



**EX-ANTE EVALUATION and
STRATEGIC
ENVIRONMENTAL
ASSESSMENT for the
Co-operation Programme
of the Danube
Transnational
Co-operation
Programme 2014-2020**

ENVIRONMENTAL REPORT



11th August 2014

Final Draft version

This project has been funded with support from SEE programme by the European Commission

This report is conducted within the framework of the Ex-ante evaluation and Strategic Environmental Assessment of the Co-operation Programme of the Danube Transnational Co-operation Programme 2014.

*The Strategic Environmental Assessment team –
Authors of the document:*

Mrs. Judit MOLNÁR

Certified Economist with legal specialization

Mrs. Zsuzsa DÉCSE

Environmental engineer

CONTENTS

1.	Non-technical summary - draft	5
2.	Introduction.....	15
3.	Background.....	18
3.1	Programme justification and purpose.....	18
3.1	Introduction and short summary of the programme.....	18
3.2	General and specific objectives, priority axis	19
3.3	Legislative, geographical and time frame	25
3.4	Environmental policy, legislative and planning framework	28
4.	Scope	37
4.1	Background of the assessment.....	37
4.2	Sources of information	38
4.3	Involvement of environmental bodies	38
4.4	Relationship with other parts of the planning process	39
4.5	Relationship with relevant plans and programmes	40
5.	Environmental baseline study	42
5.1	Environmental characteristics of the area likely to be effected	42
5.2	Current environmental conditions	46
6.	Approach and methodology.....	61
6.1	General approach.....	61
6.2	SEA Procedure and time schedule.....	63
6.3	Data basis, geographical or environmental mapping units.....	65
7.	Analysis of alternatives.....	67
8.	Impact identification and evaluation	72
8.1	A prognosis of the likely environmental effects and consequences of implementing the plan or program.....	72
8.2	Evaluation of the measures included in the co-operation programme.....	79
8.3	Environmental objectives.....	83
8.4	Environmental impact assessment.....	87
8.5	Description of the impacts and measures.....	92
9.	Monitoring indicators.....	100

10.	Conclusions and recommendations	105
11.	SEA Monitoring and follow up measures	108
12.	Transboundary impacts	110
13.	Technical appendices	112
	Annex 1: List of environmental authorities took part in the consultation.....	112
	ANNEX 2: Summary of consultation and comments received on the environmental report.....	116
14.	Other appendices	117
	ANNEX 3: The map of the total eligible area.....	117

1. NON-TECHNICAL SUMMARY - DRAFT

The non-technical summary will be finalised after the consultation process in the final version of the report.

Introduction

The requirement to carry out a Strategic Environmental Assessment (SEA) is based on the **Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment** adopted by the Council of the European Union on 27th June 2001 (further in the text – SEA Directive). The assessment object of the SEA is the Danube Transnational Co-operation Programme 2014. The SEA of the Co-operation Programme is planned and carried out in line with the relevant EC Directive and the national legislations.

The environmental report is based on the “Regional analysis of the Danube Region” (version dates on 10th March 2014), on the decision of the 7th meeting of the Danube Programming Committee in Ljubljana concerning Thematic Objectives and Investment Priorities (25-26th March 2014), on the decision of the 9th meeting of the Danube Programming Committee in Split (3-4th July 2014) and on the Draft Co-operation Programme Version 3.0 (22nd July 2014).

In this non-technical summary, we present an overview of the methodology and process of the strategic environmental assessment, highlighting the SEA’s main findings and recommendations. We also summarize how environmental aspects and results of the evaluation of potential transboundary effects have been taken into account and been integrated into the Programme.

Current state of the environment

The Danube Region covers 14 countries (9 EU countries: Austria, the Slovak Republic, the Czech Republic, Hungary, Slovenia, Romania, Bulgaria and Croatia as well as 5 non-EU-member countries: Serbia, Bosnia and Herzegovina, Montenegro and the Republic of Moldova) plus the ‘Danubian’ regions of Germany (Baden-Württemberg and Bavaria) and Ukraine (Chernivtsi, Ivano-Frankivsk Oblast, Bukovyna and Odessa Oblast).

Taking in consideration the main objectives of the programme and the characteristics of the region, most important issue of the area is water management, including flood risk prevention and the biodiversity conservation of the Danube river basin. The air and climate issue and the climate change is also a key issue. Water dependent sectors such as agriculture, forestry, navigation and water related energy production are likely to have troubles under the foreseen future conditions. The programming area needs improvement in the connectivity to TEN-T network also in order to create environmentally-friendly transport systems. Smart energy distribution networks need development on regional level

in a way to result in increasing energy efficiency and in better usage of potentials of renewable energy sources.

