klimaprogramm Sachsens 2012

[Programme of 12th March 2013]

https://www.umwelt.sachsen.de/umwelt/download/Energie-_und_Klimaprogramm_Sachsen_2012.pdf

The Programme describes the current situation of the energy sector in Saxony and trends in climate change and sets out objectives and action to reduce emissions in accordance with national climate objectives.

4.3.4. Soil Protection

National Regulations

Federal Soil Protection Act and Federal Soil Protection and Contaminated Sites Decree

Gesetz zum Schutz vor schädlichen Bodenveränderungen und zur Sanierung von Altlasten (Bundes-Bodenschutzgesetz - BBodSchG) und Bundes-Bodenschutz- und Altlastenverordnung (BBodSchV)

[Act of 17th March 1998 (BGBl. I p. 502), last amended by Article 3 (3) of the Decree of 27th September 2017 (BGBl. I p. 3465); Decree of 12th July 1999 (BGBl. I p. 1554), last amended by Article 3 (4) of the Decree of 27th September 2017 (BGBl. I p. 3465)]

https://www.gesetze-im-internet.de/bbodschg/BBodSchG.pdf

https://www.gesetze-im-internet.de/bbodschv/BBodSchV.pdf

The Federal Soil Act (BBodSchG) and Federal Soil Protection and Contaminated Sites Decree (BBodSchV) provide a nationwide legal basis for the conservation of soil as a limited resource to ensure that the diverse functions of soil will be fully available to future generations as well. Furthermore they are the legal basis for the evaluation and rehabilitation of contaminated sites.

Regional Regulations

Saxon Act on Soil Protection and Waste Management

Sächsisches Abfallwirtschafts- und Bodenschutzgesetz

[Act of 31st May 1999 (SächsGVBl. p. 261), last amended by Article 7 of the Act of 6th June 2013 (SächsGVBl. p. 451)]

https://www.revosax.sachsen.de/vorschrift/1924-SaechsABG

This Act defines the objectives and principles of soil protection. In addition, measures of soil protection and necessary prohibitions, restrictions and safeguard measures as well as regulations on area-related measures are defined. Furthermore, the competent authorities are defined. The aim of this Act is to sustainably protect or restore the functions of the soil, to rehabilitate soil and sanitise contaminated sites and to take precautionary actions against negative effects on the soil.

4.4. Economy and Sustainable Development

4.4.1. Agriculture

National Regulations

A Strategy of the German Federal Ministry of Food, Agriculture and Consumer Protection on Conservation and Sustainable Use of Biodiversity for Food, Agriculture, Forestry and Fisheries (2007)

Agrobiodiversität erhalten, Potenziale der Land-, Forst- und Fischereiwirtschaft erschließen und nachhaltig nutzen - Eine Strategie des BMELV (2007)

http://www.bmel.de/cae/servlet/contentblob/384104/publicationFile/23380/StrategiepapierAgrobiodiversitaet.pdf

http://www.ble.de/DE/Themen/Landwirtschaft/Biologische-Vielfalt/Strategie-des-BMEL-zur-Agrobiodiversitaet/strategie-des-bmel-zur-agrobiodiversitaet_node.html

This Strategy aims on improving the conditions for the long-term conservation and sustainable innovative utilisation of genetic resources for food, agriculture, forestry and fisheries as a precautionary strategy. Furthermore it is focused on better linking the conservation and use of biodiversity as part of a rural innovation strategy for sustainable development.

Regional Regulations

Action Plan to strengthen Organic Agriculture in Saxony (2017)

Aktionsplan zur Stärkung des ökologischen Landbaus im Freistaat Sachsen (2017)

https://www.landwirtschaft.sachsen.de/landwirtschaft/5772.htm

This Action Plan defines the framework conditions for the development of organic agriculture in Saxony. Amongst other things, the issues of land use, livestock farming and the development of farms are dealt within this plan. The main principle is that land management should be resource efficient and multifunctional, a key element of the green infrastructure concept. The action plan contains various fields of action and measures to implement those principles. Furthermore, various funding opportunities for organic farming are described.

4.4.2. Forestry

National Regulations

Federal Forestry Act

Gesetz zur Erhaltung des Waldes und zur Förderung der Forstwirtschaft (Bundeswaldgesetz - BWaldG)

[Act of 2nd May 1975 (BGBl. I p. 1037), last amended by Article 1 of the Act of 17th January 2017 (BGBl. I p. 75)]

https://www.gesetze-im-internet.de/bwaldg/BWaldG.pdf

The Federal Forestry Act is a basic Act on the conservation of forests and the promotion of forestry. The purpose of this Act is to conserve forests for their economic benefits (productive function) and their importance for the environment, in particular the constant services rendered by forests to preserve the ecosystem, for the climate, clean air, soil fertility, water supply, to sustain the landscape, agriculture, infrastructure, and recreation opportunities for the population (protective and recreational functions). A further purpose of this act is to expand forests, wherever possible, and to ensure their sustainable management.

Forest Strategy 2020 "Sustainable Forest Management - An Opportunity and a Challenge for Society" (2011)

Waldstrategie 2020 „Nachhaltige Waldbewirtschaftung – eine gesellschaftliche Chance und Herausforderung" (2011)

https://www.bmel.de/SharedDocs/Downloads/EN/Publications/ForestStrategy2020.pdf?__blob=publicationFile

https://www.bmel.de/SharedDocs/Downloads/Broschueren/Waldstrategie2020.pdf?__blob=publicationFile

In nine fields of action the Forest Strategy identifies existing challenges and opportunities, analyses potential conflicts of goals and formulates possible solutions. Those fields of action are:

- Climate protection and adaptation to climate change
- Property, work and income
- Raw materials, use and efficiency
- Biodiversity and forest conservation
- Silviculture
- Hunting
- Protection of soil and water balance
- Recreation, health and tourism
- Education, public relations and research

Regional Regulations

Saxon Forestry Act

Waldgesetz für den Freistaat Sachsen

[Act of 10th April 1992 (SächsGVBl. p. 137), which was last amended by Article 5 of the Act of 29th April 2015 (SächsGVBl. p. 349)]

https://www.revosax.sachsen.de/vorschrift/5405-SaechsWaldG

This Act describes the interests of the forest and forest areas in the Free State of Saxony. In addition to some general provisions, such as the definition of "forests" or the differentiation of the various types of forest ownership, this Act also provides provisions for the protection and preservation of the forest, and its function. Furthermore, regulations for the management of forest and forest areas as well as for behaviour while staying in forest areas are described. This Act also describes the tasks and responsibilities of forestry authorities. Particular attention is paid to the state-owned enterprise "Sachsenforst", which acts as the Upper Forestry Authority.

The state-owned enterprise "Sachsenforst" is responsible for forest and forest areas in the Free State of Saxony. It performs the duties of the upper forestry and hunting authority. The state enterprise "Sachsenforst" is committed to sustainable and ecologically oriented forest management. The state enterprise serves also as a research institution and is responsible for compensation measures in forest areas. It carries out protection and rehabilitation measures in forests and forest areas and raises environmental awareness amongst the population through numerous projects.

Forest Strategy 2050

Waldstrategie 2050

https://publikationen.sachsen.de/bdb/artikel/11309

The strategy entails principles for the successful development of Saxon forests as natural landscapes and areas for recreational and economic purposes up to the year 2050. It gives an overview of current challenges and how those can be overcome considering partly competing interests. Forest owners and their associations, forestry and wood processing industry, state and local authorities and all interested citizens are invited to join and support the implementation of the strategy.

4.4.3. Hunting and Fishing

National Regulations

Federal Hunting Legislation

Bundesjagdgesetz (BJagdG)

[Act as promulgated on 29th September 1976 (BGBl. I p. 2849), last amended by Article 3 of the Act of 8th September 2017 (BGBl. I p. 3370)]

https://www.gesetze-im-internet.de/bjagdg/BJagdG.pdf

The Federal Hunting Legislation specifies those species of animals that can be hunted (game), and regulates who is allowed to hunt when, what, where and how. The obligation of gamekeeping is connected with the hunting right. The purpose of gamekeeping is to maintain species-rich and healthy game populations adapted to the landscape and cultural conditions as well as the care and protection of their livelihoods.

The Federal Hunting Legislation is supplemented in each of the sixteen German states by Länder-level legislation.

In Germany fishing in inland waters is regulated by Länder-level fisheries laws only.

Regional Regulations

Saxon Act on Hunting

Sächsisches Jagdgesetz

[Act of 8th June 2012 (SächsGVBl. p. 308)]

https://www.revosax.sachsen.de/vorschrift/12495-Saechsisches-Jagdgesetz

This Act sets out the most important regulations for hunting in the Free State of Saxony. In addition to general provisions for hunting, the interests of game protection and wildlife habitats are regulated by law. This includes, for example, the delineation of protection areas for wildlife. Furthermore, the hunting authorities and their responsibilities are defined, as well as regulations to support hunting.

Saxon Act on Fisheries

Sächsisches Fischereigesetz

[Act of 9th July 2007 (SächsGVBl. p. 310), last amended by the Act of 29th April 2012 (SächsGVBl. p. 254)]

https://www.revosax.sachsen.de/vorschrift/9553-Saechsisches-Fischereigesetz

This Act regulates the interests of fisheries in the Free State of Saxony. In addition to general fishery provisions and the protection and conservation of the flora and fauna living in the waters, the Act covers riparian zones. These include, for example, the protection of fish stocks and the reduction of barriers for fish migration. It also defines the fisheries authorities and their responsibilities and describes schemes to promote fisheries.

4.4.4. Tourism and Recreation

National Regulations

Within the German federal government, the Federal Ministry for Economic Affairs and Energy (Bundesministerium für Wirtschaft und Energie, BMWi) is responsible for tourism policy. The aim of tourism policy at the federal level is to create favorable conditions for a positive tourism development in Germany. The concrete planning, development and direct promotion of tourism is the responsibility of the individual states and municipalities.

There is no federal tourism law in Germany.

The Federal Government anchored a **National Tourism Strategy** in the coalition agreement of the 12th March 2018, which is not available yet. The German Tourism Association e.V., which is the only federally built touristic umbrella organization of local, regional and national tourism organizations and is funded entirely by membership fees, formulated:

Requirements of the German Tourism Association DTV for a national tourism strategy (status 17th August 2018)

Anforderungen des Deutschen Tourismusverbandes DTV an eine nationale Tourismusstrategie (Stand: 17.8.2018)

https://www.deutschertourismusverband.de/fileadmin/Mediendatenbank/Bilder/Presse/Presse_PDF/DTV_Nationale_Strategie.pdf

These requirements contain ten fields of action. Especially the 4th Field of Action: Securing prosperity and sustaining livelihoods through sustainable tourism (4. Handlungsfeld: Mit nachhaltigem Tourismus Wohlstand sichern und Lebensgrundlagen erhalten) is focusing on the protection of nature and environment from a tourism economic perspective and emphasizes the central importance of an intact natural offer - nature, landscape, water and air – for tourism.

Commissioned by the German Tourism Association DTV (Deutscher Tourismusverband e.V.) and funded by

the Federal Environment Ministry (Bundesministeriums für Umwelt, Naturschutz, Bau und Reaktorsicherheit – BMUB) and the Federal Agency for Nature Conservation (Bundesamt für Naturschutz - BfN) the BTE Tourismus- und Regionalberatung elaborated:

PRACTICE GUIDELINES Sustainability in German Tourism – Requirements | Recommendations | Implementation aid (2016)

PRAXISLEITFADEN Nachhaltigkeit im Deutschlandtourismus - Anforderungen | Empfehlungen | Umsetzungshilfen (2016)

https://www.deutschertourismusverband.de/fileadmin/Mediendatenbank/Dateien/leitfaden_nachhaltigkeit_160308.pdf

These Practice Guidelines offer nationwide applicable recommendations for the sustainable orientation of tourism destinations broken down into the four sustainability dimensions of management, ecology, economics and social affairs and subdivided into a total of eight fields of action. Especially the field "protection of nature and landscape" (SCHUTZ VON NATUR UND LANDSCHAFT) considers measures to protect ecosystems or endangered animal and plant species.

Regional Regulations

Tourism Strategy of Saxony 2020

Tourismusstrategie Sachsen 2020

https://publikationen.sachsen.de/bdb/artikel/12760/documents/21019

Tourism has become an important economic factor for the Free State of Saxony since 1990. The fields of action defined by the tourism strategy are more focused on economic factors such as competitiveness, strengthening the efficiency of tourism infrastructure, marketing or funding. All future touristic development activities should be guided by the principles of supply and service quality, accessibility, demographic change, sustainability, innovation, and rural development.

Tourism concept for the touristic regions of the district of Görlitz (2015)

Tourismuskonzeption für die touristischen Regionen des Landkreises Görlitz (2015)

https://media.lk-goerlitz.active-city.net/aemter/kreisentwicklung/tourismus/Tourismuskonzeption2015.pdf

The tourism concept defines thematic priorities for tourism in the district of Görlitz as part of the very diverse Upper Lusatian region which offers plenty of topics and potentials for touristic development. The two major topics are "discovering culture" and "actively experiencing nature", both with the aspect "borderless".

4.4.5. Energy

National Regulations

Renewable Energies Act

Gesetz für den Ausbau erneuerbarer Energien (Erneuerbare-Energien-Gesetz - EEG 2017)

[Act of 21st July 2014 (BGBl. I p. 1066), last amended by Article 1 of the Act of 17th July 2017 (BGBl. I p. 2532)]

https://www.gesetze-im-internet.de/eeg_2014/EEG_2017.pdf

The purpose of this Act is to facilitate the sustainable development of energy supply, in particular in the

interest of climate and environmental protection, to conserve fossil energy resources and to promote further development of technologies for generating electricity from renewable sources.

The objective of this Act is to increase the share of electricity generated from renewable energies in gross electricity consumption.

Further Regulations:

National Renewable Energy Action Plan in accordance with Directive 2009/28/EC on the promotion of the use of energy from renewable sources (2010)

Nationaler Aktionsplan für erneuerbare Energie gemäß der Richtlinie 2009/28/EG zur Förderung der Nutzung von Energie aus erneuerbaren Quellen (2010)

https://ec.europa.eu/energy/sites/ener/files/documents/dir_2009_0028_action_plan_germany.zip

This Action Plan represents the current (July 2010) expected development of the expansion of renewable energies in Germany to achieve the national target under the Directive 2009/28/EC and thus the contribution of Germany to the EU overall target of 20% renewable energy in 2020. It contains existing and currently planned measures to reach the national target, for example measures in the field of spatial planning as well as specific measures to promote the use of energy from biomass.

Decree on Requirements for the Sustainable Production of Liquid Biomass for the Generation of Electricity

Verordnung über Anforderungen an eine nachhaltige Herstellung von flüssiger Biomasse zur Stromerzeugung (Biomassestrom-Nachhaltigkeitsverordnung - BioSt-NachV)

[Decree of 23rd July 2009 (BGBl. I p. 2174), last amended by Article 125 of the Act of 29th March 2017 (BGBl. I p. 626)]

http://www.gesetze-im-internet.de/biost-nachv/BioSt-NachV.pdf

This Decree transposes the Directive 2009/28/EC of the European Parliament and of the Council of 23rd April 2009 on the promotion of the use of energy from renewable sources.

Regional Regulations

Saxon Energy and Climate Programme 2012

Energie und Klimaprogramm Sachsens 2012

[Programme of 12th March 2013]

https://www.umwelt.sachsen.de/umwelt/download/Energie-_und_Klimaprogramm_Sachsen_2012.pdf

(see section 4.3.3)

4.4.6. Sustainable Development

National Regulations

German Sustainability Strategy (2016)

Deutsche Nachhaltigkeitsstrategie (2016)

https://www.bundesregierung.de/Content/Infomaterial/BPA/Bestellservice/Deutsche_Nachhaltigkeitsstrategie_Neuauflage_2016.pdf?__blob=publicationFile&v=7

The new edition of the German Sustainability Strategy of 2016 specifies all 17 global UN sustainable development goals for Germany and identifies the measures taken by the Federal Government to achieve these German goals by 2030 in all areas of sustainable development.

Regional Regulations

Saxon Sustainable Development Strategy (2013)

Nachhaltigkeitsstrategie des Freistaates Sachsen (2013)

https://www.smul.sachsen.de/download/verwaltungsportal/nachhaltigkeitsstrategie_smul.pdf

The strategy on sustainable development of the Free State of Saxony is continuously developed further and sets the framework for development in all dimensions of sustainability, the economic, social and environmental dimension.

4.5. Spatial Planning

Spatial Planning in Germany consist of Landscape Planning, focused on the sustainable development of nature and landscape, and Regional Planning, focused on organizing and useing a geographical area, often a specific administrative area, according to its natural, economic and social possibilities. Depending on the area or administrative unit different planning instruments, especially plans and programmes have to be developed (Table 4: Instruments and Scale of Landscape Planning and Regional Planning in Germany (adapted from von Haaren et al. 2008).

Table 4: Instruments and Scale of Landscape Planning and Regional Planning in Germany (adapted from von Haaren et al. 2008)

Planning area	Landscape Planning	Overall Spatial Planning (Regional Planning)	Sectoral Planning	Planning Scale of Landscape Planning
Land (Federal State)	**Landscape Programme**	**Federal State Regional Planning Programme**	**Sectoral Programme/Plan at Federal State Level**	1 : 500,000 to 1 : 200,000
Region/Administrative district, district	**Landscape Master Plan**	**Regional Plan**	**Sectoral Framework Plan**	1 : 100,000 to 1 : 25,000
Municipality	**Landscape Plan**	**Preliminary Land Use Plan**	**Project Plan at approval or planning determination**	1 : 10,000 to 1 : 5,000
Part of the municipal area	**Open Space Structure Plan**	**Binding Land Use Plan**	**level and/or Construction Plan**	1 : 2,500 to 1 : 1,000

4.5.1. Regional and Local Planning

National Regulations

The §8-12 of the "**Act on Nature Conservation and Landscape Management**" (see section 4.2.1) are dedicated to regional planning. They define tasks and content of landscape planning and commit to the preparation of landscape programmes and landscape master plans as well as Landscape plans and green building plans. The §16 of this Act regulates the stocking of compensatory measures and §18 clarifies the relationship to building law especially to the Federal Building Code (see below).

Regional Planning Act

Raumordnungsgesetz (ROG)

[Act of 22nd December 2008 (BGBl. I p. 2986), last amended by Article 2 (15) of the Act of 20th July 2017 (BGBl. I p. 2808)]

https://www.gesetze-im-internet.de/rog_2008/ROG.pdf

According to this Act the entire area of the Federal Republic of Germany and its regions are to be developed, arranged and secured through spatial planning plans, spatial cooperation and the coordination of spatially significant plans and measures. Different requirements for the region have to be harmonized with each

other and the conflicts occurring at the respective planning level have to be compensated for. Furthermore precautions have to be taken for individual uses and functions of the region. The guiding principle is a sustainable spatial development that reconciles the social and economic demands of the region with its ecological functions and a durable, spaciously balanced order with equal living conditions in the subspaces.

The Act transposes (among others) the following acts of Community law:

- Birds Directive (see section 1.2.1)
- Habitats Directive (see section 1.2.1)
- Strategic Environmental Assessment Directive - SEA Directive (see section 1.3.1)

According to §13 of this Act national spatial plans, regional plans and regional land use plans have to be set up in each of the 16 federal states.

Regional Planning Decree

Raumordnungsverordnung (RoV)

[Decree of 13th December 1990 (BGBl. I p. 2766), last amended by Article 5 (35) of the Act of 24th February 2012 (BGBl. I p. 212)]

https://www.gesetze-im-internet.de/rov/RoV.pdf

The Regional Planning Decree transposes the Regional Planning Act (see above).

Federal Land Utilisation Decree

Verordnung über die bauliche Nutzung der Grundstücke (Baunutzungsverordnung - BauNVO)

[Decree as promulgated on 21st November 2017 (BGBl. I p. 3786)]

https://www.gesetze-im-internet.de/baunvo/BauNVO.pdf

The Federal Land Utilisation Decree regulates the possible determinations regarding type and measure of the structural use of a property, the construction method and the developable property area in construction plans.

Federal Act on Allotment Gardens

Bundeskleingartengesetz (BKleingG)

[Act of 28th February 1983 (BGBl. I p. 210), last amended by Article 11 of the Act of 19th September 2006 (BGBl. I p. 2146)]

https://www.gesetze-im-internet.de/bkleingg/BKleingG.pdf

According to this Act an allotment garden is a garden that serves the user for non-commercial horticultural use, in particular for the production of horticultural products for personal use, and recreation. It is located in a complex in which several individual gardens with community facilities, such as paths, playgrounds and club houses, are summarized.

The Act states that an allotment garden should not be larger than 400 square metres and the interests of environmental protection, nature conservation and landscape management should be taken into account in the use and management of the garden.