Programme objectives and priorities

The Co-operation Programme (CP) reinforces the targets of the Europe 2020, thus aims to contribute to the sustainable growth, to reduce energy consumption and to increase the use of renewable energy. These targets are well reflected under the 4 Priority axes (PA) and the programme's specific objectives (SO). 8 of formulated specific objectives will contribute to environmental (e.g.: transnational water management, restoration of ecological corridors) and sustainability (e.g.: green transportation, smart and clean energy networks, increasing renewable energy usage and effectiveness of energy use) issues, while 4 specific objectives refer to innovation, social responsibility and governance issues.

Priority axis 1: Innovative and socially responsible Danube region

Specific objective 1.1: Improve framework conditions and a balanced access to knowledge

Specific objective 1.2: Increase competences for business and social innovation

Priority axis 2: Environment and Culture responsible Danube region

Specific objective No 2.1: Sustainable use of natural and cultural heritage and resources

Specific objective No 2.2: Restoring and managing ecological corridors

Specific objective No 2.3: Transnational water management and flood risk prevention

Specific objective No 2.4: Improve the preparedness to disaster risk management

Priority axis 3: Better connected Danube region

Specific objective No 3.1: Environmentally-friendly and safe transport systems and balanced accessibility of urban and rural areas to TEN-T

Specific objective No 3.2: Improve energy security and energy efficiency

Priority axis 4: Well governed Danube region

Specific objective No 11: Increase institutional capacities to tackle major societal challenges

Specific objective No 12: Governance of the EUSDR

Methodology of impact assessment

The strategic environmental assessment process has been composed based on the following steps:

1. Identification of the environmental authorities in all partner states
2. Screening statement – decision on whether the SEA is required or not
3. Determination of the Scope and consultation on that

4. Preparation of the Environmental Report
5. Consultation on the Environmental Report with environmental authorities and the public
6. Decision on the transboundary effects
7. Integration of recommendations from the consultation process
8. Monitoring of the significant environmental impacts
9. Information about the Decision
10. Approval of the document

The choice of environmental issues is based on the SEA Directive. The environmental situation analysis is to be prepared regarding all environmental issues identified. The identified environmental issues are water (surface waters, ground water), soil and geological medium, biodiversity, flora, fauna, air and climate change, landscape and cultural heritage, population and human health, energy resources, mobility and transport.

The SEA process started in parallel with the elaboration of the Co-operation Programme. All partner states have been involved throughout the whole SEA process (see detailed list of the environmental authorities having been consulted with in chapter 4.3.). The requirement for the SEA in case of the Danube Transnational Co-operation Programme had been presented in the Scoping Report. (The environmental authorities had agreed on the fact that the programme will have a significant impact on the environment and the elaboration of the SEA is necessary.) The determination of the environmental report's scope and level of detail had been presented in the Scoping Report and a consultation with the environmental authorities took place. The content of the environmental report follows the requirements of Annex I of the SEA Directive. The SEA process and the environmental assessment have been carried out by the same team of experts in all partner states, Scoping Report and environmental report are joint single reports written in English language. At the beginning the SEA process the Programming Committee agreed on the availability of the documents to be consulted and the duration of the consultation periods.

ONEP's website constitutes the platform for the documents to be available: <https://www.nth.gov.hu/en/activities/european-territorial-cooperation/danube-transnational-programme-new-transnational-cooperation-programme-for-2014-2020>. Comments could have been sent to the following e-mail address: danube@nth.gov.hu. Non-reception of comments has been considered as approval of the document.

Consultation actions on the SEA:

- Consultation held in all countries
- Harvesting of comments
- Proposal on how to integrate the comments into the programme and reasoning of why certain comments were ignorable

- Amendment of the Programme: taking into account the results of the consultation process in all participating countries
- Drafting of the information note/Statement

The participation of the relevant stakeholders in the SEA process was of major importance, since environmental impacts are closely related to social, economic and cultural aspects. The inclusion of stakeholders in the SEA is vital in order to incorporate their perspectives and opinions. The consultation process gives opportunity to stakeholders (i.e. institutions, environmental agencies, NGOs, representatives of the public and those target groups who will potentially be affected by possible environmental impacts of the implementation of the Co-operation Programme) and to the public to express their opinion on the draft co-operation programme and draft environmental report.

Possible environmental impacts of the programme

The formulated specific objectives and actions of the Danube Transnational Co-operation Programme 2014 will contribute to environmental (e.g.: transnational water management, restoration of ecological corridors) and sustainability (e.g.: green transportation, smart and clean energy networks, increasing renewable energy usage and effectiveness of energy use) issues. These will lead to direct and most likely positive effects on the environment. While in case of priorities, such as innovation, social responsibility and governance long-term, indirect effects are to be foreseen, e.g. the spread of new environmental technologies, progress towards a more environmentally-conscious society or a more effective and conscious applying of sustainable development issues as an organizing principle of region's governance. The support of actions linked to the improvement of transport system and preparation of strategic investments in regional transport infrastructure, the encouragement of sustainable freight transport, waterway maintenance and management could lead to an increase in land take, fragmentation of habitats and additional impact through air and noise pollution on sensitive areas. Environmental awareness should be emphasized and is required to be taken into account during the implementation of these type of projects.

The impact matrix represents the test of the objectives of the programme against the SEA objectives, which shows the synergies and inconsistencies.



		Priorities and specific objectives																			
		PA1: Innovative and socially responsible Danube region		PA2: Environment and Culture responsible Danube region				PA3: Better connected Danube region		PA4: Well governed Danube region											
		SO1.1: Improve framework conditions and a balanced access to knowledge		SO1.2: Increase competencies for business and social innovation		SO2.1: Sustainable use of natural and cultural heritage and resources		SO2.2: Restoring and managing ecological corridors		SO2.3: Transnational water management and flood risk prevention		SO2.4: Preparedness for disaster risk management		SO3.1.: Environmentally-friendly and safe transport systems and balanced accessibility of urban and rural areas to TEN-T		SO3.2: Improve energy security and energy efficiency		SO4.1: Multilevel- and transnational governance		SO4.2: Governance of the EUSDR	
Water (surface waters, ground water)	Reducing organic, nutrient and hazardous substance pollution, prevention of accidental pollution incidents	L	0	0	K+	L+	L++	K+	L+	L++	L+										
	Improvement of the ecological and chemical status of surface waters and groundwater	L	0	L+	L++	L++	L+	L+	L-	L+	L+										
	Promoting sustainable use of water resources by appropriate controls over the abstraction of fresh surface water and groundwater	L	K	L+	L+	L++	L	L	L-	L+	L+										
	Prevention from and reduction of flood risks (Common approach in assessment and mapping of flood-risk)	L	K	L	L++	L++	L++	0	0	L+	L+										



	Improvement of waste water treatment and the reduction of nitrate pollution (e.g. nitrates from agricultural sources or industrial recharges)	L+	0	L	K	L	L+	0	0	L+	L+
Soil and geological medium	Prevention and reduction of soil contamination	L	0	L+	L+	L+	L++	L	L	L+	L+
	Help to maintain soil functions on the highest possible level (according to Thematic Strategy for Soil Protection (EC 2006a,b)	L	0	L+	L++	L++	L++	L-	L	L+	L+
	Promoting sustainable land-use (e.g. supporting of High Nature Value (HNV) farming, revitalization of brownfields, recultivation of old landfills)	L	0	L+	L++	L++	L++	L-	L-	L+	L+
	Reduce waste generation, increase waste recovery and recycling.	L	0	L	0	L	L+	L	L+	L+	L+
Biodiversity, flora, fauna,	Protection and promotion of natural habitats (e.g. within the NATURA 2000 network)	0	0	L+	L++	L++	L+	L-	L-	L+	L+
	Help to decrease the fragmentation of habitat or species (both aquatic and terrestrial), promoting green infrastructures, restoration of river continuity, wetland areas which are in direct contact with aquifers.	0	0	L+	L++	L+	0	L-	L-	L+	L+
	Help to stop and prevent the spread of invasive alien species.	0	0	L+	L++	L++	L	L-	0	L+	L+



	Promotion of common management of cross-border ecosystems and habitats	L	0	L+	L++	L++	L+	L-	L	L++	L+
Air, climate change	Reduction of air pollution (e.g. to prevent acidification, eutrophication and ground-level ozone pollution)	L	0	L	L	0	L++	L+	L+	L+	L+
	Reduction of the GHG emissions (min. 18 % below 1990 in the period 2013-2020).	L	0	L	L	0	L++	L++	L++	L+	L+
	Improving common risk assessment and management system for natural and industrial risk sites connected to climate change	L	0	L+	L++	L++	L++	L+	L+	L++	L+
	Help to decrease vulnerability to the climate change (e.g. sustainable water resource management, green infrastructures, use of drought tolerant plants)	L+	0	L++	L++	L++	L++	L+	L+	L+	L+
Landscape and cultural heritage	Cooperate towards the protection, management and planning for quality and diversity of European landscapes	0	0	L++	L++	L++	L++	L-	L	L+	L+