Many cities and communities engage in the development of **Integrated Development Concepts** (Integrated City Development Concepts - Integrierte Stadt Entwicklungskonzepte → see section 4.5.2, Integrated Rural Development Concepts - Intergrierte Ländliche Entwicklungskonzept, Integrated municipal development concepts - Integrierte kommunale Entwicklungskonzepte). The concepts are usually developed in a highly

participatory way.

For example, an **Integrated Rural Development Concept** (in German ILEK for short) is a special concept for rural development that aims to develop rural areas as living, working, recreational and natural areas at the same time. This concept aims at the widest possible consideration of different fields of action. Particular attention should be given to regional characteristics, and regional forces should be activated and regional networks established.

Regional Regulations

The §6-8 of the **Saxon Act on Nature Conservation and Landscape Management** (see section 4.2.1) are dedicated to landscape planning. They define tasks and content of landscape planning and commit to the preparation of **Landscape Programmes** (Landschaftsprogramm) and **Landscape Master Plans** (Landschaftsrahmenplan) as well as **Landscape Plans** (Landschaftsplan) and **Open Space Structure Plans** (Grünordnungsplan). The §11 of this Act regulates the stocking of compensational measures and §9 clarifies the relationship to building law especially to the **Federal Building Code** (see above).

Landscape planning is a comprehensive, precautionary planning tool for the protection, management and development of nature and landscape. It provides the ecological basis for sustainable regional development. Furthermore, it serves as a basis for the assessment of interventions, the design of compensatory measures, the provision of recreation opportunities in the landscape and environmentally-sound agriculture, forestry and water management.

For the landscape planning process, guidelines and general environmental objectives are established. They derive from the legal framework and strategic documents, such as the **National Biodiversity Strategy of Germany (2007)** and the **Programme on Conservation of Biological Diversity in Saxony 2020**.

The **Landscape Plans** are expected to provide information on:

- the existing and the expected state and quality of nature and landscape(s),
- the specific objectives of nature conservation and landscape management,
- the assessment of the existing and expected state and quality of nature and landscape according to those objectives, including the resulting conflicts,
- the requirements and measures to implement the specific objectives of nature conservation and landscape management, in particular:
  - measures to avoid, reduce or eliminate the negative impact on nature and landscape(s),
  - measures to protect certain parts of nature and landscape(s) according to Chapter 4 of the Federal Act on Nature Conservation, as well as the biotopes and habitats of wild animals and plants,
  - delineation of areas which, due to their condition, their location or their natural development potential, are particularly suitable for future measures of nature conservation and landscape management, for compensation due to interventions in nature and landscape and for the use of natural and landscape-related subsidies,
  - measures to establish and protect a biotope network, a network of "Natura 2000" sites and to support biotope networking
  - measures to protect, to improve and to regenerate soils, water, air and climate,
  - measures to preserve and develop the diversity, character and beauty as well as the recreational value of nature and landscape(s),
  - measures to preserve and develop open spaces in populated and unpopulated areas.

Guidelines for the Development of Nature and Landscape in Saxony (2010)

Leitlinien für die Entwicklung von Natur und Landschaft in Sachsen (2010)

https://www.umwelt.sachsen.de/umwelt/natur/22460.htm

https://www.umwelt.sachsen.de/umwelt/download/Leitlinien_Naturschutz_2010_Langfassung.pdf

The guidelines refer mostly to legally binding international agreements, directives or regulations of the European Union and federal and provincial laws. Various programmes and strategies outline additional goals and objectives.

The guidelines for Saxony elaborate in detail the following environmental values: "species, communities, habitats, biodiversity", "soil", "water", "climate and air", "cultural landscape", "landscape" and "landscape-related recreation". They are published as part of the **Saxon Landscape Programme** (Landschaftsprogramm) of the Saxon State Agency for Environment, Agriculture and Geology (LfULG) with the title "Derivation, Formulation and Reasoning of Guidelines for Nature Conservation and Landscape Management in the Free State of Saxony (Ableitung, Formulierung und Begründung von Leitlinien des Naturschutzes und der Landschaftspflege im Freistaat Sachsen)".

Further Regulations on Landscape Planning:

Recommended Action on Intervention Regulation under Nature Conservation Law (2003)

Handlungsempfehlung zur naturschutzrechtlichen Eingriffsregelung (2003)

https://www.umwelt.sachsen.de/umwelt/natur/8516.htm

https://www.umwelt.sachsen.de/umwelt/download/Handlungsempfehlung_170709.pdf

(see section 4.2)

Ecological Account and Saxon Ecological Account Decree

Ökokonto und Sächsische Ökokonto-Verordnung (SächsÖKoVO)

[Decree of 2nd July 2008 (SächsGVBl. p. 498)]

https://www.revosax.sachsen.de/vorschrift/10363-Saechsische-Oekokonto-Verordnung

(see section 4.2)

Saxon Regional Planning Act

Landesplanungsgesetz

[Act of 11th December 2018 (SächsGVBl. p. 706)]

https://www.revosax.sachsen.de/vorschrift/11430-Landesplanungsgesetz

This Act sets out the principles of regional planning in Saxony. Furthermore, specifications are set up regarding the structure, task and content of the **Saxon State Development Plan** (Landesentwicklungsplan, see below) and the **Regional Plans** (Regionalplan). In addition, the classification and definition of regional planning associations are described.

Saxon State Development Plan (2013)

Landesentwicklungsplan Sachsen (LEP 2013)

http://www.landesentwicklung.sachsen.de/11117.htm

http://www.landesentwicklung.sachsen.de/download/Landesentwicklung/LEP_2013.pdf

The State Development Plan sets out the objectives and principles of regional planning for the Free State of Saxony. It is thus the most important instrument of landscape planning. Following a comprehensive

participation process, the Saxon State Government adopted the State Development Plan 2013 (LEP 2013) as a Decree on 14th August 2013, thus replacing the previously binding LEP 2003.

The State Development Plan outlines priority areas and reserved areas for the establishment of a biotope network.

Biotope Network in Saxony

Biotopverbund Sachsen

https://www.umwelt.sachsen.de/umwelt/download/07_08_15_BVP_Endfassung-schwarz_Pilotphase_mit_Form_neu.pdf

The **Saxon Nature Conservation Act** (see section 4.2.1) calls for the development of a biotope network. Natura 2000 areas, nature reserves, national parks, biosphere reserves, parts of landscape protection areas, nature parks, natural monuments, protected landscape components and legally protected biotopes according to Federal and the Saxon Nature Conservation Act shall form the network of habitats. In 2007 the Saxon State Agency for Environment, Agriculture and Geology (LfULG) published "Technical Working Principles for a Biotope Network in the Free State of Saxony (Fachliche Arbeitsgrundlagen für einen landesweiten Biotopverbund im Freistaat Sachsen)". The **Saxon State Development Plan of 2013** (see above) outlines priority and reserved areas for the biotope network and provides the legal basis for the network.

4.5.2. Urban Planning

National Regulations

Federal Building Code

Baugesetzbuch (BauGB)

[Building Code as promulgated on 3rd November 2017 (BGBl. I p. 3634)]

https://www.gesetze-im-internet.de/bbaug/BauGB.pdf

The Federal Building Code is the main legal basis for German urban development law. It aims to secure sustainable urban development that unites social, economic and environmental protection requirements while remaining responsible to future generations. The central instrument for sustainable urban development is development planning. The creation of urban development plans is first and foremost the responsibility of cities and municipalities as part of local self-government. Urban development plans, in particular binding development (zoning) plans, allow municipalities to designate areas for certain types of use and to set requirements for such uses. For example, zoning plans can designate areas that must remain free of construction, or set aside land for green space or infrastructure facilities.

The code contains rules on the proper consideration that should be given to a variety of aspects and interests in the planning decision process. This includes comprehensive provisions for public and public authority participation as well as environmental protection. Development planning can also limit the ways sites can be used; for this reason, the Federal Building Code also includes provisions for compensation where property value decreases due to planning decisions.

The Federal Building Code transposes the following acts of European Community law:

- Birds Directive (79/409/EEC, 2006/105/EC)
- Habitats Directive (92/43/EEC, 2006/105/EC)
- Strategic Environmental Assessment Directive - SEA Directive (2001/42/EC)
- Environmental Impact Assessment Directive - EIA Directive (85/337/EEC, 2003/35/EC)

Position paper of the German City Council "Integrated Urban Development Planning and Urban Development Management" (2015)

Positionspapier des Deutschen Städtetages „Integrierte Stadtentwicklungsplanung und Stadtentwicklungsmanagement“ (2015)

http://www.staedtetag.de/imperia/md/content/dst/presse/2015/positionspapier_integrierte_stadtentwicklungsplanung_151214.pdf

The position paper encourages and guides city authorities to develop integrated city development concepts (Integrierte Stadt Entwicklungskonzepte - INSEKs). It lists several cross-cutting issues, among others the improvement of green and water spaces in cities, area management and planning process and provides for qualifying criteria.

Regional Regulations

The §6-8 of the **Saxon Act on Nature Conservation and Landscape Management** (see section 4.2.1) are dedicated to landscape planning. They define tasks and content of landscape planning and commit to the preparation of plans. Regarding urban planning especially **Landscape Plans** (Landschaftsplan) and **Open Space Structure Plans** (Grünordnungsplan) are important.

4.5.3. Sectoral Planning

National Regulations

The German Federal Government is responsible for the construction and maintenance of the federal transport infrastructure (federal railway infrastructure, federal waterways, and federal trunk roads). The **Federal Transport Infrastructure Plans** (Bundesverkehrswegepläne - BVWP) form the basis for the maintenance, development and expansion of federal transport infrastructure. The BVWP is a framework program and planning tool, but it is not a financing plan or program and has no legal character. It is valid for the specified period, usually 10 to 15 years.

Federal Transport Infrastructure Plan 2030 and Environmental Report on the Federal Transport Infrastructure Plan

Bundesverkehrswegeplan 2030 (BVWP) und Umweltbericht zum Bundesverkehrswegeplan

https://www.bmvi.de/SharedDocs/DE/Publikationen/G/bundesverkehrswegeplan-2030-gesamtplan.pdf?__blob=publicationFile

https://www.bmvi.de/SharedDocs/DE/Anlage/VerkehrUndMobilitaet/BVWP/bvwp-2030-umweltbericht.pdf?__blob=publicationFile

The Federal Transport Infrastructure Plan 2030 is an important instrument of federal transport infrastructure planning and sets the course for the next 10 to 15 years. It covers both the existing networks as well as new construction projects in the field of transport on roads, railways and waterways. The projects assessed in the new Plan were subjected to a benefit-cost analysis and additionally evaluated in terms of environmental protection and nature conservation, spatial planning and urban planning (BMVI 2019).

Strategy for Sustainable Freight Transport

Strategie für einen nachhaltigen Güterverkehr

https://www.umweltbundesamt.de/sites/default/files/medien/publikation/long/3857.pdf

This Strategy reports on the development and environmental impacts of freight transport, defines

environmental objectives for freight transport and provides measures and tools for designing a more environmentally friendly freight transport.

Regional Regulations

State Transport Plan Saxony 2025 (including Environmental Report)

Landesverkehrsplan Sachsen 2025 (einschließlich Umweltbericht)

https://publikationen.sachsen.de/bdb/artikel/20153/documents/29277

With the State Transport Plan Saxony 2025 the Saxon government sets its transport policy goals and plans for transport infrastructure by 2025.

4.5.4. Access to Information on the Environment and Public Participation

National Regulations

Environmental Information Act

Umweltinformationsgesetz (UIG)

[Act as promulgated on 27th October 2014 (BGBl. I p. 1643), last amended by Article 2 (17) of the Act of 20th July 2017 (BGBl. I p. 2808)]

https://www.gesetze-im-internet.de/uig_2005/UIG.pdf

https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Strategien_Bilanzen_Gesetze/umweltinformationsgesetz_en_bf.pdf

The Environmental Information Act regulates public access to information on the environment. It obliges all bodies of public administration to make data available to anyone having a justified interest. The Environmental Information Act transposes the EU Environmental Information Directive (see section 0) into German law and entered into force on 14th February 2005. (UBA 2018)

Geodata Access Act

Gesetz über den Zugang zu digitalen Geodaten (Geodatenzugangsgesetz - GeoZG)

[Act of 10th February 2009 (BGBl. I p. 278), amended by Article 1 of the Act of 7th November 2012]

https://www.gesetze-im-internet.de/geozg/GeoZG.pdf

The Geodata Access Act serves the implementation of the directive 2007/2/EC of the European Parliament and of the Council of 14th March 2007 on the establishment of the Infrastructure for Spatial Information in the European Community (INSPIRE-Directive) into German law.

Public Participation Act

Gesetz über die Öffentlichkeitsbeteiligung in Umweltangelegenheiten nach der EG-Richtlinie 2003/35/EG (Öffentlichkeitsbeteiligungsgesetz)

[Act of 9th December 2006 (BGBl. I p. 2819)]

http://www.aarhus-konvention.de/media/content/files/Umsetzung%20in%20Deutschland/oeffentlichkeitsbeteiligungsgesetz.pdf

The Public Participation Act serves the implementation of the directive 2003/35/EC of the European

Parliament and of the Council of 26th May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment into German law.

Administrative Procedure Act

Verwaltungsverfahrensgesetz (VwVfG)

https://www.gesetze-im-internet.de/vwvfg/

This Act contains rules for the public administrative activities of federal authorities, federal bodies, institutions and foundations under public law. One of the most important regulations is the administrative act (Verwaltungsakt). For example, a building permit is such an administrative act. For its occurrence, in principle, public participation is mandatory. § 25 of this act is about consultation, information and early public participation and § 27a regulates the public announcement of administrative activities on the internet. § 28 provides for prior hearing of the citizen (Anhörung).

Regional Regulations

Saxon Act on Environmental Information

Sächsisches Umweltinformationsgesetz

[Act of 1st June 2006 (SächsGVBl. p. 146), last amended by Article 1 of the Act of 26th October 2016 (SächsGVBl. p. 507)]

https://www.revosax.sachsen.de/vorschrift/1471-Saechsisches-Umweltinformationsgesetz

The act sets out the principles and means for provision of information about environment and nature for the general public and experts.

Act regulating the Administrative Procedure and the Administrative Delivery Right for the Free State of Saxony

Gesetz zur Regelung des Verwaltungsverfahrens- und des Verwaltungszustellungsrechts für den Freistaat Sachsen (SächsVwVfZG)

[Act of 19th May 2010 (SächsGVBl. p. 142), amended by Article 3 of the Act of 12th July 2013 (SächsGVBl. p. 503)]

https://www.revosax.sachsen.de/vorschrift/11377-SaechsVwVfZG

This Act regulates the application of the Administrative Procedure Act (VwVfG, see national regulations above) in the Free State of Saxony.

5. National Laws/Policies of Italy and regional Laws/ Policies of Piedmont

Introduction about GI in the national/regional Law and Policy

In Italy, the legislation is very complex and rich, especially in the fields of landscape, cultural and environmental heritage; nevertheless, Italian legislation does not yet include the concept of Green Infrastructure (GI), particularly in its integrated-strategic aspects. There are, however, various acts at national and regional level, that comprehend regulations and references to the potential individual elements of GI like Natura 2000 sites, ecological networks, protected areas, forests, areas with environmental value etc.

The Italian Constitution assigns the exclusive legislative power to the State in the field of "Protection of the environment and ecosystems", while it transfers specific management competence in various sectors to the Regions and other Local Bodies. Thus, it is obvious that in Italy the main principles of the Convention on Biological Diversity (CBD), of the European Strategy for Biodiversity or of GI as well, can be properly implemented only through cooperation between the State, the Regions in relation to the specific powers conferred on them in the various areas, and through the planning and management of activities dealing with key sectors affecting nature conservation.

So in this section, there are national and regional laws - referring to Piedmont region - while in the part of "Sectoral Planning" there are also supra-regional Plans; there are regional and local plans of Lombardy (bordering with Piedmont) too.

5.1. Green Infrastructure

In Italy, the debate on Green Infrastructure has been intense but it has not yet produced specific regulation or guidelines/directives. In 2013, the thematic session of the Conference of Rome "Nature of Italy" has been devoted to the issues of conservation and enhancement of natural capital and ecosystem services by means of green infrastructure, that is considered a relevant and qualifying factor for a green economy. The final document Green infrastructure, Ecosystems services and the Green Economy was edited in 2014.

http://www.comitatoscientifico.org/temi%20CG/territorio/infrastruttureverdi.htm

In 2017, two important events took place on this topic. The first, in Orvieto, promoted by the National Research Council as part of the COST GreenInUrbs program, promotes the Green Infrastructure Conference - Nature Based Solutions for resilient and sustainable cities: European experiences have been presented, with particular references to the role of urban forests.

http://www.greeninurbs.com/contents/

The second meeting took place in Milan. The Green Infrastructures for 'More Liveable Cities' conference, organised by the Bocconi University and Green City Italia, highlighted the tools for assessing the services produced by ecosystems and the function that these can play in metropolitan areas.

5.2. Protection of Nature, Biodiversity and Landscape

5.2.1. Nature and Biodiversity Protection

National Regulations

Frame Act no. 394 of 6th December 1991 on Protected Areas

Legge n. 394 del 6 dicembre 1991 "Legge quadro sulle aree protette" e s.m.i.

http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:1991-12-06;394!vig

This Act is an organic and detailed tool for the regulation of protected areas, previously fragmented and disarticulated in Italy.

The Frame Act, currently under revision in Italian Parliament, regulates institutional arrangements for planning, realisation and management of National and Regional Parks and Natural reserves.

According with this Act, the Natural Heritage is constituted of physical, geological, geomorphological and biological formations, or groups of them, which have naturalistic or environmental value. Such territories, especially if vulnerable, undergo a special system of protection and management. The Decree of the Ministry of Environment 2/12/1996 "Classificazione delle aree protette" and its modification 119/2008, regulating SPA and SAC (Natura2000), reviewed the classification of protected areas.

The subjects of the management of Protected Areas are the "Comitato per le aree naturali protette" (an administrative committee), the "Consulta tecnica per le aree naturali protette" (a technical consultation), the "Ente Parco" (Park institute) and the "Comunità del Parco" (Park community). The last two take care the Park's government and management. The management tools are: the "Programma triennale per le aree naturali protette" (3 years programme); the "Regolamento del parco" (the regulation of the Park); the "Piano del Parco" (Park Plan); the Nulla osta and the Piano pluriennale economico e sociale (Economical and social pluriannual Plan) for the promotion of compatible activities.

The Act 394/91 also sets quality and security objectives ruling interventions and policies for flora and fauna conservation.

Decree of the President of the Italian Republic of 8th September 1997, no. 357 for the Protection of Habitats, Flora and Fauna

D.P.R. 8 settembre 1997, n. 357 "Regolamento recante attuazione della direttiva 92/43/CEE relativa alla conservazione degli habitat naturali e seminaturali, nonché della flora e della fauna selvatiche"

http://www.gazzettaufficiale.it/eli/id/1997/10/23/097G0390/sg

It is the Decree which transposes the Habitats Directive into Italian Law. It contains 7 annexes, which were modified in 1999 and 2007. The obligations on conservation measures and management plans for Special Areas of Conservation (SAC) are extended to Bird Directive's Special Protection Areas (SPA). It establishes the obligation to open an Environmental Impact Assessment (EIA) procedure for all the planning tools, projects and interventions which can have an impact on Natura 2000 areas.

Decree of 3rd September 2002 "Guidelines on the Management of Natura 2000 Sites"

Decreto 3 settembre 2002 "Linee guida per la gestione dei Siti Natura 2000"

http://www.gazzettaufficiale.it/eli/id/2002/09/24/02A11532/sg

These guidelines present the logical-decisional process to create the Management Plans of Natura 2000 sites, together with all the aspects that should be considered. The guidelines were completed with manuals delivered by the LIFE Project "Verifica della Rete Natura 2000 in Italia: modelli di gestione" of the Ministry

of the Environment.

Ministry Decree of 17th October 2007, no. 184 "Minimum Uniform Criteria for the Definition of Conservation Measures in Natura 2000 Sites"

D.M. 17 ottobre 2007, n. 184 "Criteri minimi uniformi per la definizione di misure di conservazione relative a Zone speciali di conservazione (ZSC) e a Zone di protezione speciale (ZPS)" modificato con il D.M. 22 gennaio 2009.

http://www.gazzettaufficiale.it/eli/id/2007/11/06/07A09363/sg

Conservation measures are to be set by Regions and Autonomous Provinces within 3-6 months after the definition of the Natura 2000 areas.