	Increasing awareness of the value of landscapes, their role and changes to them promoting training and education in landscape policy, protection, management and planning.	0	L+	L++	L++	L+	0	K	L	L+	L+
	Protection and preservation as well as sustainable management and planning of European cultural and natural landscape	0	0	L++	L+	K+	K+	L	L	L+	L+
	Promoting of sustainable use of material resources	L	0	L+	K+	L+	L+	L+	L+	L	L+
Population and human health	Prevention from environmental noise exposure	L	0	L+	L+	0	0	L-	L	L	L+
	Prevention and reduction of diseases and negative health impacts caused by environment-related threats	L+	0	L+	L+	L++	L+	L+	K	L+	L+
	Reduce existing disparities in accessibility to the essential public infrastructures (such as potable water network, sewage system including waste water treatment, as well as waste management).	0	L	0	0	L+	L	L+	L+	L+	L+



	Compliance of water supplies, compliance for drinking water from small supplies, and risk-based approach for more effective quality control (drinking water quality parameters and values) has to be promoted.	L	L	L+	L+	L++	L	L	L-	L+	L+
Energy resources	Improvement of energy efficiency (by 20% by 2020)	L+	0	0	0	K	K	L++	L++	L+	L+
	Increase of use of renewables (20 % of renewable energy by 2020)	L+	0	0	0	K	K	L++	L++	L+	L+
Mobility and transport	Reduction of carbon emissions deriving from transport (by 60 % by 2050)	0	0	0	0	K	K	L++	L+	L+	L+
	Promotion of environmentally sustainable transport (rail and inland navigation)	0	0	L+	L+	L	K	L++	L+	L	L+

Consultations

The consultations will be presented and finalised after the consultation process on the draft environmental report in the final version of the report.

Main results and recommendations

The presumably remarkable impacts of the interventions on the environment have been evaluated and as a result, the proposed measures have been presented as well. Relevant interventions need to be handled in a joint manner, with keeping an eye on the possible effects on the different intervention areas.

To achieve a higher degree of territorial integration, the Danube Transnational Cooperation Programme 2014 will act as a policy driver through the development and practical implementation of policy frameworks, tools and services and specific pilot investments. The

majority of the specific objectives refer to improvement of institutional and infrastructural framework conditions and policy tools, capacity building, coordination and planning, thus the possible environmental effects of the CP will primarily be of indirect nature. Special attention should be paid to objectives and actions linked to improvement of transport system and preparation of strategic investments in regional transport infrastructure, promotion of sustainable freight transport, waterway maintenance and management. Supporting of these actions could lead to an increase in land take, fragmentation of habitats and additional impact through air and noise pollution in sensitive areas. The effective consideration of environmental and possibly other sustainability aspects has to be ensured, also in case of energy planning and coordination actions, in order to avoid negative side-effects of growing green energy utilization (e.g. one-sided biomass production, adverse effects on hydromorphology, noise, negative impact on landscape). Supporting these settlements is suggested only under strict control of and cooperation with authorities.

Summary of how environmental considerations, the opinions expressed have been taken into consideration

The summary will be presented and finalised after the consultation process on the draft environmental report in the final version of the report.

2. INTRODUCTION

The characteristics of the Danube Transnational Co-operation Programme 2014 fulfil the categories and requirements which determine the necessity for the Strategic Environmental Assessment procedure, due to the following reasons:

- The Danube Transnational Co-operation Programme 2014 is a programme which is determined to be likely to have significant environmental effects according to Article 3(3) and 3(4) of the SEA Directive.
- The Danube Transnational Co-operation Programme 2014 is subject to preparation and adoption by national and regional authorities in the partner countries, and prepared for adoption through legislative procedure by the Governments.
- The Danube Transnational Co-operation Programme 2014 is required by legislative provisions.
- The Danube Transnational Co-operation Programme 2014 is financed by the European Union and by national Governments.
- The Danube Transnational Co-operation Programme 2014 is prepared for several sectors.
- The Danube Transnational Co-operation Programme 2014 sets a framework for future development consent of projects in Annexes I and II of the Directive EIA.

Purpose of the environmental report

The Strategic Environmental Assessment – based on the SEA Directive EU/2001/42 – aims at evaluating the impact of the Danube Transnational Co-operation Programme 2014-2020 on the environment; as such, being an integral part of the whole programming process. Therefore the SEA has to be carried out during the preparation of the programme and has to be completed before the approval and submission to the Commission in order to:

- **ensure the high level protection of the environment**
- **contribute to the integration of environmental aspects into the preparation and adoption of the Danube Programme with special regard to the promotion of sustainable development**

The provisions of the SEA report are referred to in Article 2, Article 5 and Annex I of the SEA Directive. The SEA methodology used in this assessment fully incorporates the requirements of the SEA Directive, methodological recommendations contained in the GRDP Handbook and the national SEA requirements.

The information to be provided under Article 5 (1) and 5 (2) and 5 (3), and Annex I and the display of those in the present report:

- an outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes > 3. Background, 3.4. Environmental policy, legislative and planning framework, 4.5. Relationship with relevant plans and programmes
- the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme > 5.2. Current environmental conditions, 8. Impact identification and evaluation
- the environmental characteristics of areas likely to be significantly affected > 5.1.Environmental characteristics of the area likely to be effected
- any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC > 5.2. Current environmental conditions
- the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation > 8. Impact identification and evaluation
- the likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors > 8. Impact identification and evaluation
- the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme > 9. Monitoring indicators, 10. Conclusions and recommendations
- an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information > 7. Analysis of alternatives, 6. Approach and methodology
- a description of the measures envisaged concerning monitoring in accordance with Article 10. > 10. Conclusions and recommendations, 9. Monitoring indicators, 11. SEA Monitoring and follow up measures
- the elaboration process of the environmental assessment, the description of the scoping report > 6.Approach and methodology, 4.1. Assessment background
- the consultation process with environmental authorities, consultation with the public, and the way the results of the consultations have been taken into

- consideration > 4.3. Involvement of environmental bodies, 6. Approach and methodology
- non-technical summary of the information provided under the above headings > 1. Non-technical summary

3. BACKGROUND

3.1 PROGRAMME JUSTIFICATION AND PURPOSE

The main mission of the territorial programmes of the European Union is to contribute to the EU 2020 Strategy for smart, sustainable and inclusive growth, to improve and strengthen territorial, economic and social cohesion and to contribute to territorial integration. “The Danube transnational programme is a financing instrument with a specific scope and an independent decision making body and supports the policy integration in the Danube area in selected fields under the CPR/ERDF regulation linked to the EUSDR strategy. The strategic vision is “policy integration” below the EU-level (not duplicating efforts in policy integration at the EU-level e.g. TEN-T) and above the national level in specific fields of action. Transnational projects should influence national / regional / local policies (“policy driver”)” (Draft Co-operation Programme Version 2.0, 22nd July 2014)

3.1 INTRODUCTION AND SHORT SUMMARY OF THE PROGRAMME

According to the Communication from the Commission to the European Parliament, The Council, the European Economic and Social Committee and the Committee of the Regions on the European Union Strategy for the Danube Region (COM (2010) 715 final, Brussels, 8th December 2010), the Danube Region faces major challenges and opportunities in the fields of mobility, energy, environment, special risks, socio-economic questions, security, serious and organised crime.

In order to achieve a higher degree of territorial integration, the Danube Transnational Co-operation Programme 2014 “will act as a policy driver and pioneer to tackle common challenges and needs in specific policy fields where transnational cooperation is expected to deliver good results through the development and practical implementation of policy frameworks, tools and services and concrete pilot investments” (Draft Co-operation Programme Version 2.0 22nd July 2014. chapter 1.1.1.1 Role of the Cooperation Programme and Mission).

The regional analysis gives an overview on the current situation of the Danube area, and identifies the real territorial needs of the region; on which the potential investments can be based. Thematic priorities of the Danube programme have been pre-selected in line with the relevant EC legislation, the national priorities of Partner States, and reflect the challenges and opportunities of the programme area. Chapter 1.1.1.4. Draft Co-operation Programme (Version 2.0, 22nd July 2014) presents the main challenges identified by the territorial

analysis. The Danube Transnational Co-operation Programme 2014 is planned to invest in the following thematic objectives:

TO1 Strengthening research, technological development and innovation

1b: promoting business investment in R&I, developing links and synergies between enterprises, research and development centres and the higher education sector, in particular promoting investment in product and service development, technology transfer, social innovation, eco-innovation, public service applications, demand stimulation, networking, clusters and open innovation through smart specialisation, and supporting technological and applied research, pilot lines, early product validation actions, advanced manufacturing capabilities and first production, in particular in key enabling technologies and diffusion of general purpose technologies

TO6 Preserving and protecting the environment and promoting resource efficiency

6c: conserving, protecting, promoting and developing natural and cultural heritage

6d: protecting and restoring biodiversity and soil and promoting ecosystem services, including through Natura 2000, and green infrastructure

TO7 Promoting sustainable transport and removing bottlenecks in key network infrastructure

7b: enhancing regional mobility by connecting secondary and tertiary nodes to TEN-T infrastructure, including multimodal nodes