Decree of the President of the Italian Republic 13th March 1976, no. 448 "Execution of the Convention on wetlands of international importance, signed in Ramsar on 2nd February 1971"

D.P.R. 13 marzo 1976, n. 448 "Esecuzione della convenzione relativa alle zone umide d'importanza internazionale, sopratutto come habitat degli uccelli acquatici, firmata a Ramsar il 2 febbraio 1971". e s.m.i.

http://www.minambiente.it/sites/default/files/archivio/normativa/ramsar/dpr_13_03_1976_448_ramsar.pdf

This Decree gives effect to the Ramsar International Convention, where the great ecological importance of wetlands was recognised.

Act no. 157 of 11th February 1992 "Act for the Protection of Wild Warm-Blooded Fauna and Hunting"

Legge n. 157 dell'11 febbraio 1992 "Norme per la protezione della fauna selvatica omeoterma e per il prelievo venatorio"

http://www.gazzettaufficiale.it/eli/id/1992/02/25/092G0211/sg

This Act gave the first implementation to the Birds Directive requiring the protection of migration routes, to the Paris Convention (1950) and to the Berne Convention (1979).

Legislative Decree no. 230 of 15th December 2017 "Adaptation of National Legislation to the Provisions of Regulation (EU) no. 1143/2014 of the European Parliament and of the Council of 22nd October 2014, containing Provisions aimed at Preventing and Managing the Introduction and Dissemination of Invasive Alien Species"

Decreto Legislativo n. 230 del 15 dicembre 2017 "Adeguamento della normativa nazionale alle disposizioni del regolamento (UE) n. 1143/2014 del Parlamento europeo e del Consiglio del 22 ottobre 2014, recante disposizioni volte a prevenire e gestire l'introduzione e la diffusione delle specie esotiche invasive"

http://www.gazzettaufficiale.it/eli/id/2018/01/30/18G00012/SG

With this Decree Italy has adopted a series of provisions on invasive alien species, both plant and animal, which the EU has introduced on 1st January 2015 to protect its biodiversity and its ecosystem services. It introduces a general ban on trade, possession, transport and introduction in nature, and imposes an obligation for immediate reporting, control or eradication of these species (49 in total). The country must activate a surveillance and monitoring system for invasive alien species and identify the main accidental introduction vectors by adopting at least one action plan to prevent the risk of further introduction. Finally, it also provides for a system of authorisations and exemptions from the prohibitions, in particular cases.

The National Strategy for Biodiversity (2010)

Strategia Nazionale per la Biodiversità (2010)

http://www.minambiente.it/pagina/strategia-nazionale-la-biodiversita

In 2010, the International Year of Biodiversity, Italy, in accordance with the namesake European Strategy, developed for the first time a National Strategy for Biodiversity (NBS). The road to this achievement was long and included the participation of stakeholders (social and economic key players), scientists, the Regions, and the entire government. The process culminated in the National Conference for Biodiversity held in Rome from 20th to 22th May 2010. The result of the work of the Conference represented the starting point for the official discussions within the "Conferenza Permanente per i rapporti fra lo Stato, le Regioni e le Province autonome" (State-Regional Permanent Conference). On 7th October 2010, the process of approval was completed, with a specific agreement made at the meeting of the "Conferenza Permanente Stato –Regioni". The NBS, and its mid-term review, is a very important tool for ensuring integration between the country's development objectives and the protection of its priceless biodiversity heritage for years to come.

In order to achieve the vision, the NBS is structured around three key issues:

- Biodiversity and ecosystem services
- Biodiversity and climate change
- Biodiversity and economic policies

In relation to each of these issues, three strategic objectives have been identified, each complementing the other, stemming from an attentive technical and scientific evaluation which considers the biodiversity conservation and implementation as a priority.

- Strategic objective 1: By 2020, ensure the conservation of biodiversity, or the variety of living organisms, their genetic diversity and the ecological complex of which they are part, and ensure the protection and restoration of ecosystem services in order to guarantee their key role for life on earth and human well-being.
- Strategic objective 2: By 2020, substantially reduce the nationwide impact of climate change on biodiversity, by defining the appropriate measures to adapt to climate changes and mitigate their effects and by increasing the resilience of natural and semi-natural ecosystems and habitats
- Strategic objective 3: By 2020, integrate biodiversity conservation into sectoral and economic policies, also in terms of new employment opportunities and social development, reinforcing the understanding of benefits of ecosystem services that originate from it and the awareness of the cost of losing them.

The implementation of the NBS requires a multidisciplinary approach and a great amount of sharing and collaboration between policy makers and central and regional administrations, with the support of the academic and scientific world, as well as welcoming stakeholders' requests.

It was for this reason that the "Conferenza Stato-Regioni" ("State-Regions Conference") was chosen as the venue for policy discussions and decision making with regard to the Strategy.

The Ministry for Environment established:

- A Special Joint Committee (JC), composed of representatives from Central Administrations, Regions and Autonomous Provinces in order to support the activities of the "Conferenza"
- The National Biodiversity Observatory offers scientific technical support to the Joint Committee
- The Consultation Table, which involves the JC and representatives of main economic/productive and environmental associations, allows for the constant and full involvement of all stakeholders in the process of implementing and review the Strategy.

The NBS will be implemented in the 2011-2020 period. Every two years, a report on the progress of its implementation will be issued. In order to evaluate the efficiency and efficacy of the NBS, a system of

periodic monitoring will be set up, based on a set of indicators. There are two distinct types of indicators: 29 result and impact indicators and 14 status indicators.

Specific Action Plans (national and regional) could be the tools for the implementation of the National Strategy for Biodiversity.

Further Regulations:

Act 503/1981 Ratification and implementation of the Convention on the Conservation of Wildlife and the Natural Environment in Europe, with annexes, adopted in Berne on 19th September 1979

Legge 503/1981 Ratifica ed esecuzione della convenzione relativa alla conservazione della vita selvatica e dell'ambiente naturale in Europa, con allegati, adottata a Berna il 19 settembre 1979

http://www.gazzettaufficiale.it/eli/id/1981/09/11/081U0503/sg

This Act is the implementation, in Italy, of the Berne Convention. The "Convention on the Conservation of Wildlife and the Natural Environment in Europe", signed in Berne on 19th September 1979, aims to ensure the conservation of wild flora and fauna and their natural habitats, in particular species and habitats whose conservation requires the cooperation of several States, and to promote similar cooperation; it requires States that have ratified it, to adopt laws and regulations to protect species of wild flora and fauna, in particular those listed in Annex I which includes a list of "particularly protected species of flora". According to the art. 4 protection also extends to the habitats that host them as well as to other habitats threatened with disappearance. According to the art. 5 it is forbidden to collect, collect, cut or intentionally eradicate the plants in Annex I; the holding or marketing of these species is also prohibited. The "Bern Convention" was ratified by Italy with Act 503/1981.

Act 42/1983 Ratification and implementation of the Convention on the Conservation of Migratory Species of Wild Animals, with annexes, adopted in Bonn on 23rd June 1979

L. 42/1983 Ratifica ed esecuzione della convenzione sulla conservazione delle specie migratorie appartenenti alla fauna selvatica, con allegati, adottata a Bonn il 23 giugno 1979

http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:1983-01-25;42!vig=

This Act ratifies in Italy the "Bonn Convention", an Intergovernmental Agreement, which aims to ensure the conservation of terrestrial, aquatic and aerial migratory species in all their movements over the entire area of distribution, with particular regard to those threatened with extinction (Annex 1) and to those in a bad state of conservation (Annex 2).

Act 403/1999 Ratification and implementation of the Convention for the Protection of the Alps, with annexes and minutes of amendment of 6 April 1993, made in Salzburg on 7th November 1991

Legge 403/1999 Ratifica ed esecuzione della convenzione per la protezione delle Alpi, con allegati e processo verbale di modifica del 6 aprile 1993, fatta a Salisburgo il 7 novembre 1991

http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:1999-10-14;403!vig=

The Convention on the Protection of the Alps, namely "The Alpine Convention", was signed on 7 November 1991 in Salzburg (Austria) by Austria, France, Germany, Italy, Switzerland, Liechtenstein and the EU (Slovenia signed the convention on 29 March 1993 and Monaco became a party on the basis of a separate additional protocol). The Convention entered into force on 6 March 1995.The Alpine Convention is the first convention for the protection of a mountain region worldwide that is binding under international law: for the first time a transnational mountain area has been considered in its geographical continuity, a common territory facing common challenges. This is the "revolution" of the Alpine Convention. The Act 403/1999 ratifies the Convention in Italy.

Regional Regulations

Regional Act of 2nd November 1982, no. 32 "Act for the Conservation of the Natural Heritage and Environmental Arrangement"

L.R. 2 novembre 1982 n. 32, "Norme per la conservazione del patrimonio naturale e dell'assetto ambientale" e s.m.i.

http://arianna.consiglioregionale.piemonte.it/base/coord/c1982032.html

It regards the restoration of river and lake environments, the regulation of the off-road vehicle activities,

the protection of spontaneous flora and particular animal groups such as amphibians, river crayfish (*Astacus astacus* and *Austropotamobius pallipes*) and mussels and regulates the collection of wood products.

Regional Act of 29th June 2009, no. 19 "Unique Text about the Conservation of Natural Areas and Biodiversity"

L.R. 29 giugno 2009, n. 19, "Testo unico sulla tutela delle aree naturali e della biodiversità" e s.m.i.

http://arianna.consiglioregionale.piemonte.it/base/coord/c2009019.html

This Act updates Piedmont's regulation on protected areas. It revokes all the founding laws on regional protected areas and put the stress on the European Natura 2000 Conservation System. The Act calls for the constitution of the Regional Ecological Network, including the System of Piedmont Protected areas, SACs, Sites of Community Importance (SCIs) and SPAs, ecological corridors and connection in the territory, which must be identified at the different scales and for improved knowledge. The Act also reintroduces contiguous areas to the protected areas and regards the Environmental Impact Assessment. (artt. 43, 44 e 45).

Regional Council Decree no. 54-7409 of 7th April 2014 on Conservation Measures for the Natura 2000 Network in Piedmont

D.G.R. n. 54-7409 del 7 aprile 2014 (modificate con D.G.R. n. 22-368 del 29 settembre 2014, D.G.R. n. 17-2814 del 18/01/2016, con D.G.R. n.24-2976 del 29/2/2016) "Misure di conservazione per la tutela della Rete Natura 2000 del Piemonte".

http://www.regione.piemonte.it/parchi/cms/dwd/MdC_testo_coord_9_2014.pdf

This Decree regards the conservation measures for Natura 2000 areas in application of the Ministry Decree 184/2007 "Minimum uniform criteria for the definition of conservation measures in Natura 2000 sites".

5.2.2. Landscape Protection

National Regulations

Legislative Decree of 22nd January 2004, no. 42 et seq., "Code of Cultural Heritage and Landscape, pursuant to Art. 10 of the Act from 6th July 2002, no. 137".

D.Lgs. 22 gennaio 2004, n. 42 e s.m.i., "Codice dei beni culturali e del paesaggio, ai sensi dell'art. 10 della legge 6 luglio 2002, n. 137".

http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2004-01-22;42!vig

The Third Part of the so-called Urbani Code deals with landscape heritage, including, in Article 142 which resumes the previous 431/1985 (so-called "Galasso" law): it classified as natural beauty subject to constraint a whole series of territories identified by block and by morphological categories without the need for any further formal action by the Public Administration (like wooded areas, rivers and streams with its shores for a 150 metre range, lakeside areas, etc.).

Act 14/2006 "Ratification and implementation of the European Landscape Convention, Florence 20th October 2000".

L. 14/2006 "Ratifica ed esecuzione della Convenzione europea sul paesaggio, fatta a Firenze il 20 ottobre 2000".

http://www.gazzettaufficiale.it/eli/id/2006/01/20/006G0018/sg

With the ratification of the European Landscape Convention – signed in Florence on 20th October 2000 - the important public interest role of the landscape in the cultural, ecological, environmental and social fields

was recognised. Italy, as an EU member State, has to integrate landscape into its regional and urban planning policies and in its cultural, environmental, agricultural, social and economic policies, as well as in any other policies with potential direct or indirect impact(s) on landscape.

Regional Regulations

Regional Act of 16th June 2008, no. 14 "Landscape Valorisation Rules".

L.R. del 16 giugno 2008, n. 14 "Norme per la valorizzazione del paesaggio".

http://arianna.consiglioregionale.piemonte.it/base/coord/c2008016.html

The Act intends to preserve the cultural and natural values of the landscape, by promoting and implementing policies aimed to landscape evaluation and regeneration.

Regional Act of 1st December 2008, no. 32 Urgent Measures to Comply with the Legislative Decree of 22nd January 2004, no. 42

L.R. 1 dicembre 2008, n. 32 Provvedimenti urgenti di adeguamento al decreto legislativo 22 gennaio 2004, n. 42

http://arianna.consiglioregionale.piemonte.it/base/coord/c2008032.html

The Act identifies the expertise on landscape permits, which for significant interventions remain in the hands of the Region; the remaining interventions may be authorised by the Communes - or by their associative forms - by the Local Landscape Commissions.

5.3. Environmental Protection

5.3.1. Prevention of harmful Effects on the Environment

National Regulations

Legislative Decree 152/2006 Regulations in Environmental Field. Sixth part: Rules on compensation claims against damage to the environment

Norme in materia ambientale. Parte Sesta: Norme in materia di tutela risarcitoria contro i danni all'ambiente

http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2006-04-03;152!vig

The Legislative Decree 152/2006 and subsequent amendments, also known as the "Environment Code", collects environmental laws in a single corpus of legislation, excluding those on Protected Areas and Rete Natura 2000 Sites, e.g., Soil and Water Protection, Waste Management, Air Pollution, Land Remediation, EIA and SEA, etc. The sixth part of the "Code" contains the rules on environmental damage, its prevention, restoration and compensation.

Legislative Decree 152/2006 Regulations in Environmental Field. Second part: Procedures for Environmental Strategic Assessment (ESA), Environmental Impact Assessment (EIA) and Integrated Environmental Authorization (Integrated Pollution Prevention and Control IPPC)

Norme in materia ambientale. Parte Seconda: Procedure per la valutazione ambientale strategica (VAS), per la valutazione d'impatto ambientale (VIA) e per l'autorizzazione ambientale integrata (IPPC)

http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2006-04-03;152!vig

The second part of the "Environment Code" is about the assessment of the effects of projects and plans/programmes on the environment (EIA and SEA), and the procedure to be followed (the steps). It implements the European Directives: the 2001/42/EC (SEA) and the 2011/92/EU and 2014/52/EU (EIA).

Regional Regulations

Regional Act 40/1988 Provisions concerning environmental compatibility and evaluation procedures

Legge regionale 40/1998 Disposizioni concernenti la compatibilità ambientale e le procedure di valutazione

http://arianna.cr.piemonte.it/iterlegcoordweb/dettaglioLegge.do?urnLegge=urn:nir:regione.piemonte:legge:1998;40@2018-08-29&tornaIndietro=true

This Act is about the assessment of the effects of projects and plans on the environment. It was ahead of its time, because it was concerned with Strategic Environmental Assessment, in the absence of specific legislation at national and European level.

5.3.2. Water Protection

National Regulations

Royal Decree of 11th December 1933, no. 1775 "Unique Text on Law Provisions about Water and Hydropower Plants"

R.D. 11 dicembre 1933, n. 1775, "Testo unico delle disposizioni di legge sulle acque e impianti elettrici"

http://www.minambiente.it/sites/default/files/R.D._11-12-1933_n._1775.pdf

This is the first Italian law regulating hydropower plants and on public water derivations.

Act of 5th January 1994, no. 37 "Regulation for the Environmental Protection of State Property Areas of Rivers, Streams, Lakes and other Public Waters".

L. 5 gennaio 1994, n. 37, "Norme per la tutela ambientale delle aree demaniali dei fiumi, dei torrenti, dei laghi e delle altre acque pubbliche".

http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:1994-01-05;37!vig

This Act established a protection on areas abandoned by rivers and waters like river beds, river banks and so on, as a result of course alteration. These zones, actually, become state property (demanio). The "demanio" is formed by the state and public bodies' properties. The rivers, lakes and the entire water system are part of the so called "demanio idrico".

Decree of the President of the Republic 18th February 1999, no. 238 "Regulation laying down Rules for the Implementation of Certain Provisions of Act 5th January 1994, no. 36, on Water Resources".

D.P.R. 18 febbraio 1999, n. 238, "Regolamento recante norme per l'attuazione di talune disposizioni della legge 5 gennaio 1994, n. 36, in materia di risorse idriche".

http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.del.presidente.della.repubblica:1999-02-18;238!vig

This is a regulation that implements some contents of Act 5th January 1994, no. 36.

Legislative Decree 152/2006 et seq. "Regulations in Environmental Field". Third part.

D.Lgs. 152/2006 e s.m.i. "Norme in materia ambientale" Parte Terza.

http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2006-04-03;152!vig

The "Environment Code" repealed L. 183/1989 and L. 152/1999; Sections II and III are dedicated to water resources, respectively water protection from pollution (qualitative and quantitative protection, objective identification and protection tools such as PTAs and Management Plans) and the management of water resources. Recalling Art. 1 of the 2000/60 EC Directive, D. lgs. 152/2006 pursues the objective of "preventing further deterioration, protecting and improving the status of aquatic ecosystems, terrestrial ecosystems and wetlands directly dependent on water aquatic ecosystems". The Plan for the Hydrogeological order of the Po Basin defines with clarity and determination the hydrographic system as a "network" aimed at protecting the overall biodiversity of river ecosystems. It is in fact an important reference for the design and management of national ecological networks.

Legislative Decree 49/2010 "Implementation of Directive 2007/60/EC on the Assessment and Management of Flood Risks".

D.Lgs. 49/2010 "Attuazione della direttiva 2007/60/CE relativa alla valutazione e alla gestione dei rischi di alluvioni".

http://www.minambiente.it/sites/default/files/dlgs_23_02_2010_49.pdf

The Directive 2007/60/CE or "Floods directive" aims to "establish a framework for the assessment and management of flood risks, aiming at reducing the adverse consequences for human health, the environment, cultural heritage and economic activity associated with floods within the Community."

The Floods Directive has been implemented in the Italian Law with the Legislative Decree 49/2010, taking into account the applicable national legislation, in particular the Legislative Decree 152/2006 (Italian transposition of Directive 2000/60 /EC) and the Prime Minister's Decree DPCM 29th September 1998.

The competence for the preparation of preliminary assessments, the development of hazard and risk maps and the preparation of management plans is entrusted to the Basin Authority district (Autorità di BAcino Distrettuali) pursuant to of Legislative Decree 152/2006, in accordance with the activities of preparation of the Hydrogeological System Plan already carried out.

Regions, in coordination with each other and with the Department of Civil Protection, have the responsibility of preparing the management plans for the river basin district of reference relating to national and regional warning system for flood risk for the purposes of civil protection.

Legislative Decree 150/2012 "Implementation of Directive 2009/128/EC establishing a Framework for Community Action in the Field of Sustainable Use of Pesticides".

D.Lgs. 150/2012 "Attuazione della direttiva 2009/128/CE che istituisce un quadro per l'azione comunitaria ai fini dell'utilizzo sostenibile dei pesticidi".

http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2012-08-14;150!vig

This Decree is the implementation of the Directive 2009/128/CE about sustainable use of pesticides, a key point to protect and evaluate the ecosystems related to agriculture and silviculture.

Regional Regulations

Regulation 18th October 2002, no. 9/R et seq. "Regional Regulatory Regulation: Designation of Vulnerable Zones for Nitrates of Agricultural Origin and Related Action Programme".

Regolamento 9/R 18 ottobre 2002 e s.m.i. "Regolamento regionale recante: Designazione delle zone vulnerabili da nitrati di origine agricola e relativo programma d'azione".

http://arianna.consiglioregionale.piemonte.it/base/regolacoord/R2002009.html

This Regulation provides a first identification of zones vulnerable to nitrates of agricultural origin and

affected or nearly affected territories. It also requires the definition of an Action Programme to be carried out in vulnerable areas and makes it mandatory the application of an Agricultural Best Practice Code (set by the Decree 19th April 1999 of the Italian Agriculture Ministry).

Regional Regulation of 29th July 2003, no. 10/R "Disposal of public water supply concessions - (Regional Act no. 61 of 29th December 2000)", as updated by Regional Regulation no. 1 / R / 2014

Regolamento regionale 29 luglio 2003, n. 10/R "Disciplina dei procedimenti di concessione di derivazione d'acqua pubblica - (Legge regionale 29 dicembre 2000, n. 61)", così come aggiornato con Regolamento regionale n. 1/R/2014

http://arianna.consiglioregionale.piemonte.it/regint/documentExtractorCoord

This Regulation regulates the procedures for the allocation of public water concessions.