7c: developing and improving environmentally-friendly (including low-noise) and low-carbon transport systems, including inland waterways and maritime transport, ports, multimodal links and airport infrastructure, in order to promote sustainable regional and local mobility

7e: improving energy efficiency and security of supply through the development of smart energy distribution, storage and transmission systems and through the integration of distributed generation from renewable sources

TO11 Enhancing the institutional capacity of public authorities and stakeholders and an efficient public administration

enhancing institutional capacity of public authorities and stakeholders and efficient public administration through actions to strengthen the institutional capacity and the efficiency of public administrations and public services related to the implementation of the ERDF, and in support of actions under the ESF to strengthen the institutional capacity and the efficiency of public administration

3.2 GENERAL AND SPECIFIC OBJECTIVES, PRIORITY AXIS

On the bases of the pre-selected thematic objectives and investment priorities of the programme the following Priority Axes, specific objectives and fields of actions are proposed in the Draft Co-operation Programme Version 2.0 22nd July 2014.

Priority Axes	Thematic Objectives	Investment Priorities	Specific objectives	Indicative fields of actions
PA1	TO 1 Research & Innovation	1b (6f)	<p>SP 1.1: Improve framework conditions and a balanced access to knowledge.</p>	<p>Contribute to building up excellent research infrastructure in the Danube region</p> <p>Support the improved coordination of cluster policies and cluster cooperation projects that lead to joint innovation and the development of joint smart specialisation approaches in technological and non-technological areas of strength</p> <p>Better access to innovation finance and support for innovative start-ups</p> <p>Moreover it is important to recognize innovative ideas with practical value and connect inventors with entrepreneurs experienced in business development</p> <p>Support collaborative research & innovation activities and competent networks between enterprises, R&D centres, education and higher education and the public sector to further develop innovative environmental technologies and common resource efficiency standards and benchmarks including energy efficiency technologies and cross-border water management and to enhance the commercial use of research results</p> <p>Establish transnational networks between appropriate partners to develop and implement products, services and models to meet social needs and create new social relationships or collaborations</p> <p>Cross-cutting issues:</p> <ul style="list-style-type: none"> Eco-innovation Social and service innovation
			<p>SP 1.2. Increase competences for business and social innovation</p>	<p>Mutual learning and collaboration to increase skills of employees in the business sector to better adapt to technological change and market requirement (e.g. innovative work-based learning)</p> <p>Motivate youth to engage in science and innovation and promoting youth</p>

				<p>entrepreneurship (“innovative youth”; empowering young people)</p> <p>Joint efforts to develop skills and knowledge for implementation of social innovation, innovative learning systems in the area of social services; for example a dual professional education in social professions, e.g. for elderly are and people with special needs and the consequent development of private care services with an entrepreneurial approach would be needed.</p> <p>Joint development of innovation related services and qualification offers; improvement of knowledge and skills for social innovation, e.g. enhance competences and entrepreneurship for social innovation in the fields of general interest such as migration, health and ageing, incubation, workplace innovation</p> <p>Build up cross-disciplinary networks and joint transnational actions among the training and the sustainable transport sector stakeholders (incl. administrations) for enhancing future needed job qualifications and competences for the logistics and water-borne sectors. Information and training actions for the transport, logistics and industry sectors about the potentials and benefits of sustainable modes of transport, such as multimodal-based Danube waterway transport.</p> <p>Improved competences for innovative entrepreneurship, improving the innovation culture and innovation management skills, capacity building for start ups</p> <p>Strengthen capacities of the so called supporting organizations in the field of innovation</p> <p>Raise awareness on learning systems for development of open innovation</p> <p>Policy learning and practical innovative approaches for dual education to reform the educational systems</p> <p>Building capacities of public administration for innovative public procurement. Improved public procurement practices can help foster market uptake of innovative products and services. At the same time these practices will raise the quality of public services in markets where the public sector is a significant</p>
--	--	--	--	---

				<p>purchaser. It is therefore important to mobilise public institutions to act as "launching customers" by promoting the use of innovation-friendly procurement practices.</p> <p>Create new and improve existing transnational educational and training networks in higher education (e.g. linking academic and business qualifications)</p>
PA2	TO 6 Environment, resource efficiency	6c	SP 2.1: Sustainable use of natural and cultural heritage and resources	<p>Sustainable tourism ("green tourism")</p> <p>Reduction of energy consumption and CO² emissions and resources</p> <p>Sustainable mobility management</p> <p>Education , training and capacity building</p> <p>Monitoring system</p> <p>Multiculturalism, cultural exchange</p> <p>Management and protection of natural resources</p> <p>Risk management plans</p>
		6d	SP 2.2: Restoring and managing ecological corridors	<p>Strategic frameworks and develop concrete solutions</p> <p>Improve the knowledge base and build up consistent and reliable data information sources</p> <p>Interlinking of natural habitats and wildlife corridors</p> <p>Integrated management of habitats, the protection of (flagship) species, and control of invasive species</p> <p>Integrated approach to better coordinate environmental interest with flood protection and the further expansion of inland navigation and transport infrastructure by establishing multi-sectoral partnerships</p> <p>Awareness-raising and environmental education</p>
		6d	SP 2.3: Transnational water management and flood risk prevention	<p>Raised awareness on the implementation of the most appropriate techniques and environmental practices including the further improvement of waste treatment efficiency and treatment level</p> <p>Better integrated policies for the reduction of the total amount of pollution (e.g. nutrients and hazardous substances) entering the Danube river basin</p> <p>Better integrated policies to prevent deterioration of groundwater quality and the concentrations of pollutants in groundwater</p> <p>In the field of agriculture increase of irrigation is necessary in order to improve local food supply, to cope with the effects of climate change and support the local</p>

				<p>economy</p> <p>More effective information sharing, mutual learning to sustainable approach for managing the risks of floods to protect human life and property, while encouraging conservation and improvement of water related ecosystems</p> <p>Building awareness for joint action and facilitate the exchange of good practice</p> <p>Development and practical implementation of education, training and capacity building to support sound water management.</p>
		6d (5b)	SP 2.4: Preparedness for disaster risk management	<p>Development of joint strategies and action plans for risk management</p> <p>Building up a common knowledge base and data observation capacities, and mechanisms for the exchange of information</p> <p>Joint development of tools</p> <p>Development and practical implementation of education, training and capacity building</p> <p>Unconventional explosive and incendiary devices as well as hazardous ammunition</p>
PA3	TO 7 Transport	7b	SP 3.1: Environmentally-friendly and safe transport system and balanced accessibility of urban and rural areas to TEN-T	<p>Integrated transport visions, comprehensive, mutually interconnected transport system</p> <p>Better integrated policies and practical solutions to further develop waterways</p> <p>Contribute to more effective information sharing, dialogue and integrated approaches to limit impacts of transport systems on the Danube ecosystem</p> <p>Multimodal hubs, terminals and links</p> <p>More safe transport network</p> <p>Organisation of public transport links in functional metropolitan areas and rural areas</p> <p>Bicycle routes</p>
		7c	SP 3.2: Improve energy security and energy efficiency	<p>Integration of different energy networks</p> <p>Danube Region Smart Grid Concept</p> <p>Regional energy planning and -coordination</p> <p>Spatial planning</p> <p>Human resource development and the exchange of related knowledge</p>
PA4	TO 11 Governance	11 acc. ERDF Reg.	SP 4.1.: Increase institutional capacities to tackle major social challenges	<p>Labour market policies</p> <p>Education systems and policies</p> <p>Demographic change and migration challenges</p> <p>Social inclusion policies</p>

			Participatory planning process and involvement of civil society Security issues, crime prevention and justice affairs Healthy local communities
		11 acc. ETC Reg. Article 7	SP 4.2: Governance of the EUSDR Establish a facility for direct support to EUSDR governance Establish a seed money/project development fund facility (Financing fund) Establish a EUSDR Focal Point.

3.3 LEGISLATIVE, GEOGRAPHICAL AND TIME FRAME

The assessment object of the SEA is the Danube Transnational Co-operation Programme 2014-2020. The SEA of the Programme is planned and carried out in line with the relevant EC Directive and the national legislations.

The Danube Programme

On 6th October 2011 the European Commission adopted a draft legislative package for the Cohesion Policy for the funding period 2014 – 2020. According to that, European Territorial Cooperation will be maintained and even reinforced as a separate cohesion goal. The Danube Programme is meant to be a new transnational programme, which is to contribute to the implementation of the Macro Regional Strategy for the Danube Region as well. The European Union Strategy for the Danube Region (EUSDR) adopted by the European Commission in December 2010 provides an overall framework for parts of the Central and South East Europe area aiming at fostering integration and integrative development.