5.3.3. Air and Climate Protection

There is no specific rule in Italian legislation that connects directly this matter with green and blue infrastructures. The whole environmental law corpus can be consulted in **http://www.normattiva.it** (national law) and in **http://arianna.consiglioregionale.piemonte.it** (regional law).

5.3.4. Soil Protection

National Regulations

Royal Decree of 30th December 1923, no. 3267 "Reorder and Reform of Regulation about Woodlands and Mountain Lands"

R.D.L. 30.12.1923 n. 3267 "Riordinamento e riforma della legislazione in materia di boschi e di terreni montani"

http://www.minambiente.it/sites/default/files/R.D._30-12-1923_n._3267.pdf

This Royal Decree introduces the hydrogeological constraint. This constraint protects areas that, as a result of operations like, deforestations or soil/ground excavations, could lose stability or alter the water system, and therefore could lead to damage to the public good.

Legislative Decree 152/2006 et seq. "Regulations in Environmental Field". Third part.

D.Lgs. 152/2006 e s.m.i. "Norme in materia ambientale" Parte Terza.

http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2006-04-03;152!vig

The "Environment Code" repealed L. 183/1989 and L. 152/1999. The third part is about soil protection and fight against desertification, water protection from pollution.

There is a national draft law about this topic, currently being discussed in Italian Parliament; "Provisions to limit soil consumption and to reuse of built-up areas"; similarly, at regional level, the Regional Government has approved two related bill on the subject of renovation and recovery of buildings, and containment of land consumption; soon they will be examined by Regional Council.

Regional Regulations

Regional Act 56/1977 et seq "Soil Protection and Land Use" (Land Planning Act).

Legge regionale 56/1977 e smi "Tutela ed uso del suolo" (legge urbanistica).

http://arianna.cr.piemonte.it/iterlegcoordweb/dettaglioLegge.do?urnLegge=urn:nir:regione.piemonte:legge:1977;56@2018-08-29&tornaIndietro=true

The Act, first written in the 1970s, has been modified many times over the years, but maintains its overall structure. It is based on the transversal principle of containment of land consumption (art. 1). The Region and the local bodies carry out their functions for land planning by regulating, with this Act, the protection and limitation of land use, in order to achieve the goal of zero consumption.

Regional Act 45/1989 "New Standards for Interventions to be carried out on Land with Hydrogeological Constraints - Repealing Regional Act 12th August 1981, no. 27"

L.R. 45/1989 "Nuove norme per gli interventi da eseguire in terreni sottoposti a vincolo per scopi idrogeologici - Abrogazione legge regionale 12 agosto 1981, n. 27"

http://arianna.consiglioregionale.piemonte.it/base/coord/c1989045.html

This Act regulates the interventions and activities in areas with hydrogeological constraint; this constraint does not deny the possibility to take direct actions on territory but subordinates the interventions to a permit procedure.

5.4. Economy and Sustainable Development

5.4.1. Agriculture

There is no specific rule in Italian law that connects directly this matter with green and blue infrastructure. The whole environmental law corpus can be consulted in **http://www.normattiva.it** (national law) and in **http://arianna.consiglioregionale.piemonte.it** (regional law).

5.4.2. Forestry

National Regulations

Legislative Decree of 3rd April 2018, no. 34 "Unique text about forests and forest supply chains"

Decreto Legislativo 3 aprile 2018, n. 34 "Testo unico in materia di foreste e filiere forestali.

http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2018-04-03;34!vig=

This Decree repealed the Legislative Decree no. 227/2001; it aims to guarantee the forest protection saving their extension, distribution, ecological and bio-cultural diversity; promoting the active and rational management of the national forest heritage in order to ensure environmental, economic and socio-cultural functions; promoting and protecting the forestry and mountain economy.

Ministry Decree of 16th June 2005 (Ministry of the Environment and the Protection of the Territory and the Sea) "Forestry Planning Guidelines".

D. M. 16 giugno 2005 (Ministero dell'Ambiente e della Tutela del Territorio e del Mare) "Linee Guida di programmazione Forestale.

http://www.agricoltura.regione.campania.it/foreste/PAF/DM_16_2005.pdf

These Planning Guidelines aim to assess the forest conservation status in Italy - related to biodiversity protection - and to indicate address elements and content for regional programmes.

Regional Regulations

Regional Act 10th February 2009, no. 4 and s.m.i. "Forest Management and Economical Promotion".

L.R. 10 febbraio 2009, n. 4 e s.m.i. "Gestione e promozione economica delle foreste".

http://arianna.consiglioregionale.piemonte.it/base/coord/c2009004.html

This Regional Act gives effect to the National Forest Law. It is aimed at promoting the sustainable management and the multifunctional role of forests. The planning consists in three levels: regional, territorial and farm level.

Regulation 20th September 2011, no. 8/R "Forestry Regulation implementing Article 13 of Regional Act 10th February 2009, no. 4 (Forest Management and economical Promotion) ", as amended by Regulations 2/R 2013 and D.P.G.R. 4/R 2015.

Regolamento 20 settembre 2011, n. 8/R "Regolamento forestale di attuazione dell'articolo 13 della legge regionale 10 febbraio 2009, n. 4 (Gestione e promozione economica delle foreste)", così come modificato con Regolamento 2/R 2013 e D.P.G.R. 4/R 2015.

http://www.regione.piemonte.it/foreste/images/files/pian_gest/dwd/nuova_legge/testointegrato2015.pdf

This is the Regulation that implements the regional law about forests, with reference to forestry management and to silvicultural operations.

Further Regulations:

Legislative Decree 10th November 2003, no. 386, "Implementation of Directive 1999/105/EC on the marketing of forest reproductive material".

D.Lgs. 10 novembre 2003, n. 386, "Attuazione della direttiva 1999/105/CE relativa alla commercializzazione dei materiali forestali di moltiplicazione".

http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2003-11-10;386!vig

This Decree regulates the production for market and the marketing of forest reproductive material (seeds, living parts of plants…), listing the plant species to which it refers.

5.4.3. Hunting and Fishing

National Regulations

Act of 11th February 1992, no. 157 et seq., "Rules for the Protection of warm-blood wild fauna and Hunting".

L. 11 febbraio 1992, n. 157 e s.m.i., "Norme per la protezione della fauna selvatica omeoterma e per il prelievo venatorio"

http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:1992-02-11;157!vig

This is the frame Act regulating hunting activity at National Level. Wild fauna is considered a state resource, so no one can freely dispose of it and its protection is in the interests of all citizens, even at a supranational level. The Act introduces generally protected fauna and lists species whose hunting is strictly forbidden and species that are not protected.

Regional Regulations

Regional Act of 4th May 2012, no. 5 - Article 40: repeal of Act no. September 4th, 1996, no. 70, "Rules for the Protection of Wild Warm-Blooded Fauna and Hunting".

L.R. 4 maggio 2012, n. 5 (Legge finanziaria) articolo 40: abrogazione della l.r. 4 settembre 1996, n. 70, "Norme per la protezione della fauna selvatica omeoterma e per il prelievo venatorio".

http://www.regione.piemonte.it/governo/bollettino/abbonati/2012/18/attach/l201205.pdf

Piedmont is the only Italian region in which hunting is not regulated by a specific regional law. In fact, article 40 of the 2012 financial law repealed the previous regional law that regulates the hunting activity in an organic way (Regional Act no. 70 of September 4, 1996). Hunting is therefore regulated by some paragraphs of article 40 of the 2012 budget, by the annual calendar and by various provisions of the regional council.

Regulation 2/R approved with DPGR 24th March 2014 "Regional regulation implementing art. 33 of Regional Act 29th June 2009, no. 19 relating to fauna management within protected areas"

Regolamento 2/R approvato con DPGR 24 marzo 2014 "Regolamento regionale recante attuazione dell'art. 33 della legge regionale 29 giugno 2009, n. 19 relativo alla gestione faunistica all'interno delle aree protette"

http://www.regione.piemonte.it/governo/bollettino/abbonati/2014/13/attach/re201402parchi.pdf

This Regulation identifies the general principles for the management of wildlife within the regional protected areas, providing for regulating the procedures to be adopted in order to ensure compliance with the institutional aims of the regional protected areas and, at the same time, the greatest guarantee for the safety of users, operators in the sector and, more in general, of the whole community.

Regional Act of 29th December 2006, no. 37, "Rules for the management of aquatic fauna, aquatic environments and fisheries regulation".

L.R. 29 dicembre 2006, n. 37, "Norme per la gestione della fauna acquatica, degli ambienti acquatici e regolamentazione della pesca".

http://arianna.consiglioregionale.piemonte.it/base/coord/c2006037.html

This Act regards the management of aquatic fauna, aquatic environments and fisheries regulation in Piedmont.

Decree of the President of the Regional Council of 10th January 2012, no. 1/R "New implementing provisions of Article 9, paragraph 3, of Regional Act 29th December 2006, no. 37 (Rules for the Management of Aquatic Fauna, Aquatic Environments and Fisheries Regulation). Repeal of Regional Regulation 21st April 2008, no. 6/R".

D.P.G.R. 10 gennaio 2012, n. 1/R "Nuove disposizioni attuative dell'articolo 9, comma 3, della legge regionale 29 dicembre 2006, n. 37 (Norme per la gestione della fauna acquatica, degli ambienti acquatici e regolamentazione della pesca). Abrogazione del regolamento regionale 21 aprile 2008, n. 6/R".

http://www.regione.piemonte.it/governo/bollettino/abbonati/2012/02/attach/re201201.pdf

This Act integrates the provisions of the regional Act 37/2006 for management of aquatic fauna.

5.4.4. Tourism and Recreation

There is no specific law in Italian legislation that connects directly this matter with green and blue infrastructure. The whole environmental law corpus can be consulted in **http://www.normattiva.it** (national law) and in **http://arianna.consiglioregionale.piemonte.it** (regional law).

Strategic Tourism Plan 2017-2022.

Piano Strategico del Turismo 2017-2022.

http://www.turismo.beniculturali.it/home-piano-strategico-del-turismo/

The National Strategic Plan of Tourism – elaborated by MIBACT (Ministry of Cultural Heritage and Activities and Tourism) - focuses on sustainability, not only in strictly environmental terms but also with reference to economic development, intermodal and soft mobility, economic and territorial sustainability, use of heritage, creation and innovation of tourism products, use of financial resources, authenticity and identity. It promotes the "sustainable" tourism (cycle paths, paths, mobility in parks and protected areas)

5.4.5. Energy

There is no specific law in Italian legislation that connects directly this matter with green and blue infrastructures. The whole environmental law corpus can be consulted in **http://www.normattiva.it** (national law) and in **http://arianna.consiglioregionale.piemonte.it** (regional law).

5.4.6. Sustainable Development

National Regulations

Act 28th December 2015, no. 221 Environmental Regulations to promote Green Economy Measures and for the Containment of Excessive use of Natural Resources

Legge 28 dicembre 2015, n. 221 Disposizioni in materia ambientale per promuovere misure di green economy e per il contenimento dell'uso eccessivo di risorse naturali

http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2015-12-28;221

http://www.camera.it/leg17/522?tema=collegato_ambientale

This is a large collection of articles about several arguments linked to environmental aspects, approved by the Italian Parliament in December 2015 ("Collegato Ambientale"). Among several arguments, it includes provisions on greenhouse gas emissions and energy production facilities (Chapter III), provisions on soil protection (Chapter VII) and miscellaneous environmental provisions (Chapter XI) Article 67 of Chapter XI establishes the "Comitato Nazionale sul Capitale Naturale", composed of institutional members along with experts appointed by the Italian Minister of Environment, Land and Sea.

The Committee's mandate is to provide arguments for consideration of the Natural Capital within public policy in Italy, working on the edition of Annual Reports on Natural Capital in Italy. Art. 70 of Chapter XI of the same Act provides for the delegation to the Government for the introduction of systems for the remuneration of ecosystem and environmental services, which refers to the need to adopt, within 6 months from the entry into force of the Act, one or more legislative decrees for the introduction of a payment system for ecosystem and environmental services (PSEA). These regulations are still under preparation at the date of finalisation of this document.

5.5. Spatial Planning

5.5.1. Regional and Local Planning

National Regulation

Starting from the **Act 1150/1942 e seq, "Land Planning Act"** (Legge urbanistica, **www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:1942-08-17;1150!vig=2018-12-18**), the Italian urban planning legislation is

characterised by an overlapping of norms that are not always exclusively urban, which modified but did not replace the previous ones, creating a corpus that has never come to constitute a single text.

"Urban Planning", now, after the 2001 Constitutional Reform, "Land Management", is a matter of "Concurrent Legislation" between State and Regions; that is, Regions must observe the fundamental principles derived from state legislation. But in this case a framework law on Land Planning or Land Management doesn't exist, so, every Region approved its legislation.

Regional Regulation

Regional Act 56/1977 et seq "Soil Protection and Land Use" (Land Planning Act)

Legge regionale 56/1977 e smi "Tutela ed uso del suolo" (legge urbanistica)

http://arianna.cr.piemonte.it/iterlegcoordweb/dettaglioLegge.do?urnLegge=urn:nir:regione.piemonte:legge:1977;56@2018-08-29&tornaIndietro=true

This Act identifies the bodies in charge of spatial planning (Region and Local Authorities), the planning tools and their contents.

Piedmont Region must draw up the **Territorial Regional Plan** and the **Regional Landscape Plan**, Province and Metropolitan City the **Coordination Territorial Plan** (see below). The Territorial and Landscape Plans define the parts of the territory to be subjected to particular discipline for the protection and enhancement of the landscape, historical and environmental heritage, of parks and nature reserves and of areas of touristic and landscape interest.

Territorial Plan of the Piedmont Region

Piano Territoriale della Regione Piemonte (PTR)

http://www.regione.piemonte.it/territorio/pianifica/nuovo_ptr.htm

The Regional Territorial Plan, foreseen by Lr. 56/1977 et seq., defines the strategies and objectives at regional level, entrusting their implementation, through moments of verification and comparison, to the bodies operating on a provincial and local scale; establishes the actions to be undertaken by the various planning subjects, in compliance with the principles of subsidiarity and competence, to implement the purposes of the PTR itself.

With DCR no. 122-29783 of 21st July 2011 the Region has approved the new Regional Territorial Plan (PTR). This instrument, necessary for the government of sustainable spatial development, requires the safeguarding of strategic assets that as such should not be altered by transformation and growth processes, and at the same time locates areas destined for activities which are impacting but indispensable for today's society. Regarding the management and protection of environmental heritage, assets identified are not to be considered constraints, but the stimuli for implementing a comprehensive design of transformation, always having the awareness of having to deal with rapidly changing processes.

Regional Landscape Plan

Piano Paesaggistico Regionale (PPR)

http://www.regione.piemonte.it/territorio/pianifica/ppr.htm

The Regional Landscape Plan (PPR), adopted by the Regional Council with D.G.R. 53-11975 on 4th August 2009, is the primary tool for the sustainable development of the entire regional territory on the basis of quality of the landscape and the environment. It is conceptually coherent with the European Landscape Convention and is drawn up in accordance with the Cultural Property Code of the Landscape (Legislative Decree 42/2004 and subsequent amendments). The PPR, which recognises the landscape value of the entire

regional territory, assumes a strategic and integration role between landscape and sectoral policies and contains prevailing provisions on those contained in other sector planning tools. The Regional Landscape Plan has been approved with D.C.R. no. 233-35836/2017 on 3rd October 2017.

Since the date of its approval the local landscape and urbanistic plans must comply with the Plan.

The PPR, which combines and coordinates various approaches (perceptive, historical-cultural, morphological-settling and naturalistic-environmental), identifies the **Regional Ecological Network** - RER, which, with the elements of the historical-cultural and fruitful networks, constitutes the **Landscape Connection Network** (Art. 42 of the implementing rules). RER consists of: Core Areas or Nodes, Ecological Connections, Project Areas (Buffer Areas, Nodes Areas, River Areas, and Environmental Passages) and Environmental Reclamation Areas.

Coordination Territorial Plan of the Province of Torino

Piano Territoriale di Coordinamento della Provincia di Torino (PTCP)

http://www.cittametropolitana.torino.it/cms/territorio-urbanistica/pianificazione-territoriale/ptc2-vigente

http://www.cittametropolitana.torino.it/cms/territorio-urbanistica/sistema-verde/sistema-verde

The Territorial Coordination Plan is the provincial planning tool aimed at the governance of territorial resources through their protection and enhancement.

The PTC2, approved by Regional Council Resolution no. 121-29759 of 21/07/2011, identified, to table no. 3.1, a first hypothesis of the Provincial Ecological Network, a multifunctional network aimed at maintaining, safeguarding, enhancing and enhancing biodiversity. The Provincial Ecological Network is structured as follows (Article 35 of the PTC2 Division):

- *Nodes/Core Areas:* areas with highest naturalness and biodiversity, including habitats of Community interest; they correspond to Protected Areas, SCI and SPA; moreover Sites of Regional and Provincial interest are also considered as core areas.
- *River strips and ecological connection corridors:* they are still the main natural ecosystem of the provincial territory, especially in the plain, and therefore form the main structure of the network of the Provincial Green System, integrated by the smaller hydrographic system. The river strips comprise the areas of the river region whose structure and environmental conditions are determined by the morphological, hydrodynamic and ecological phenomena associated with the hydrological regime of the river (PAI bands A and B and the areas identified by the in-depth studies carried out by the Soil Protection Service of the Province of Torino). The PTC2 identifies other river areas that are geomorphologically, pedologically and ecologically linked to hydraulic dynamics (i.e. C-bands, integrated with additional knowledge derived from provincial studies) as ecological connection corridors.
- *Areas of particular environmental and landscape importance (Buffer Zones)*: These zones include areas subject to environmental constraints under the Code of Cultural Heritage and Landscape, and further areas identified as still possessing characteristics of good naturalness, or areas with ecological connection that do not affect river areas; They are designed to protect network nodes from perturbative effects in the more anthropic sectors.
- *Forested Areas*: The Territorial Plan pursues their protection for their ecological and natural function; in particular the forests of Community interest habitats and multi-species forested woods for their function as "carbon sinks" and for their value in terms of biodiversity, especially in the areas with low coefficients of woodiness (cf. Article 26 of the NdA). The wooded areas identified by PTC2 correspond to official IPLA data - Forestry Plans. Such areas can be recognised by the function of the core area or buffer zones according to the specific characteristics of the tree formations present.
- *Wetlands* (swamps, peat bogs or basins, natural or artificial, permanent or temporary, with standing or flowing water, freshwater and saline waters) as defined by the Ramsar Convention; Represent ecosystems

of fundamental importance for the purpose of resting and reproduction of many species of sedentary and migratory birds, as well as being unique habitats for many species of amphibians, reptile and invertebrates. The PTC2 refers, for their identification, to the Census of Wetlands, which consists of a BD to be verified in detail and implemented.

In implementing the provisions of the PTC2 in the environmental field, with particular reference to the Ecological Network and the Mitigation and Compensation, the Green System Guidelines (LGSV) provided by art. 35 co.4 of the PTC2's NdA were approved by the Provincial Council - with DGP no. 550-23408 / 2014 of 5/08/2014 -. LGSVs are designed with the aim of providing technical and/or procedural guidance for the implementation of PTC2 both to municipal and technical authorities. In particular, they aim to contain soil consumption, increase, qualify and preserve ecosystem services, with particular attention to biodiversity and to promote rational use of natural resources, compatible with the socio-economic development needs of the territory. They are articulated in 3 dossiers, the first 2 of which have been drafted: LGRE Guidelines for the Ecological Network and LGMC Guidelines for mitigations and compensations.

The LGRE dossier, addressed mainly to municipal administrations, provides a first working tool to support all those who are called upon to observe and govern the dynamics of territorial transformation with the primary objective of safeguarding the natural heritage. To this end it contains criteria, methodologies and operational and implementation guidelines for the planning and design of the Ecological Network at the local scale. The approach used (bioecological-approach proposed by ENEA - Italian National Agency for New Technologies, Energy, and Sustainable Economic Development has been affirmed over the last few decades and is affected by conservation patterns gained in US and British experiences and derived from the conjugation of conservation biology knowledge, ecosystems and ecology of the landscape.

The second dossier deals specifically with mitigation and environmental compensation measures of impacts caused by both projects and plans and programmes; it provides indications, for example, on the type and location of areas where compensation measures can be realised.

Coordination Territorial Plan of the Province of Vercelli

Piano Territoriale di Coordinamento della Provincia di Vercelli (PTCP)

http://www.provincia.vercelli.it/index.php?show=detail&ID=894

The Coordination Territorial Plan of the Province of Vercelli (PTCP) was adopted by the Province Council with DCP no. 207 on 28th July 2005 (et seq.). It was elaborated accordingly to the instructions of the Regional Territorial Plan (PTR) and the socio-economic programme of the Region.

It was definitely approved with the act 240-8812 (24th February 2009) and published on the Regional Official Bulletin 10 on 12th March 2009.

The Province of Vercelli conformed the PTCP to the Regional Plan for Protection of Waters (PTA) on 29th November 2013 (Act 138).

The PTCP principally carries out two functions, a purely “territorial” one and another addressing more specifically to environment, landscape and cultural issues.

In its “territorial” component, the Plan is essentially a “direction” plan, with criteria for the localisation of infrastructure networks, services, production plants of regional interest, and criteria to be followed in future municipal or sectorial plans, not compulsory for municipal plans already in force.

In its “protection” component, and therefore solely in matters listed in laws (soil protection, water protection, environment protection, landscape conservation) the PTCP can also prescribe and protect.

The two base strategies elaborated by the plan are:

- A **thematic strategy**, recognising the typical territorial vocation of particular areas and the objectives of transformation and consolidation
- An **implementing strategy**, developing analysis and planning flexible paths to make it possible to

conform the reference planning frame to the territorial dynamics.

Coordination Territorial Plan of the Province of Alessandria

Piano Territoriale di Coordinamento della Provincia di Alessandria (PTP)

http://www.provincia.alessandria.gov.it/index.php?ctl=prodotti&idbl=33&param=33&id=91&fl=singola

The Province of Alessandria adopted a Coordination Territorial Plan on the base of the Regional Act 56/77 and subsequent changes. A first definitive project was adopted by the provincial Council on 3rd May 1999, with updates and changes in 2002, 2004 and 2007.

The PTP sets the following objectives:

- Constituting a reference and directive frame for an effective large scale planning in order to define priorities for transport and roads, research of common strategies for conterminous municipalities, landscape planning support, delivering operative tools for activities and services.
- Providing local land managers a reference frame to read the obligations deriving from national and regional laws
- Detecting different critical levels according to geo-environmental knowledge
- Constituting a benchmark for local and sectorial planning, as defined by the regional and specified by the province

5.5.2. Urban Planning

National Regulations

Act 14th January 2013, no. 10 Standards for the development of urban green spaces (OJ no. 27 of 1st February 2013).

Legge 14 gennaio 2013, n. 10 Norme per lo sviluppo degli spazi verdi urbani (GU n. 27 del 1-2-2013).

http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2013-01-14;10!vig

The Act stipulates that all municipalities with more than 15,000 inhabitants carry out a census of trees in their urban areas. The purpose of the census is the editing of the *Catasto alberi* (Register of trees), which records and classifies all the trees: monumental ones, those on school grounds, in historical gardens, equipped with greenery and included in the roadbeds. In addition, in the above-mentioned municipalities, a new dedicated tree must be planted for each child born or adopted, whose data is communicated to the parents of the child. Administrators at the end of the mandate must produce a "green budget" demonstrating the impact of public administration on the public green (number of trees planted and felled, consistency and status of green areas, etc.).

National Strategy of Urban Green

Strategia nazionale del Verde Urbano

http://www.minambiente.it/sites/default/files/archivio/notizie/strategia_print_def.pdf

In 2018, in Novara, Piedmont, an important event took place: the Conference of presentation of the National Strategy of Urban Green. Act 10/2013 assigns to the Committee for the Development of Public Green the responsibility of proposing a National Plan (than became a Strategy) that establishes criteria and guidelines for

- the realization of permanent green areas around major conurbations and tree-lined rows along the roads;

- the greening of the walls and the paving stones, the creation of gardens and vegetable gardens and the improvement of the settlements (public and private) and of infrastructures.

Regional Regulation

Regional Act 56/1977 et seq "Soil Protection and Land Use" (Land Planning Act)

Legge regionale 56/1977 e smi "Tutela ed uso del suolo" (legge urbanistica)

http://arianna.cr.piemonte.it/iterlegcoordweb/dettaglioLegge.do?urnLegge=urn:nir:regione.piemonte:legge:1977;56@2018-08-29&tornaIndietro=true

This Act identifies the bodies in charge of spatial planning (Region and Local Authorities), the planning tools and their contents. Municipalities must draw up a **Local Urban Plan** (Piano Regolatore Generale Comunale). This Plan constitues the planning tool for the entire municipal territory. Among the aims of the plan there are: the containment of land consumption, the protection of agricultural areas, natural and environmental resources and historical-artistic and landscape heritage. The Plan must ensure an allocation of 12.50 square meters per inhabitant of public green areas (urban parks or game and sport areas), to be increased if the population exceeds 20,000 inhabitants.

5.5.3. Sectoral Planning

Regional Regulations

Hydrogeological Plan of the River Po District (2001)

Piano stralcio per l'Assetto Idrogeologico PAI del bacino del Po – approved by DPCM on 24th August 2001

http://pai.adbpo.it/index.php/documentazione-pai/

The Plan for the Hydrogeological setting of the Po National Basin (PAI), approved by DPCM on 24/08/2001, has as its main objective the reduction of hydrogeological risk to values compatible with existing soil uses, so to assure public safety and minimise damage. The PAI consolidates and unifies the hydrogeological basin planning as it coordinates the determinations made with the previous plan and extraordinary plans.

Management Plan of the Po River Hydrographic District – Water Plan 2015

Piano di Gestione del distretto idrografico del Po (PdGPo), 2015

http://pianoacque.adbpo.it/piano-di-gestione-2015/

The PdGPo is a planning tool provided by d. lgs. 152/2006 and article 65 (cf. Water Directive (2000/60/EC) and constitutes the articulation and part of the District Basin Plan. It aims to reduce pollution, prevent further deterioration and improve the aquatic environment, promote sustainable water use and help mitigate the effects of flooding and drought. It contains a Measure Programme (PoM) for the main basins and sub-basins and it is updated every 6 years.

Regional Water Protection Plan (Piedmont)

Piano di Tutela delle Acque della Regione Piemonte (PTA)

http://www.regione.piemonte.it/ambiente/acqua/pianoTAcque.htm

The PTA (approved with DCR no. 117-10731 on 13/03/2007) is a tool for achieving the quality objectives of water bodies and more generally for the protection of the entire Piedmont ground and surface water system in implementation of Directive 2000/60/ EC, Water Framework Directive.

Regional Forestry Plan 2017-2027 (Piedmont)

Piano Forestale Regionale 2017-2027 Regione Piemonte

http://www.regione.piemonte.it/foreste/it/gestione/pianificazione/2-non-categorizzato/1043-piano-forestale-regionale-2017-2027.html

The Plan, approved with D.G.R. no. 8-4583 from 23th January 2017, is the strategic framework which contains the planning goals and strategies with regard to the forestry sector.

Regional Ecological Network of Lombardy

Rete Ecologica Regionale RER Regione Lombardia

http://www.regione.lombardia.it/wps/portal/istituzionale/HP/DettaglioRedazionale/servizi-e-informazioni/enti-e-operatori/ambiente-ed-energia/parchi-e-aree-protette/biodiversita-e-reti-ecologiche/rete-ecologica-regionale/rete-ecologica-regionale

With deliberation no. 8/10962 of 30th December 2009, the Regional government approved the definitive design of the Regional Ecological Network, adding the Alpine and Prealpine area. Then with BURL no. 26 Special edition of 28th June 2010 paper and digital version of the elaborations have been published.

The Regional Ecological Network is recognised as the priority infrastructure of the Regional Territorial Plan - PTR and serves as a guiding tool for regional and local planning.

The RER, and the criteria for its implementation, provide the Regional Territorial Plan with the framework of the natural principal resource sensitivity and a design of the supporting ecosystem elements for the assessment of strengths, weaknesses, opportunities and threats in the regional territory. It helps the P.T.R. to perform a "directive" function for the P.T.C.P. Provincial and the municipal P.G.T./P.R.G. (Government Plan of the Territory/General Regulatory Plan). It also helps the P.T.R. to coordinate with regional sector plans and programmes and to identify priority sensitivities and set specific targets so that they can take into account the needs of eco-balancing; even with regard to the Regional Sector Plans. It can provide an orientation framework of naturalistic and eco-systemic nature, and opportunities for identifying compatible action plans. It provides the responsible offices for the allocation of contributions for agri-environmental measures and provides indications of spatial priorities for a comprehensive improvement of the system.

The "RER - Regional Ecological Network" documents illustrate the structure of the Network and its components, referring to the scale of 1: 25,000, the scale to which the regional territory is subdivided.

The document "Regional ecological network and territorial planning of local authorities" provides indispensable indications for the composition and concrete safeguarding of the Network as part of the planning and programming activities.

For cartography, it is possible to consult the biodiversity geographic viewer of the SIBIO project (Biodiversity Information System).

Currently Lombardy Region continues to work on the Ecological Network under Action A5 of the Life IP GESTIRE 2020 project.

5.5.4. Access to Information on the Environment and Public Participation

National Regulations

Legislative Decree 19th August 2005, no.195, "Implementation of Directive 2003/4/EC on public access to environmental information"

D. lgs. 195/2005 "Attuazione della direttiva 2003/4/CE sull'accesso del pubblico all'informazione ambientale"

http://www.gazzettaufficiale.it/eli/id/2005/10/13/05A09687/sg

In general, the right of access to the information contained in a document available at a Public

Administration is regulated by art. 22 and ss. of Act 241/1990, which expressly recognize this right not to all citizens, but only to those who hold a concrete and current interest in consulting the document itself. The right of access in environmental matters is instead regulated by this Legislative Decree, which has implemented the European Directive 2003/4/EC on public access to environmental information by repealing the previous legislation. Recently (23rd December 2016) came into force the Freedom of Information Act (FOIA) – Legislative Decree 97/2016. The main consequence is that now all citizens can freely access the documents of the Public Administration, regardless of a specific motivation to support their request.

Legislative Decree 152/2006 Regulations in Environmental Field. Second part: Procedures for Environmental Strategic Assessment (ESA), Environmental Impact Assessment (EIA) and Integrated Environmental Authorization (Integrated Pollution Prevention and Control IPPC)

D.Lgs. 152/2006 e s.m.i. "Norme in materia ambientale" Parte Seconda: Procedure per la valutazione ambientale strategica (VAS), per la valutazione d'impatto ambientale (VIA) e per l'autorizzazione ambientale integrata (IPPC).

http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:2006-04-03;152!vig

At national level the second part of the "Environment Code" that implements the European Directives 2001/42/EC (SEA) and 2011/92/EU and 2014/52/EU (EIA), establishes that the proposal of every new plan or program, included territorial and urban plans, must be published to allow the public concerned to verify it and to formulate opinions or comments before its approval.

Regional Regulations

Regional Act 56/1977 et seq "Soil Protection and Land Use" (Land Planning Act)

Legge regionale 56/1977 e smi "Tutela ed uso del suolo" (legge urbanistica)

http://arianna.cr.piemonte.it/iterlegcoordweb/dettaglioLegge.do?urnLegge=urn:nir:regione.piemonte:legge:1977;56@2018-08-30&tornaIndietro=true

This Regional Act includes, among its aims, the democratic participation in the decision-making and management process of urban and extra-urban land use. During the drafting, approval and management processes of all new plans, administrations must provide a free access to documents in favor of all citizens and explicitly consult the subjects directly concerned in order to receive their opinions and observations on the proposals made.

6. National Laws/Policies of Poland

Introduction about GI in the national/regional Law and Policy

Generally, it should be stated that Polish legislation does not include the concept of Green Infrastructure (GI), particularly in its integrated-strategic aspect. However, many acts include regulations and references to the individual elements of GI.

The fragmentation of provisions in various legal acts and the lack of the definition of Green Infrastructure undoubtedly hinders its protection, but it can not be said that the GI is absent in Polish legislation because its individual elements are protected under a number of other laws and strategic documents. For example, the National Spatial Development Concept 2030 - indicates that "the policy of spatial management of the country must be directed to preventing fragmentation of habitats and creating solutions that allow to achieve the best possible spatial ecological connections favoring migration and ensuring the living needs of protected species." GI elements they are also protected under other provisions of specific laws and decrees, often industry-specific, such as Hunting Law, which, in the context of caring for wild animals, draws attention to ecological corridors and recommends the preservation of coppices and tree stands. There are also a number of laws that seemingly do not have much in common with GI (as, for example, regarding air and soil protection), however, they refer to the quality of the environment and in this way also affect the issue of GI.

Below are selected legal acts that indirectly refer to Green Infrastructure and, although this concept is not explicitly defined in them.

6.1. Green Infrastructure

The Programme of Conservation and Sustainable Use of Biodiversity along with the Action Plan for the Period 2015-2020.

Program ochrony i zrównoważonego użytkowania różnorodności biologicznej wraz z Planem działań na lata 2015-2020

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WMP20150001207

This programme was adopted and approved by the Council of Ministers on 6th November 2015. It is a response to Art. 6 of the Convention on Biological Diversity, which declares that the States – parties to the Convention shall, in accordance with their specific conditions and capabilities, develop national strategies, plans or programmes concerning the conservation and sustainable use of biological diversity. The Action Plan for 2015-2020 contains a list of tasks necessary for the achievement of objectives assumed in the programme, along with identifying institutions responsible for carrying out these tasks, descriptions of the tasks and indicators of task implementation.

Particularly, the above-mentioned document includes the following issues:

- recognition and monitoring of the condition of biological diversity,
- elimination of the causes resulting in the loss of biological diversity and improvement of the condition of its protection on the intra-species (genetic), inter-species (protection of species) and ecosystem level,
- inclusion of the biological diversity into the policies of other sectors, including in particular the agriculture, forestry and water management sectors,
- reduction of the direct pressure on biological diversity and promotion of its durable and sustainable use,

- enhancement of the scientific basis, building of potential and enhancement of ecological awareness,
- effective management in the scope of resources of the natural environment.

It is the first document that includes the term Green Infrastructure. It is defined as a tool allowing for maintaining and strengthening of existing ecosystems and their services. Development of the concept of green infrastructure and its integration with spatial planning will allow the parties to strengthen the environmental protection system in the country and to rationally manage the space ensuring social and economic development.

6.2. Protection of Nature, Biodiversity and Landscape

6.2.1. Nature and Biodiversity Protection

Act of 16th April 2004 on Nature Protection

Ustawa z dnia 16 kwietnia 2004 r. o ochronie przyrody

[Journal of Laws of 2004 No. 92, item 880, consolidated text of 22nd September 2017]

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20180001614

This act determines the objectives, principles and forms of protection of animate and inanimate nature and landscape, consisting of the preservation, sustainable use and renewal of natural resources and nature components. It has essential significance for the functioning of the most important GI components, such as plants, animals, natural habitats, creations of animate and inanimate nature, landscape, green areas in cities and villages, woodlands and the functioning of the entire system of protected areas in Poland (consisting of, among others, national parks, nature reserves, landscape parks, protected landscape areas, Natura 2000 areas, nature monuments, ecologically valuable lands and landscape-nature complexes).

This Act also includes definitions of the concepts, which are used to indicate the detailed regulations contained in it, concerning the aforementioned elements of the environment, and to implement them in practice. From the point of view of the GI concept, the most important of them concern, amongst others:

- the concept of integrity of Natura 2000 area – understood as the coherence of structural and functional factors conditioning the sustainable survival of populations of species and natural habitats, for the protection of which the area was designed or designated,
- the concept of a green corridor – understood as an area allowing for movement of plants, animals and fungi,
- the concept of natural environment – understood as the landscape along with inanimate nature, as well as natural and transformed natural habitats with plants, animals and fungi occurring on them,
- the concept of green areas – understood as the developed areas along with technical infrastructure and buildings functionally associated with them, covered with vegetation.

In its extensive content, the Act covers regulations for issues directly associated with the functioning of selected GI elements, among others for such issues as: forms of environmental protection, botanical and zoological gardens, protection of green areas and woodlands, management of natural resources and components.

Regulation of 9th October 2014 on the protection of plants

ROZPORZĄDZENIE MINISTRA ŚRODOWISKA z dnia 9 października 2014 r. w sprawie ochrony gatunkowej roślin

http://dziennikustaw.gov.pl/du/2014/1409/1

The Decree defines plant species covered by strict protection (including those requiring active protection), partial protection, including species that can be obtained and the methods of obtaining them, as well as species that need to have established protection zones for their positions. Species specific to individual species or groups of species, prohibitions and deviations from prohibitions and methods of species protection, including the size of protection zones.

Decree of 16th December, 2016 on the protection of animals

ROZPORZĄDZENIE MINISTRA ŚRODOWISKA z dnia 16 grudnia 2016 r. w sprawie ochrony gatunkowej zwierząt

http://dziennikustaw.gov.pl/DU/2014/1348/1

The Decree specifies species of animals under strict protection, partial protection, including species that can be obtained and ways to obtain them, as well as species that need to establish protection zones for their refuge or sites. Species specific to individual species or groups of species, prohibitions and deviations from prohibitions and methods of species protection, including the size of protection zones.

DECREE OF THE MINISTER OF THE ENVIRONMENT of 9th October, 2014 on the protection of species of fungi

ROZPORZĄDZENIE MINISTRA ŚRODOWISKA z dnia 9 października 2014 r. w sprawie ochrony gatunkowej grzybów

http://dziennikustaw.gov.pl/du/2014/1408/1

The Decree specifies species of fungi under strict protection, partial protection, including species that can be obtained and ways to obtain them, as well as species that need to establish protection zones for their refuge or sites. Species specific to individual species or groups of species, prohibitions and deviations from prohibitions and methods of species protection, including the size of protection zones.

Decree of the Minister of Environment of 12th May 2005 on the preparation of a draft protection plan for the protection of national parks, a nature reserves and nature parks, making changes in this plan and conserving resources, and creations of nature

ROZPORZĄDZENIE MINISTRA ŚRODOWISKA z dnia 12 maja 2005 r.w sprawie sporządzania projektu planu ochrony dla parku narodowego, rezerwatu przyrody i parku krajobrazowego, dokonywania zmian w tym planie oraz ochrony zasobów, tworów i składników przyrody

http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WDU20050940794/O/D20050794.pdf

The Decree speaks of the procedure of preparation and scope of work for the needs of preparing a draft protection plan for national parks, reserves and landscape parks. It also describes the mode of making changes to the protection plan as well as the scope and methods of conservation of resources, creations and elements of nature.

Decree of 30th March 2005 on the kinds, types and subtypes of nature reserves

ROZPORZĄDZENIE MINISTRA ŚRODOWISKA z dnia 30 marca 2005 r. w sprawie rodzajów, typów i podtypów rezerwatów przyrody

http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WDU20050600533/O/D20050533.pdf

The Decree concerns types of nature reserves which are one of the high level protection areas in Poland.

Decree of 13th April, 2010 on natural habitats and species of Community interest, as well as criteria for selection of areas eligible for recognition or designation as Natura 2000 sites

Rozporządzenie Ministra Środowiska z dnia 13 kwietnia 2010 r. w sprawie siedlisk przyrodniczych oraz gatunków będących przedmiotem zainteresowania Wspólnoty, a także kryteriów wyboru obszarów kwalifikujących się do uznania lub wyznaczenia jako obszary Natura 2000

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20140001713

The Decree identifies the natural habitat types and species of Community interest, including priority natural habitats and species requiring protection in the form of the designation of Natura 2000 sites, as well as the criteria for the selection of areas eligible for recognition as sites of Community importance and designation as special areas of conservation of habitats and areas eligible for designation as special areas of conservation for birds.

Decree of 30th March 2010 on the preparation of a draft protection plan for the Natura 2000 areas

ROZPORZĄDZENIE MINISTRA ŚRODOWISKA z dnia 30 marca 2010 r. w sprawie sporządzania projektu planu ochrony dla obszaru Natura 2000

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20100640401

The Decree defines for the Natura 2000 area: the procedure for drawing up the plan of protective tasks, the scope of work necessary to prepare the project plan of protective tasks, the mode of making changes to the plan of protective tasks.

Decree of 12th January, 2011 on Special Protection Areas for birds

ROZPORZĄDZENIE MINISTRA ŚRODOWISKA z dnia 12 stycznia 2011 r. w sprawie obszarów specjalnej ochrony ptaków

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20110250133

The Decree specifies the name and administrative location of Special Protection Areas for birds and a map of the area and the purpose and subject of protection.

Project of ecological corridors merging Natura 2000 sites in Poland

Projekt korytarzy ekologicznych łączących Europejską Sieć Natura 2000 w Polsce

https://www.mos.gov.pl/fileadmin/user_upload/mos/fundusze_srodowiskowe/POIiS/Ogloszenia_POIiS/Aktualnosci/2016-09-21_Korytarze_ekologiczne/projekt_korytarzy_ekologicznych.pdf

This is not a legal act. This is a study that was created in 2005 at the request of the Ministry of the Environment. The proposed ecological corridors network should be treated as a significant supplement or extension of the National System of Protected Areas in Poland, ensuring its coherence and protection of biodiversity. The authors recommend that its further refinement and complement should be made at the level of each province and municipalities.

Decree of 9th September 2011 on the list of non-native species of plants and animals, which in the case of release into the environment can threaten native species or natural habitats

Rozporządzenie Ministra Środowiska z dnia 9 września 2011 r. w sprawie listy roślin i zwierząt gatunków obcych, które w przypadku uwolnienia do środowiska przyrodniczego mogą zagrozić gatunkom rodzimym lub siedliskom przyrodniczym

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20112101260

This Decree provides a list of species with Polish and Scientific names.

6.2.2. Landscape Protection

Act of 23th July 2003 on the Protection of Monuments and the Guardianship of Monuments

USTAWA z dnia 23 lipca 2003 r. o ochronie zabytków i opiece nad zabytkami

[Journal of Laws No. 162, item 1568, consolidated text of 10th September 2014]

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20180002067

This Act determines the subject, scope and forms of the protection of monuments and their guardianship and defines some of the elements that may be included in the GI system. These definitions indicate the following, among others:

- the concept of historic urban or rural layout – understood as the spatial urban or rural assumption that includes construction complexes, individual buildings and forms of designed green areas, arranged in a system of historical functional and ownership divisions;
- the concept of cultural landscape – understood as the space perceived by people that contains natural elements and creations of civilisation, historically shaped by natural factors and human activities.

The Act covers regulations for issues that may be related to the functioning of selected GI elements only in an indirect manner, such as: forms and methods of the protection of monuments, development of monuments, conducting research and works, national programme of the protection of monuments, and the guardianship of monuments.

Act of 24th April, 2015 on the Amendment of some Acts in Connection with the Strengthening of Landscape Protection Tools

USTAWA z dnia 24 kwietnia 2015 r. o zmianie niektórych ustaw w związku ze wzmocnieniem narzędzi ochrony krajobrazu

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20150000774

The Act changes a number of other legal acts, providing tools for more effective landscape protection. The landscape Act refers to the two spheres: At the voivodeship regional council level, strictly concerns the landscape (obligation to prepare the landscape audits). At the community level concerns an advertising in landscape.

Ratification of Landscape Convention

Ratyfikacja Konwencji Krajobrazowej

http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WDU20060140098/O/D20060098.pdf

A multilateral agreement adopted under the Council of Europe on 20th October 2000 in Florence, ratified by Poland in 2004. Each party will take actions for:

- legal recognition of landscapes as an essential component of people's surroundings, as an expression of the cultural and natural diversity they share and the basis of their identity,
- establishing and implementing landscape policies aimed at protecting, managing and planning landscapes,
- establishing procedures for the participation of the general public, local and regional authorities and other stakeholders interested in defining and implementing landscape policy,
- integrating the landscape with its own regional and urban planning policy and its own cultural,

environmental, agricultural, social and economic policies, as well as with any other policy that directly or indirectly affects the landscape.

The main objective of the Convention is to promote landscape activities, protect it, manage and plan, and organise European cooperation in this area.

The Convention is related to Polish national policies regarding spatial development and ecological policy.

6.3. Environmental Protection

6.3.1. Prevention of harmful Effects on the Environment

Act of 27th April 2001 - Environmental Protection Act

USTAWA z dnia 27 kwietnia 2001 r. Prawo ochrony środowiska

[Journal of Laws of 2001 No. 627, as amended, consolidated text of 13th October 2017]

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20190001396

https://esdac.jrc.ec.europa.eu/Library/Themes/Contamination/workshop_Nov2003/legislation/PolandEnvironmentalProtectionAct.pdf

This Act determines the principles of environmental protection and conditions for using its resources, taking into account the requirements of sustainable development, and it has essential significance for the function of the most important components of GI. It provides the definitions of important concepts, which are subsequently used to indicate the detailed regulations of the Act and to implement them in practice. Amongst others the following should be mentioned:

- the concept of sustainable development – understood as such socio-economic development that includes the occurrence of the process of integrating political, economic and social activities, while maintaining the equilibrium of nature and sustainability of basic natural processes,
- the concept of environment – understood as the entirety of natural elements, including those transformed as a result of human activity, and in particular the surface of the earth, minerals, waters, air, landscape, climate and other elements of biological diversity, as well as mutual interactions between these elements,
- the concept of equilibrium of nature – understood as the state in which there's an equilibrium in the specific area in the scope of mutual interactions of man, components of animate nature and the arrangement of habitat conditions, and wastewater.

In its very extensive content, the Act covers regulations for issues directly associated with the functioning of selected GI elements, for example for such issues as: environmental protection policy, environmental protection programmes, information about the environment, environmental protection in spatial development and during implementation of investments/development, ecological education, protection of environmental resources such as air, water, the surface of the earth, minerals, animals and plants against noise and electromagnetic fields, limitations associated with the protection of environmental resources and counteracting pollution.

Act of 13th April 2007 on the prevention and remedying of environmental damage

USTAWA z dnia 13 kwietnia 2007 r. o zapobieganiu szkodom w środowisku i ich naprawie

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20180000954

The Damage Act introduced to the Polish legal system innovative solutions in the field of liability for damages

or the possibility of damage to the environment, although the very concept of using legal responsibilities in environmental protection was not new. The adoption of a new legal act initiated scientific disputes, inter alia, regarding the nature of legal liability, which is regulated in this Act. The dispute boiled down to whether the liability regulated in the damage Act is an administrative liability or a civil liability.

The environmental protection authority is the environmental protection body responsible for matters of liability for preventing damage to the environment and for repairing damage to the environment.

If the damage occurred in the area of the national park and its buffer zone, the environmental protection authority issues a decision after consulting the director of the national park. It concerns the scope of the conditions for performing corrective actions.

Act of 9th October 2015 on Revitalisation

USTAWA z dnia 9 października 2015 r. o rewitalizacji

[Journal of Laws of 2015, item 1777, consolidated text of 22nd September 2017]

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20180001398

This Act determines the principles and procedure of preparation, conduct and assessment of revitalisation, treated as the process of bringing the degraded areas out of the crisis state, to be conducted in a comprehensive manner integrating actions for the benefit of the local community, environment and economy. Due to the fact that some areas forming GI can be subjected to this process in order to stop negative social phenomena, as well as economic, environmental, spatial-functional and technical phenomena occurring in them, this act has essential significance for the improvement of quality and strengthening of the GI elements.

The Act covers regulations for issues directly associated with the functioning of selected GI elements such as social participation, degraded areas and revitalisation areas, municipality revitalisation programme, and special revitalisation zones amongst others.

Further Regulations:

Decree of 1st September 2016 on criteria for the assessment of damage to the environment

ROZPORZĄDZENIE MINISTRA ŚRODOWISKA z dnia 1 września 2016 r. w sprawie kryteriów oceny wystąpienia szkody w środowisku

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20190001383

The Decree defines the criteria for assessing the occurrence of environmental damage:

1) in species of protected or protected natural habitats;

2) in waters;

3) in the surface of the earth.

Environmental damage may affect:

1. destruction of a protected species habitat in whole or in part;

2) deterioration of the status or function of the protected species population, consisting, among other things, in limiting the possibility of contact between the protected species population and neighbouring populations;

3) destroying the protected natural habitat in whole or in part;

4) deterioration of the status or function of a protected natural habitat;

5) deterioration of the conservation status of species typical for a protected natural habitat.

Decree of 1st September 2016 on corrective actions

ROZPORZĄDZENIE MINISTRA ŚRODOWISKA z dnia 1 września 2016 r. w sprawie działań naprawczych

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20160001396

The Decree specifies the types of remedial actions (basic, supplementary and compensatory) as well as the conditions and ways of conducting them for damage to the environment in protected species, protected natural habitats or waters.

Act of 27th April 2001 Environmental Protection Act, Part V Noise Protection

USTAWA z dnia 27 kwietnia 2001 r. Prawo ochrony środowiska, Dział V Ochrona przed hałasem

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20190001396

The Act requires the creation of local noise protection programs at the voivodship level.

6.3.2. Water Protection

Act of 20th July 2017 – Water Act

USTAWA z dnia 20 lipca 2017 r. Prawo wodne

[Journal of Laws of 23th August 2017, item 1566]

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20180002268

This Act regulates the water management in accordance with the principle of sustainable development, particularly the shaping and protection of water resources, use of waters and management of water resources. These resources constitute some of the more important GI components. This Act also includes definitions of the concepts, which are used to indicate the detailed regulations contained within it, concerning the aforementioned elements of the environment, and to implement them in practice. From the point of view of the GI concept, the most important of them concern, among others:

- the concept of natural watercourses – understood as the rivers, tributaries, streams, brooks, creeks and other waters flowing in a continuous or periodic manner in natural or regulated channels,
- the concept of lands covered with water – understood as the lands forming the beds and shores of natural watercourses, lakes and other natural water reservoirs within boundaries of the shoreline,
- the concept of ecological potential – understood as the determined quality of structure and functioning of the aquatic ecosystem.

In its extensive content, the Act covers regulations for issues directly associated with the functioning of selected GI elements such as: waters and uniform parts of waters, use of waters and water services, protection of waters, treatment of municipal waste water, protection of marine waters, flood risk management, and irrigation and drainage systems.

6.3.3. Air and Climate Protection

Act of 27th April 2001 Environmental Protection Act, Part II Air protection

USTAWA z dnia 27 kwietnia 2001 r. Prawo ochrony środowiska, Dział II Ochrona powietrza

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20190001396

https://esdac.jrc.ec.europa.eu/Library/Themes/Contamination/workshop_Nov2003/legislation/PolandEnvironmentalProtectionAct.pdf

Part II of Environmental Protection Act indicates specific instruments with which air protection is implemented, such as defining air quality standards, reducing emissions, ways of assessing air quality, state environmental monitoring etc.

Act of 17th July 2009 on the System to Manage the Emissions of Greenhouse Gases and Other Substances

USTAWA z dnia 17 lipca 2009 r. o systemie zarządzania emisjami gazów cieplarnianych i innych substancji

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20190001447

The Act defines the rules for managing emissions of greenhouse gases and other substances. The annex to the Act is a list of greenhouse gases and other substances introduced into the air, covered by the emission management system.

Act of 25th August 2006 on the fuel quality monitoring and control system

USTAWA z dnia 25 sierpnia 2006 r. o systemie monitorowania i kontrolowania jakości paliw

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20190000660

The Act defines the rules of organization and operation of the system of monitoring and controlling the quality of fuels in order to reduce the negative effects of fuels on the environment and human health. It also sets the principle of controlling the quality of solid fuels.

Decree of 24th August 2012 on the levels of certain substances in the air

ROZPORZĄDZENIE MINISTRA ŚRODOWISKA z dnia 24 sierpnia 2012 r. w sprawie poziomów niektórych substancji w powietrzu

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20120001031

The Decree defines acceptable and target levels for certain substances in the air, varied for the protection of human health and plant protection.

Decree of 14th June 2019 on air protection programs and short-term action plans

ROZPORZĄDZENIE MINISTRA ŚRODOWISKA z dnia 14 czerwca 2019 r. w sprawie programów ochrony powietrza oraz planów działań krótkoterminowych

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20190001159

Another executive act to the Environmental Protection Act. The Decree sets out specific requirements for air protection programs and short-term action plans.

The National Programme for air protection to 2020 (with the prospect of 2030)

Krajowy program ochrony powietrza do roku 2020,z perspektywą do 2030

https://bip.mos.gov.pl/fileadmin/user_upload/bip/strategie_plany_programy/krajowy_program_ochrony_powietrza.pdf

This is not a legal act. The goal of the National Air Protection Program is to improve air quality in Poland. The program has a time frame for the implementation of activities: short-term - until 2018, medium-term - by 2020 and long-term - by 2030. As part of short-term activities, priority actions for immediate implementation have been set.

Polish National Strategy for Adaptation to Climate Change (NAS 2020) with the perspective by 2030

Strategiczny plan adaptacji dla sektorów i obszarów wrażliwych na zmiany klimatu do roku 2020 z perspektywą do roku 2030

https://bip.mos.gov.pl/fileadmin/user_upload/bip/strategie_plany_programy/Strategiczny_plan_adaptacji_2020.pdf

This is not a legal act. The document was prepared in order to avoid costs and reduce risks associated with climate change. The Strategy is to ensure the conditions for stable socio-economic development in the face of climate change, but also assumes the use of positive impact, which adaptation activities may have not only on the condition of the Polish environment, but also economic growth.

6.3.4. Soil Protection

Act of 27th April 2001 Environmental Protection Act, Title II Part IV Land surface protection

USTAWA z dnia 27 kwietnia 2001 r. Prawo ochrony środowiska, Dział IV Ochrona powierzchni ziemi

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20190001396

https://esdac.jrc.ec.europa.eu/Library/Themes/Contamination/workshop_Nov2003/legislation/PolandEnvironmentalProtectionAct.pdf

The act defines the principles of protection of the earth's surface and concerns mainly rational land management, preservation of the environmental functions of the soil, prevention of soil contamination and its erosion.

Decree of 1st September 2016 on the method for assessment of land surface contamination

ROZPORZĄDZENIE MINISTRA ŚRODOWISKA z dnia 1 września 2016 r. w sprawie sposobu prowadzenia oceny zanieczyszczenia powierzchni ziemi

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20160001395

An executive act to the Environmental Protection Act - sets out detailed requirements for the assessment of soil, ground or groundwater contamination.

Act of 3rd February, 1995 on Protection of Agricultural and Forest Lands

USTAWA z dnia 3 lutego 1995 r. o ochronie gruntów rolnych i leśnych

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20170001161

The Act regulates the principles of protection of agricultural and forest land as well as reclamation and improvement of land use value.

6.4. Economy and Sustainable Development

6.4.1. Agriculture

Act of 3rd February, 1995 on Protection of Agricultural and Forest Lands

USTAWA z dnia 3 lutego 1995 r. o ochronie gruntów rolnych i leśnych

[Journal of Laws of 1995 No. 16, item 78]

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20170001161

This Act regulates the principles of protection of agricultural and forest land, as well as re-cultivation and the improvement of the usable value of the land.

From the point of view of GI, it is important that the definition of agricultural land, which is covered by the Act, also includes the following lands:

- fish ponds and other water reservoirs used only for the needs of agriculture,
- rural parks and field woodlands and bushes, including windbreaks and anti-erosion devices,
- family allotment gardens and botanical gardens,
- peat bogs and waterholes (natural mid-field and mid-forest water reservoirs up to 1 ha).

According to art. 3 of the act, the protection of these lands at minimum consists of:

- limitation of their allocation for non-agricultural or non-forest purposes,
- preservation of peat bogs and waterholes as natural water reservoirs,
- limitation of changes in the natural shaping of the surface of the earth.

The above limitations rely on the fact that allocation of lands for non-agricultural or non-forest purposes is made after a decision of the Poviat Starost (head of administrative district, district governor) regarding such exclusion, and it's necessary to pay receivables, annual fees or one-off compensations in the case of premature logging. Forest and agricultural lands of the highest quality classes (i.e. I - III) are subject to special protection and the consent of the appropriate minister is required for their allocation to non-agricultural or non-forest purposes.

The shortcomings of this act seem to be a large number of exceptions and deviations from the general principles of protection of agricultural and forest land (e.g. Article 12a exempts certain lands allocated for the purposes of residential construction from the obligation to pay receivables (one-time payment for permanent exclusion of land from production) and fees). Also, the lands of lower classes (i.e. classes IV, IVa, IVb, V and VI generated from organic soils) are not subject to protection, and in the case of such lands, the application for exclusion of agricultural land from production is "binding" and the decision is "declarative." (Art. 11, section 1b.)

Strategy for sustainable rural development, agriculture and fisheries by 2020

Strategię zrównoważonego rozwoju wsi, rolnictwa i rybactwa" na lata 2012-2020

http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WMP20120000839/O/M20120839.pdf

The main goal of the strategy is to improve the quality of life in rural areas and to effectively use their resources and potentials, including agriculture and fisheries, for the sustainable development of the country. The strategy has set the following specific objectives:

Objective 1. Increase in the quality of human, social, employment and entrepreneurship in rural areas.

Objective 2. Improvement of living conditions in rural areas and improvement of their spatial accessibility.

Objective 3. Food security.

Objective 4. Increase in productivity and competitiveness of the agri-food sector.

Objective 5. Environmental protection and adaptation to climate change in rural areas.

6.4.2. Forestry

Act of 28th September 1991 on forest

USTAWA z dnia 28 września 1991 r. o lasach

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20180002129

The Act defines the principles of conservation, protection and enhancement of forest resources as well as the principles of forest management in connection with other elements of the environment and the national economy. It is directed at State Forests.

Act of 3rd February, 1995 on Protection of Agricultural and Forest Lands

USTAWA z dnia 3 lutego 1995 r. o ochronie gruntów rolnych i leśnych

[Journal of Laws of 1995 No. 16, item 78]

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20170001161

for details see 6.4.1

6.4.3. Hunting and Fishing

Act of 13th October 1995 Act on hunting

USTAWA z dnia 13 października 1995 r. Prawo łowieckie

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20180002033

The Act defines hunting as an element of protection of the natural environment and requires protection of animals and management of their resources in accordance with the principles of ecology and the principles of rational farming, forestry and fishing. For green infrastructure, Article 11 is particularly important:

1. Hunting is conducted in accordance with the basic directions of use of agricultural, forestry and fishing areas, in conditions of continuous improvement of the animals' living environment.

2. The management of game populations requires in particular:

1) creation of permanent and periodic shields for animals (forests, shelters, shrubs, fire stations, covers of nesting places);

2) enrichment of the natural feeding base for game in forests;

3) preservation of existing natural water reservoirs, reconstruction and creation of new ones;

6) maintaining ecological corridors (sequences) for animals;

7) maintaining the age and gender structure and the size of game populations appropriate for ensuring the balance of ecosystems and achieving the main economic goals in agriculture, forestry and fishery;

8) protection of animals against the threat of traffic on motorways on national and provincial roads.

Strategy for sustainable rural development, agriculture and fisheries by 2020

Strategię zrównoważonego rozwoju wsi, rolnictwa i rybactwa" na lata 2012-2020

http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WMP20120000839/O/M20120839.pdf

For details see 6.4.1

6.4.4. Tourism and Recreation

Lack of legal acts referring to GI

6.4.5. Energy

Energy Policy of Poland until 2030

Polityka energetyczna Polski do 2030 roku

https://www.gov.pl/web/energia/polityka-energetyczna-polski-do-2030-roku

The document was prepared in accordance with Articles 13 - 15 of the Energy Act and presents the state's strategy aimed at responding to the most important challenges faced by the Polish energy sector, both in the short term and in the perspective until 2030.

The main directions of the Polish Energy Policy are:

- Improvement of energy efficiency,
- Increased security of fuel and energy supply,
- Diversification of the electricity generation structure through the introduction of nuclear energy,
- Development of the use of renewable energy sources, including biofuels,
- Development of competitive fuel and energy markets,
- Reduction of energy impact on the environment.

One of the objectives in the development of renewable RES energy sources is to protect forests against overexploitation, to obtain biomass and the sustainable use of agricultural land for RES purposes, including biofuels, so as not to lead to competition between renewable energy and agriculture and to preserve biodiversity.

Strategy Energy Security and Environment - the Prospect of 2020

Strategia Bezpieczeństwo Energetyczne i Środowisko perspektywa do 2020 r.

http://www.monitorpolski.gov.pl/MP/2014/469/1#

This is an important Strategy from the point of view of the Green Infrastructure concept. The main objective of the Energy Security and Environment Strategy is to ensure that a high quality of life for present and future generations, taking into account the protection of the environment and the creation of conditions for sustainable modern development the energy sector, capable of ensuring Poland's energy security and a competitive and efficient economy. It covers two extremely important areas: energy and the environment, indicating, among others, key reforms and necessary actions to be taken in the perspective until 2020. One of the key reforms should concern the issues of spatial planning. The lack of an efficient spatial planning system and investment expansion may cause difficulties in spatial management and lead to the degradation of valuable natural and cultural resources of the country.

6.4.6. Sustainable Development

Act of 6th December 2006 on the Principles of Development Policy

USTAWA z dnia 6 grudnia 2006 r. o zasadach prowadzenia polityki rozwoju

[Journal of Laws of 2006 No. 227, item 1658 as amended, consolidated text of 11th August 2017]

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20190001295

This Act determines the principles of development policy mainly at the national and regional level, as well as in a very general scope at the local level. It indicates entities conducting this policy and the mode of cooperation between them. It determines the scope and mode of preparation of basic documents – tools for conducting this policy, including various types of development strategies. The regulations of this Act do not include any references to GI and it approaches the need to take into account the principle of sustainable development, state of the environment, environmental and spatial context (in addition to social and economic context) during their development only in a very general aspect.

This Act covers, amongst others, the regulations for issues that may be related to the functioning of selected GI elements but only in an indirect manner, i.e. Development Strategies, Territorial Contract, Operational

Programmes, Development Programmes and Urban Policy.

Strategy for sustainable rural development, agriculture and fisheries by 2020

Strategię zrównoważonego rozwoju wsi, rolnictwa i rybactwa" na lata 2012-2020

http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WMP20120000839/O/M20120839.pdf

For details see 6.4.1

Strategy for Responsible Development

Strategia na rzecz Odpowiedzialnego Rozwoju do roku 2020 (z perspektywą do 2030 r.)

[CC, Warsaw 2017]

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WMP20170000260

The Strategy constitutes the latest, basic document which specifies the directions of the development policy of Poland from the perspective of the year 2020 (designated towards 2030), where a new model of development is indicated and principles of socially sensitive and territorially balanced development are defined within the framework of three accepted detailed objectives. Within this document, apart from very general references to national development presented in such a manner, taking into account individual potential of particular territories (but strictly concerning their social-economic dimension), there are practically no references to GI.

Traces of such references, concerning certain selected elements may solely be found in the strategy, where it is assumed that it is necessary to improve the capacities of urban centres to create development, growth and employment and to support for sustainable growth (among others, through counteracting negative phenomena related to suburbanisation, re-use of formerly developed areas, revitalisation of relegated urban areas), and under development actions on rural areas, the recommended preservation of cultural values, landscape and natural environment.

National Strategy of Regional Development 2010–2020: Regions, Cities, Rural Areas

KRAJOWA STRATEGIA ROZWOJU REGIONALNEGO 2010-2020: REGIONY, MIASTA, OBSZARY WIEJSKIE

http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WMP20110360423/O/M20110423.pdf

National Strategy of Regional Development 2010-2020: Regions, Cities, Rural Areas is a document defining the goals and manner of operation of public entities in relation to the Polish space for achieving strategic goals of the country's development. The strategic objective of regional policy is to effectively use specific regional and territorial development potentials to achieve the country's development goals - growth, employment and cohesion in the long-term horizon.

It is also important to ensure that changes in the way of using space and the intensification of socio-economic processes, the improvement of living conditions and the increase in consumption levels are stimulated in accordance with the constitutional requirement of sustainable development. Individual projects must take into account the need to maintain the sustainability of ecosystems, optimize the use of space and maintain a high level of biodiversity.

Rural Development Programme for 2014-2020

Program Rozwoju Obszarów Wiejskich na lata 2014-2020

https://www.arimr.gov.pl/pomoc-unijna/prow-2014-2020.html

Under the program there are two important activities for green infrastructure: agro-environmental-climate action and organic farming. In particular, the agro-environmental-climate action is important because it contains specific tools to protect habitats that are part of green infrastructure.

6.5. Spatial Planning

6.5.1. Regional and Local Planning

Act of 27th March 2003 on Spatial Development and Planning

USTAWA z dnia 27 marca 2003 r. o planowaniu i zagospodarowaniu przestrzennym

[Journal of Laws of 2003 No. 80, item 717 as amended, consolidated text of 13th September 2017]

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20180001945

This Act determines the principles of shaping spatial policy by units of territorial self-government and bodies of government administration, as well as the scope and methods of procedure in the matters of allocation of the areas for specific purposes and establishing the principles of their development. It has essential significance for the functioning of the most important components of GI, constituting the subject of findings undertaken in the acts of local planning resulting from the act and concerning, among others, the condition of the environment, including agricultural and forest production area; size and quality of water resources and requirements for the protection of environment; nature and landscape, including the cultural landscape; as well as the occurrence of protected objects and areas.

Among concepts important for the functioning of GI, defined in the Act and used to indicate the detailed regulations contained within it, concerning the principles of conducting spatial policy of local governments at the local, regional and national level, and to implement them in practice, the following, amongst others, should be mentioned:

- the concept of spatial order – understood as the shaping of space, which creates a harmonious whole and takes into account, in the ordered relations, all conditions and functional, socioeconomic, environmental, cultural and composite aesthetic requirements,
- the concept of landscape – understood as the space perceived by people that contains natural elements and creations of civilisation, shaped by natural factors and human activities,
- the concept of priority landscape – understood as the landscape particularly valuable to the society due to its natural, cultural, historical, architectural, urban, rural, aesthetic/scenic value, and as such requiring the preservation or determination of the principles and conditions of its form.

The Act covers regulations for issues directly associated with the functioning of selected GI elements, among others for such issues as: spatial planning in the municipality, in the metropolitan area and on the national level, as well as functional areas.

National Spatial Development Concept 2030

Koncepcja Przestrzennego Zagospodarowania Kraju 2030

[MP of 2012, item 252 of 27th April 2012]

http://www.esponontheroad.eu/dane/web_espon_library_files/682/national_spatial_development_concept_2030_summary.pdf

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WMP20120000252

This Concept is the most important national strategic document concerning spatial development of Poland, which aims at directing planning, especially at the regional level. It contains a vision of its spatial

development for the next twenty years, defines objectives and directions of the national spatial development policy in order to facilitate its implementation, and also indicates the principles and mechanisms for coordination and implementation of public development policies having significant territorial impact.

Among the six objectives determined in the national spatial policy concept, it's necessary to mention Objective 4: shaping of spatial structures supporting the achievement and maintenance of high quality natural environment and landscape values of Poland. Although concepts associated with the GI idea are not used in the formulation of the actions, its essential elements contribute to the construction of this system, and constitute tasks covered in the aforementioned directions, they concern:

- securing the possibility of further socio-economic development based on well-preserved natural resources, cultural and local values of the environment,
- ensuring a rational connection of socio-economic development with the protection of water resources and their availability.

This document emphasises the need to counteract the fragmentation of habitats and the creation of the best possible spatial ecological connections (which contributes to the building of GI). It mentions undertaking long-term actions for mitigation and resolution of conflicts between the objectives of technical environmental protection, protection of landscape values and the pressure from the development of settlements, transport and tourism. It should be achieved through the management of planned functional and landscape structures. The related actions are supposed to cover, amongst other aspects, integration of areas included in the supplemented network of the National System of Protected Areas, Natura 2000 network and legally-established system of green corridors connecting the individual node areas.

In addition to the strengthening of spatial planning it integrates socio-economic planning, which should promote the development of GI network in relation to water management. The concept also assumes the use of such instruments as water management plans in the catchment area, flood risk management plans and plans for counteracting the consequences of drought.

6.5.2. Urban Planning

National Urban Policy 2023

Krajowa Polityka Miejska 2023

[Ministry of Infrastructure and Development, Warsaw 2015]

http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WMP20150001235/O/M20151235.pdf

As the first of this kind of national document specifying the planned actions of state administration in the scope of urban policy, the objective of this policy is the orientation of territorial actions of the country towards sustainable growth of cities and their functional areas as well as the use of their potential in the country's development processes.

This document contains very general, though explicit, references to GI, such as General Objective 2 which concerns the support of sustainable growth of urban centres, including counteracting the negative phenomena of uncontrolled suburbanisation. Actions directed towards sustainable growth of cities and the areas surrounding them are indicated. In addition, facilitating the cities' simultaneous and coordinated strive for spatial order, shifting towards low emission economy and building "green" cities, increasing energy efficiency, environment protection and adjustment to climate change are also mentioned.

On the other hand, amongst the recommendations of the Policy concerning the shaping of urban space of high quality, it indicates the necessity (applying the term GI):

- to consider the significance of green areas which shape the microclimate and slow/reduce the precipitation run-off rate,

- to halt the pressure towards developing in the biologically active areas in the cities and
- to improve the availability of green infrastructure for the cities' inhabitants.

Within the document it is underlined that while preparing studies and spatial management plans local governments ought to consider recommendations concerning the use of concept of provision of ecosystem services in planning, elaborated in the framework of the project 'Urban MAES - ecosystem services in urbanised areas' conducted by the Ministry of Environment.

6.5.3. Sectoral Planning

Decree of the Council of Ministers of 18th October 2016 regarding the Water Management Plan in the Odra River basin

Rozporządzenie Rady Ministrów z dnia 18 października 2016 r. w sprawie Planu gospodarowania wodami na obszarze dorzecza Odry

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20160001967

In accordance with Article 13 and Annex VII of the WFD, the International Water Management Plan for the Oder River Basin includes detailed information on the following topics:

- General characteristics of the river basin district,
- List of significant pressures and anthropogenic impacts on the state of waters,
- Identification and mapping of protected areas,
- Monitoring networks and results of monitoring programs,
- List of environmental goals,
- Summary of the economic analysis of using water,
- Summary of action programs,
- Summary of activities to inform the public and social consultations,
- List of competent authorities,
- Contact addresses for obtaining output documents.

To achieve environmental goals, it is important to allow free migration of aquatic organisms by maintaining or restoring the ecological continuity of watercourses. The plan for clearing river corridors should focus on key species, priority waters and clearance stages.

6.5.4. Access to Information on the Environment and Public Participation

Act of 3rd October 2008 on the Provision of Information on the Environment and its Protection, Public Participation in Environmental Protection and Environmental Impact Assessments

USTAWA z dnia 3 października 2008 r. o udostępnianiu informacji o środowisku i jego ochronie, udziale społeczeństwa w ochronie środowiska oraz o ocenach oddziaływania na środowisko

http://prawo.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20180002081

Public participation in the development of documents in the field of environmental protection is regulated by the Act on sharing information about the environment and its protection, public participation in environmental protection and environmental impact assessments. The body preparing the document is obliged to provide information about this document, in particular about the preparation of the draft document and its subject, the possibilities of reading the necessary documentation of the case, the opportunity to submit comments and applications and the place of submission and the competent authority

to consider them.

The documents requiring public participation are in particular projects requiring strategic environmental impact assessment. These include projects:

1. the concept of spatial development of the country, the study of conditions and directions of spatial management of the commune, spatial development plans and regional development strategies,

2. policies, strategies, plans or programs in the fields of industry, energy, transport, telecommunications, water management, waste management, forestry, agriculture, fisheries, tourism and land use, developed or adopted by administrative bodies, setting the framework for the subsequent implementation of projects that may significantly affect on the environment,

3. policies, strategies, plans or programs other than those mentioned in points 1 and 2, the implementation of which may cause a significant impact on the Natura 2000 area if they are not directly related to the protection of the Natura 2000 site or do not result from this protection.

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C. Green Infrastructure Assessment Needs/Specifications

Introduction to the chapter

This chapter presents the results of project partners' consultations with national and regional bodies and stakeholders in terms of needs and specifications for the assessment of green infrastructure in Central Europe. The consultations took place in very different ways, e.g. personal meetings, telephone conversations or letter questionnaires.

In Section 1 the main conclusions that can be drawn from the consultations regarding the GI assessment needs and specifications are summarised. This shows general needs and specifications for the assessment of green infrastructure in Central Europe.

Section 2 presents the 9 Case Studies of the MaGICLandscapes project and what are the specific local needs for a GI assessment there.

1. General Assessment Needs/Specifications

Based on the project partners' consultation results the following seven general needs or specifications for the assessment of Green Infrastructure (GI) have been detected. It was assumed, that an assessment need or specification could be considered general if it has been communicated in a similar way by at least three of the five partner countries.

Definition and Promotion of the Term Green Infrastructure

For some regional bodies the term Green Infrastructure (GI) is still somewhat abstract or rather unknown. On the other hand, the term provides an atmosphere of discomfort. Especially nature conservationists dislike this term due to its technical character.

Therefore, the theoretical definition of the GI term, the GI concept in general as well as the benefits of GI should be further promoted. Especially, the awareness of the multifunctionality of GI should be increased.

Green Infrastructure in Environmental Education

Educational tools are needed to increase the knowledge and awareness of the importance of GI, especially in connection with nature conservation and biodiversity preservation. Therefore, the GI concept should be integrated into higher education and training courses for all kinds of stakeholders are desired.

More Green Infrastructure in (peri-) urban Areas

In general, the network of urban green itself and its ecosystem services need to be improved. More examples on the increased implementation of GI in urban environments are desired. Furthermore, urban green needs to be connected with the surrounding landscape. Especially peri-urban zones were highlighted as a kind of buffer between the settlement and the intensively used landscape, which need a special management and enhancement.

Networking

Existing spatial plans often end at the border of a given municipality. To improve the landscape permeability and to create transregional habitat networks, the GI network must be planed and assessed independently of administrative boundaries! The connectivity of wildlife corridors for many species of plants and animals, needs to be improved, in general.

Linkage between Green and Grey Infrastructure

The GI concept has to be thought of even more in conjunction with grey infrastructure. Grey infrastructure, like railways or cycle paths with their accompanying green, can have a networking function for other green areas. Furthermore, a sufficient Grey Infrastructure, e.g. digital networking or cycle paths, can be needed to make most value out of the Green Infrastructure.

Development of simple tools for decision makers and local application

Tools for planning and assessing GI need to be simple, understandable and easily usable by local administrations, decision-makers, bodies of renovation and development as well as schools. According to the consultation results, only such tools will be a useful contribution to the conservation, expansion and integrated management of GI at local and regional level. Special solutions, guidelines or actions need to be elaborated, which can be implemented for example in local spatial management plans. Therefore, the outputs of the MaGICLandscapes project should have a compatible form with common planning documents.

Cooperation and Coordination

Cooperation and Coordination with local projects, bodies or plans seems to be very important in planning and assessing GI. “Working together among institutions” or “further inter-sectoral dialogue” are some typical phrases communicated by the project partners. Cooperation should be targeted, among others, with communities, managers of grey infrastructure, managers of other local GI-projects and/or planning authorities.

2. Specific local needs – Case Studies

The assessment of Green Infrastructure (GI) within the project MaGICLandscapes takes place in nine Central European Case Study Areas (Figure 5). These Case Study areas represent a broad variety of different landscape features and habitats as well as different cultural or socioeconomic characteristics. There are for example protected areas like the National Parks Karkonosze (Polish Giant Mountains)/Krkonoše (Czech Giant Mountains) and Thayatal (Austria) or the Nature Park Dübener Heide (Germany), areas characterized by large rivers like the Upper Po Plain (Italy), areas dominated by agricultural use like Kyjovsko region (Czech Republic) or Wald-/Weinviertel (Austria) as well as areas containing larger cities with more than 100,000 inhabitants like the Tri-border area Czech Republic-Germany-Poland with the city of Liberec up to the Po Hills around Chieri with the metropolitan city of Turin (Italy).

Accordingly these differences between the case study areas mean each case study area has its own specific local needs or specifications for the assessment of Green Infrastructure (GI). In the following section the nine case study areas are introduced and accompanied by a factsheet for each case study area. Furthermore, the specific local needs or specifications of each case study area are presented, based on identified local problems, threats or GI gaps.

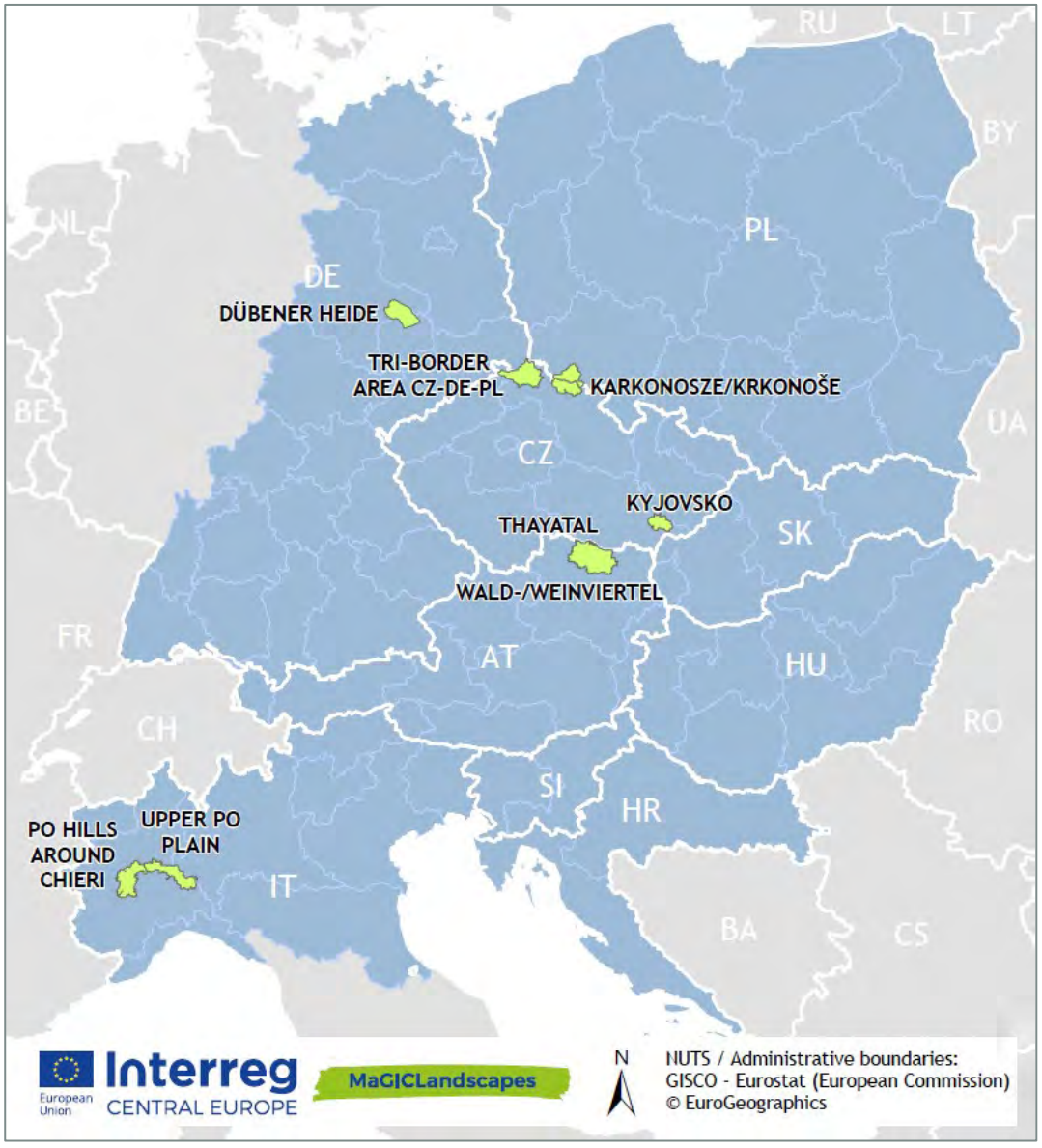

Figure 5: Map of Central Europe (blue area) with the nine case study areas (green) of the MaGICLandscapes project.

2.1. Case Study Western Weinviertel and Eastern Waldviertel, Austria

The landscape of the case study area "Western Weinviertel and Eastern Waldviertel" is typically characterised by narrow partitioned strips of farmland with many field margins and boundary ridges. Due to rapid structural changes in agriculture, with the increasing intensive cultivation on the one hand and the abandonment of the management and maintenance of small and unattractive sites on the other hand, today parts of the landscape in this case study area are pretty much cleared and featureless. Raising awareness and improvements in this field will be important here. Existing migration axes and gaps in the GI-network have to be identified and several disconnected Natura2000-areas should be linked. The challenge will be to preserve and to recreate ecologically relevant landscape elements in cooperation and in consultation with local land managers, taking account of the private economic interests. Grasslands and streams in the Waldviertel and dry and xeric grasslands in the Weinviertel have been identified as priorities for action.

Also the large-scale spread of the invasive False Acacia (*Robinia pseudoacacia*) on abandoned meadows, dry and xeric grassland, as well as woodlots and hedges has become a serious issue to the quality and functionality of GI elements in the region. Especially in the more wooded western part of the case study area, the Waldviertel, monotone species-poor plantations of spruce dominate extensive parts of the landscape. Raising awareness for more site-typical indigenous woodland vegetation and forest species as well as the initiation of a development for achieving this aim will be another priority for action.

Factsheet: Case Study Eastern Waldviertel and Western Weinviertel, Austria

View over Retz (AT) at the transition from Eastern Waldviertel to Western Weinviertel, in the background the pannonian basin (by Florian Danzinger)

Typical loess terraces accompanied by complexes of dry and xeric grassland (by Florian Danzinger)

Overview map of the Wald-/Weinviertel

Location (political):
State: Lower Austria
Districts: Hollabrunn and Horn

Covered larger Cities:
Horn (5.578 inh.), Eggenburg (3.143 inh.), Retz (2.491 inh.), Hollabrunn (6.910 inh.)

Covered Landscapes (W – E):

Large-scale:
Pannonian basin - granite and gneiss highland

Small scale:
Nördliches und Südöstliches Waldviertel - Eggenburger Becken – Südwestliches und Nordwestliches Weinviertel

Area: 1794,9 km²

Elevation: 180 - 603 m a.s.l.

Important Green Infrastructure Elements:

- Dry and xeric grassland
- Meadows and wetlands
- extensively cultivated vineyards
- species-rich broadleaved forests
- field margins, hedgerows and woodlots
- orchard meadows
- streams and ponds

Problems/GI Gaps:

- increasing intensive agriculture
- cleared and featureless landscapes
- monotone spruce "plantations"
- abandonment of agriculture on marginal land and in remote locations
- invasive spreading of False Acacia (*Robinia pseudoacacia*)
- Channelled river sections
- Disconnectedness of GI elements

2.2. Case Study Thayatal National Park, Austria

The Thayatal National Park in the north of Austria was founded in 1999 to protect the high biodiversity of the meandering River Thaya valley. It plays an important role in the landscape protection since the border region between Austria and the Czech Republic is intensively used for agriculture. The National Park provides a refuge for rare and endangered species which otherwise would not be able find a suitable habitat in the surrounding agricultural landscape. In order to protect and improve the biodiversity of the National Park, better connected green infrastructure will be a key factor for a satisfactory continuity of the park. Many species struggle to find migration corridors through agricultural land, which for the most part surrounds the National Park. For example the rare European wildcat (*Felis silvestris silvestris*), which was believed to be extinct in Austria, found its way back into the country. Sightings in the Thayatal National Park were confirmed on several occasions by DNA-analyses. For the preservation of a healthy wildcat population an exchange of genetic material must be ensured. Without efficient green infrastructure many species would suffer of genetic depletion. The roles of such natural protection sites in Central Europe, which are often surrounded by agricultural land, is very important for the preservation of a functional natural environment. It allows the natural vegetation to adopt to climate changes and therefore protects biodiversity for generations to come. Such natural environments are also home to pollinators which are vital to Austria's agricultural economy. In order to secure the continuance of the functionality of the natural protection sites, green infrastructure is indispensable in keeping the landscapes and its people healthy. Therefore it is of high interest for the Thayatal National Park to improve its connectedness to other natural habitats and protection sites throughout Central Europe.

Factsheet: Case Study Thayatal National Park, Austria

Thaya river valley (by D. Manhart – Nationalpark Thayatal GmbH)

Location (political):
Weinviertel

Covered larger Cities:
Hardegg

Covered Landscapes (E - W):
National Park forests – meandering river valley Thaya

Area: 13,6 km²

Elevation: 250 – 520 m a.s.l.

Border river Thaya (by D. Manhart – Nationalpark Thayatal GmbH)

Important Green Infrastructure Elements:

- Mixed deciduous forest (92 % of the area)
- Thaya river and tributaries
- Dry and wet grassland
- Steep rock faces

Overview map of Thayatal National Park

Problems / GI Gaps:

- Missing connectivity to other nature protection sites, for example for the wildcat (*Felis silvestris silvestris*)
- Water dams

2.3. Case Study Kyjovsko, Czech Republic

Kyjovsko is a diversified lowland region situated in the south-eastern part of the Czech Republic in South Moravia. More than half of the region is intensively used, especially for agriculture, resulting in very large, impermeable blocks of arable fields that suffer from wind and water erosion. Due to its warm and dry climate, the region is known for its vineyards and in a lesser extent also for orchards which unfortunately are disappearing quickly. Larger forest complexes can be found in the north and in the south of the Kyjovsko. There are also some remnants of dry grasslands. One of the unique but rapidly vanishing features of the landscape are the mosaic landscapes of small holdings – a mixture of vineyards, orchards, arable fields and grasslands, usually connected with settlements.

The term GI largely corresponds to the Czech Territorial System of Ecological Stability (so called TSES). In the Kyjovsko region, TSES is usually only on paper and only some parts have been realised (planted) so far – unfortunately the realisation of these parts is not collected centrally. Therefore, a database of updated information about TSES and GI in general as well as revision of existing information is needed. Furthermore, due to collectivisation, the landscape became hard to access, so better permeability both for people and wildlife is needed. Also, there is a lack of defining, delineating, and suitably managing zones that create buffers between settlement and the intensively used landscapes. Some form of guidelines are therefore needed. Last but not least, in recent years, the region suffered from drought, so some measures in combating this problem through the use of GI should also be found.

Factsheet: Case Study Kyjovsko, Czech Republic

Large arable fields near Šardice (by Marek Havlíček, 2017)

Location (political):
Southern Moravia

Covered larger Cities:
Kyjov, Bzenec, Vracov, Ždánice

Covered Landscapes (W - E):
Ždánický forest – Kyjovská pahorkatina hilly land – Morava floodplain

Area: 470,2 km²

Elevation: 160 - 542 m a.s.l.

Small holdings near Hovorony (by Marek Havlíček, 2012)

Important Green Infrastructure Elements:

- forests
- dry grasslands
- complex cultivation patterns – small holdings of vineyards, orchards, arable fields, scattered greenery and grasslands
- water areas and wetlands

Overview map of the Kyjovsko

Problems/GI Gaps:

- extensive impermeable blocks of arable land
- lack of updated data about existing GI
- unconnected existing GI elements

2.4. Case Study Giant Mountains (Krkonoše) National Park, Czech Republic

Krkonoše is home to the highest mountains in the Czech Republic and in Central Europe north of the Alps. Despite the relatively compact area concerned and the range's low altitude there is an abundance of variety in the landscapes types (from the patchwork of pastures, fields, small villages in the lower parts, through wide strips of forest, to artic-alpine tundra in the upper parts) and flora and fauna, far exceeding that of the moderately sized mountains in the surrounding countries of Europe.

This is due to Krkonoše's unique geographical location in the centre of Europe, where events in the distant and more recent past took place that shaped the nature and landscape of Central Europe. In fact, the mountains form the northernmost montane border of Central Europe, stretching in length just over 50° of northern latitude, whilst their slopes protrude above the alpine tree line. Consequently, the Krkonoše Mountains represent a mighty and natural barrier on the perimeter of large open plains in Germany and Poland. They measure approximately 35 km in length, with their main ridges and valleys are arranged in a direction from northwest to southeast. This significantly affects all the geographical, climatic and biological features of these European medium-sized mountains and their surroundings. Therefore, Krkonoše Mountains are a truly important area for geobiodiversity in Central Europe.

In the Krkonoše Mountains case study area there is no problem with amount of types and area of green infrastructure elements. The problem is the fragmentation/disconnectivity of the GI due to tourism and related issues (increasing built-up areas, numerous ski slopes, large numbers of people in the protected areas with high nature value etc.). In the Czech Republic the concept of GI is connected with the Territorial System of Ecological Stability, which is also included in regional planning of municipalities. In the case study area, they are missing detailed maps of GI that could be the basis for the local level of Territorial System of Ecological Stability and would be useful for example regional and local development plans.

Factsheet: Case Study Krkonoše National Park, Czech Republic

Upper parts (northern) of Krkonoše Mts. (arcto-alpine tundra) (by Kamila Antošová)

Location (political):
North-eastern Bohemia (Královéhradecký and Liberecký region)

Covered larger Cities:
Vrchlabí, Harrachov, Špindlerův Mlýn

Covered Landscapes (S – N):
Krkonošské podhůří hilly land – Krkonoše Mountains

Area: 549,7 km²

Elevation: 383 - 1603 m a.s.l.

Lower parts (southern) of Krkonoše Mts. (patchwork of meadows and pastures, forests, strips of trees, small villages) (by Kamila Antošová)

Important Green Infrastructure Elements:

- Forests
- Arcto-alpine tundra (moors, peat bogs, rocks)
- Pastures and meadows
- Mountain rivers and streams

Overview map of the Giant Mountains (Krkonoše) National Park

Problems / GI Gaps:

- Fragmentation of important elements of GI due to tourism increase
- lack of data of the most fragmented areas
- absence of data on the connectivity design of GI elements (absence of detailed local level Czech Territorial System of Ecological Stability design)

2.5. Case Study Tri-border region Czech Republic-Germany-Poland

The case study area Tri-border region Czech Republic-Germany-Poland is characterised by a mountain range stretching from the Bohemian Switzerland in the west via the Zittau Mountains to the Jizera Mountains in the east. An important landscape feature in south-north direction is the River Lausitzer Neisse and its tributaries. This network of rivers links the three countries and flowing between mountainous areas with forests, bogs, mountain meadows or rocks to the lowland with smaller and larger cities (for example Zittau or Liberec) and agricultural areas.

One major problem in this case study area are the straightened or canalised river sections. Renaturalisation is needed to improve the functionality of the floodplains for example to prevent flood risk and creating new habitats at the same time. An increase in the use of such nature-based solutions as part of compensation measures is also needed and could be a good opportunity to replace some of the more technical flood protection installations.

The region is an important ecological corridor between the two national park regions of Saxon-Bohemian Switzerland and the Giant Mountains, but especially between Zittau Mountains and Jizera Mountains GI elements are often disconnected. This is due to settlements, main transport infrastructure and areas used for agricultural purposes located in the Lausitzer Neisse floodplain. In urban/sub-urban areas more school gardens and green spaces on school property or the creative enhancement of unused and abandoned spaces in cities may help to improve the connectivity and in the same way to meet the education and recreation needs of the urban populations.

In the German part of the “Tri-border region Czech Republic-Germany-Poland” the valorisation and protection of un-fragmented, low-traffic areas plays an important role.

Factsheet: Case Study Tri-border region Czech Republic-Germany-Poland

View to Zittau (DE), in the background open pit mine Turow (PL) (By Jürgen Lindert [CC BY-SA 3.0 de or GFDL], from Wikimedia Commons)

Location (political):
Northern Bohemia - Eastern Saxony – Lower Silesia

Covered larger Cities:
Liberec - Zittau – Bogatynia

Covered Landscapes (W - E):
Bohemian Switzerland – Zittau Mountains – Neisse Floodplain - Jizera Mountains

Area: 1,068.4 km²

Elevation: 200 - 1085 m a.s.l.

Tri-border point on the River Neisse (By Honza Groh [CC BY-SA 3.0], from Wikimedia Commons)

Important Green Infrastructure Elements:

- Neisse river and tributaries
- Forests
- Mountain meadows
- Rocks
- Peat bogs

Overview map of the Tri-border region Czech Republic-Germany-Poland

Problems / GI Gaps:

- Embarked river sections (especially in Cities)
- Disconnectedness of GI elements, especially between Zittau Mountains and Jizera Mountains due to settlements, main traffic routes or areas used for agricultural purposes
- Open pit mine Turow (PL)

2.6. Case Study Dübener Heide Nature Park, Germany

The Nature Park Dübener Heide is the first nature park in Germany that has been founded by local citizens. The main motivation for its establishment was to prevent it from becoming an area for the coal mining industry. Now the objective of the park has changed towards creation of an area of well-being for humans and nature with the beaver (*Castor fiber)* as a flagship species. While offering a well conserved green infrastructure, the area lacks grey infrastructure disincentivising small and service businesses wanting to settle in the region. Currently digitalization and construction of cycle roads are underway and in the planning. Consequently, those developments need to be assessed regarding their impact on the existing green infrastructure. Given the community based character of the nature park, any assessment methods have to be highly participatory.

Factsheet: Case Study Dübener Heide Nature Park

Heather bloom at Dübener Heide Nature Park (by Nico Fliegner)

Location (political):
Northern Saxony – Eastern Saxon-Anhalt

Covered larger Cities:
Bad Düben, Bad Schmiedeberg

Covered Landscapes (E – W):
Elbe and Mulde floodplain – Presseler Peat and heath lands

Area: 770,0 km²

Elevation: 185 - 190 m a.s.l.

The so-called „Försterweg“ (by Nico Fliegner)

Important Green Infrastructure Elements:

- Riparian and Mixed woodlands
- Ponds
- Heath lands
- Lowland meadows and farming land
- Hills

Overview map of the Dübener Heide Nature Park

Problems/GI Gaps:

- Touristic pressure by large cities nearby
- Flood risks
- Beaver connected land use conflicts

2.7. Case Study Upper River Po Plain, Italy

The case study area "Upper River Po Plains" is located in the Piedmont and Lombardy regions of northern Italy. It corresponds to the touristic zone of the Vercellese-Alessandrino River Po Park, which is a system of protected areas aimed at the protection of one of the last naturally preserved large lowland rivers in Italy, together with the surrounding rice fields, in the north, and the woody and extensively cultivated hills (Monferrato hills), in the south.

In general, the Vercellese-Alessandrino Po Park Authority underlines the need and the opportunity to introduce the concept of GI into their planning tools and managing activities, for example the Management Plans which have to be drafted for the conservation of species and habitats within the sites of the Natura 2000 Network.

The main management issues in the area regard the conservation of the river corridor, not only constituted by the river itself but also by the floodplain with its natural elements such as wetlands, oxbows and riparian forest; in this area one of the most important threats are invasive alien species, both vegetation and animal. Also all aspects of agriculture management are strictly linked to the Park conservation activities and impact mitigation.

From the management point of view, another target is to evaluate how infrastructure, such as cycle paths (VenTo in particular, the cycle path Venezia-Torino) can coexist with sustainable management of the riverbanks (with reference to the different ecosystem services associated with it).

Factsheet: Case Study Upper River Po Plain

Aerial view of River Po and surrounding plane. (by C. Lenti - Foto Archivio "Aree Protette Po vercellese-alessandrino")

Location (political):
Piemonte – Lombardia

Covered larger Cities:
Casale Monferrato – Valenza - Trino

Covered Landscapes (E – W):
Monferrato hills – Po plain – Vercelli rice fields

Area: 960,5 km²

Elevation: 65 - 350 m a.s.l.

Kingfisher (by M. Biasioli - Foto Archivio "Aree Protette Po vercellese-alessandrino")

Important Green Infrastructure Elements:

- River Po and tributaries
- Minor hydrographic network
- Riparian vegetation
- Wetlands
- Rice fields
- Plain and hill forests
- Grasslands

Overview map of the Upper River Po plains

Problems / GI Gaps:

- Management of river corridor (riparian zones, channels, lateral wetlands, floodplains)
- Management of irrigation network
- Sustainability of fruition activities and facilities
- Changes in cultivation practices
- Spread of exotic species

2.8. Case Study Po Hills around Chieri, Italy

The case study area "Po Hills around Chieri" is located in the Piedmont Region and in Metropolitan City of Turin; it includes the Po Hills (Colline del Po), that are low-elevation hills, south of the Turin Po and east of the city of Turin. They are also known as Colline Torinesi (Turin Hills).

The study area also includes the River Po - the most important of Italy - a flat strip and the confluence of various tributaries of the Po. The territory offers many opportunities in terms of natural and cultural heritage but there are also many different threats and problems.

On the Turin hill are identified two Special Areas of Conservation (SAC): "Superga Hill" and "Bosco del Vaj and Bosc Grand" established for the presence of characteristic chestnut and oak woods. Moreover, in 2016 the Turin's hill area and the River Po protected area have been recognized as "Collina Po Biosphere Reserve" as first recognition of Urban UNESCO Man and Biosphere (MAB) Reserve in Italy. It is an area of 171,233.85 hectares which includes over 80 municipalities and sectors characterised by both natural and human causes. The "Po Hills around Chieri" case study area is fully within the UNESCO MAB Reserve.

On the flat area there are many Special Areas of Conservation (SAC) and natural reserve areas along the River Po too, included in the "Turin River Po Park", a system of protected areas along the river that continues into the Vercellese-Alessandrino River Po Park (see Case Study "Upper River Po Plains" above).

On the other hand there are various threats due to urban growth and grey infrastructure (the area includes the Municipality of Turin, a big city, and its surroundings) for example: landscape deterioration, especially in the hilly areas and in the valley systems; high values of environmental insularisation; loss of biodiversity and environmental connectivity caused by soil consumption; forest sporadic cuts but overly with expansion of invasive species; spread of exotic species; landscape transformation due to cereal crops and arboriculture.

Aims and needs

For the Piedmont (administrative) Region an aim is to cooperate with the "LOS_DAMA! Project". The objectives of this project is to enhance and manage peri-urban landscapes and their natural and cultural heritage, as an integral part of the network of GI, in order to make the Alpine Space more liveable, attractive and to enhance the identity of Alpine metropolitan cities.

In general, the "Turin River Po Park" underlined the need and the opportunity to introduce the concept of GI into their planning tools and in their managing activities. In fact, for the Park, the target will be the connection of the separated areas (and the integrations of the respective plans) of the Superga (hill) and the Po (river corridor) regions.

Furthermore, tools are needed to draw an operational territorial project of the entire Turin Hill with the implementations of rules for the buffer zone and transition areas of the "Collina Po Biosphere Reserve".

For the Municipality of Chieri, the main expectation is the construction of a model of analysis and design / management of GI, understandable and easily usable by local administrations.

Factsheet: Case Study Po Hills around Chieri

Turin Hills with the Basilic of Superga (by Roberto Pascal – Foto Archivio "Aree Protette del Po Torinese")

Location (political):
North Italy; Piedmont Region; Metropolitan City of Turin

Covered larger Cities:
Torino, Chieri, Carmagnola, Chivasso, Settimo Torinese

Covered Landscapes (E – W and S-N):
Turin/Po Hills - Poirino Highland - River Po with plains - Metropolitan City of Turin and periurban areas

Area: 1043,1 km²

Elevation: 140 - 715 m a.s.l.

Villa della Regina on Turin Hills (by Anna Maria Manciagli – Foto archivio Città Metropolitana di Torino)

Important Green Infrastructure Elements:

- Protected Areas/Nature 2000 Sites
- Forests and seminatural areas
- River Po and its tributaries
- Lakes
- Wetlands
- Heterogeneous agricultural areas
- Urban green areas

Overview map of the Po Hills around Chieri

Problems/GI Gaps:

- Urban expansion in plain areas along the main transport infrastructures
- Urban sprawl in hill and valley areas
- Brownfield sites
- Landscape deterioration
- High degree of environmental insularisation due to grey infrastructure and industry
- Soil consumption and sealing
- Loss of biodiversity and environmental connectivity caused by soil consumption
- Spread of exotic species

2.9. Case Study Giant Mountains (Karkonosze) National Park, Poland

The Karkonosze National Park (Poland) to assess green infrastructure (GI) in transnational scale chose areas situated north of the Giant Mountains. This area is called the Jeleniogórska Basin (Jelenia Góra Basin) with fragments of mountain ranges surrounding it. The Giant Mountains and the Jelenia Góra Basin are characterised by a fairly rich resource of valuable areas including Natura 2000 sites located in the Jelenia Góra Basin, landscape parks, and numerous palace buildings, accompanied by valuable nature parks and gardens. The Karkonosze National Park is designated as habitat and bird area of Natura 2000.

For the Polish Giant Mountains (Karkonosze) and their surrounding area meadow ecosystems are considered to be an extremely important component of GI, crucial for the preservation of cultural landscape and biological diversity, but threatened by destruction or abandonment of use. A database and maps of meadow habitats in the Polish Giant Mountains, verified in the field, are needed. Furthermore, there is a need for information on damaged fragments of meadow habitats in relation to the realisation of various investments. Habitat corridors related to the functioning of the meadow ecosystems need to be identified. Special protection measures must be initiated to protect meadow ecosystems in areas in which the largest number of meadow ecosystems has recently been devastated. Grasslands provide a wide range of ecosystem services, ranging from forage production and carbon sequestration through recreation and tourism, up to maintaining a high level of biodiversity. They are also a component of the open landscape, which takes on special significance in the foothills, where everyone wants to admire the beautiful, not broken panoramas of the mountains.

There is need of establishing of plan of grassland protection at regional scale which will help nature conservationist in grassland management. Such system should be included both to protected areas protection plans and the first of all spatial planning documents of communes.

Factsheet: Case Study Karkonosze National Park

View to Karkonosze ridge and the foothill from Witosza (by D.Wojnarowicz)

Location (political):
South-West Poland, Lower Silesia

Covered larger Cities:
Jelenia Góra

Covered Landscapes:
Jelenia Góra Valley surrounded by Karkonosze (S), Rudawy Janowickie (E),Izerskie (W), Kaczawskie Mountains (N).

Area: 544,3 km²

Elevation: 350 - 1603 m a.s.l.

Ruin of Piast castle Chojnik in the Karkonosze National Park (by A.Raj)

Important Green Infrastructure Elements:

- Forests
- Bóbr river and tributaries
- Ponds
- Old routes with trees (alleys)
- Meadows
- Subalpine pastures
- Subalpine peat bogs

Overview map of the Study Giant Mountains (Karkonosze) National Park

Problems/GI Gaps:

- Lack of regional strategy about ecological connectivity among protected areas within the CSA.
- Lack of designated local ecological corridors in municipal planning documents.
- Lack of landscape protection strategy for the foothills of the Karkonosze Mountains which would be included into local planning documents.
- Disappearing meadows (due to rapid expanding built-up areas or abandonment of agricultural use)