The main legal frame for SEA in this programme context:

- European Directive 2001/42/EC on the assessment of effects of certain plans and programmes on the environment
- Convention on Environmental Impact Assessment in a trans boundary context (1991) (the Espoo Convention)
- Protocol on Strategic Environmental Assessment (2003)
- CPR Regulation No 1303/2013, especially Article 54 (Evaluation-General Provisions), Article 55 (Ex-ante evaluation)
- ETC Regulation No1299/2013, including Article 8 (Content adoption and amendment of cooperation programmes) and Article 16 (Indicators for the ETC goal);
- ERDF Regulation No1301/2013;
- EC Guidance document on ex-ante evaluation, - European Regional Development Fund European Social Fund and Cohesion Fund -January 2013;
- EC Guidance document on monitoring and evaluation - European Regional Development Fund and Cohesion Fund – Concepts and recommendations, January 2014;
- Report from the Commission to the Council the European Parliament, the European Economic and Social Committee and the Committee of the Regions on the application and effectiveness of the Directive on Strategic Environmental Assessment (Directive 2001/42/EC)

- EC Guidance on the implementation of the Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment.

The legal frame in the Danube Region partner countries:

Austria	<p>Protokoll über die strategische Umweltprüfung zum Übereinkommen über die Umweltverträglichkeitsprüfung im grenzüberschreitenden Rahmen</p> <p>Implementation of directive 2001/42 on the assessment of the effects of certain plans and programmes on the environment (Umsetzung der Richtlinie 2001/42/eg des Europäischen Parlaments und des Rates über die Prüfung der Umweltauswirkungen bestimmter Pläne und Programme)</p>
Slovak Republic	<p>the Act No. 24/2006 Coll. on environmental impact assessment and on amendments to certain acts applies, which entered into force on 1st February 2006. It regulates comprehensively the environmental impact assessment, strategic documents assessment and impact assessment of constructions, installations and other activities on the environment.</p>
Czech Republic	<p>Act No. 100/2001 Coll. on Environmental Impact Assessment and Amending Some Related Acts (Act on Environmental Impact Assessment), as amended by Act No. 93/2004 Coll.</p>
Germany	<p>Act on Public Participation in Environmental Issues according to EC guideline 2003/35/EG (Gesetz über die Öffentlichkeitsbeteiligung in Umweltangelegenheiten nach der EG-Richtlinie 2003/35/EG)</p> <p>Act on Amending Provisions on Legal Remedies in Environmental Issues according to EC guideline 2003/35/EG (Gesetz über ergänzende Vorschriften zu Rechtsbehelfen in Umweltangelegenheiten nach der EG-Richtlinie 2003/35/EG Umwelt-Rechtsbehelfsgesetz – Umweg)</p>
Hungary	<p>2/2005 (I.11) Government Decision on the SEA and the 100/2014. (III.25.) Government Decision which modifies the 2/2005 (I.11) Government Decision</p>
Slovenia	<p>Decree laying down the content of environmental report</p>



	and on detailed procedure for the assessment of the effects on certain plans and programmes on the environment (Official Journal of RS 73/2005)
Romania	the Government Decision no.1076/8.07.2004. for setting up the environmental assessment procedure of certain plans and programmes “Manual on the completion of the environmental assessment for plans and programmes” – 2006, approved by Ministerial Order no. 117/2006. (other relevant normative acts: OM 480/2006, OM 995/2006)
Ukraine	Law on Environment Protection
Bulgaria	Regulation on the terms and procedure for Environmental Assessment of plans and programmes (Загл. ИЗМ. – ДВ, 6р. 3 от 2006 г.) Law for Environmental Protection (LEP) – regarding the minimum required content of the environmental report.
Croatia	Law on Environmental Protection (OG, No 80/13) Regulation on strategic environmental assessment of plans and programmes (OG, No 64/08) Ordinance on the committee for strategic assessment (OG, No 70/08)
Serbia	Law on Strategic Environmental Impact Assessment (“Official Gazette of RS” no. 135/2004 and 88/2010)
Bosnia and Herzegovina	A separate legal act concerning SEA does not exist in Bosnia and Herzegovina yet, New Law on Environment Protection of Federation of B&H that is in parliamentary procedure of adoption.
Montenegro	Law on Strategic Environmental Assessment (Official Gazette of Montenegro, no. 80/05, 59/11); Regulation on the Organization and Operation of Public Administration (“Off. Gazette of Montenegro”, no. 05/12, 20/13) Article 46 line 14
Republic of Moldova	the law on the environmental assessment and environmental impact assessment, Nr. 851

din 29.05.1996

The geographic frame for SEA:

The Danube Region covers 14 countries (9 EU countries: Austria, the Slovak Republic, the Czech Republic, Hungary, Slovenia, Romania, Bulgaria and Croatia as well as 5 non-EU-member countries: Serbia, Bosnia and Herzegovina, Montenegro and the Republic of Moldova) plus the ‘Danubian’ regions of Germany (Baden-Württemberg and Bavaria) and Ukraine (Chernivtsi, Ivano-Frankivsk Oblast, Bukovyna and Odessa Oblast).

The map of the total eligible area has been presented in Annex 3.

Time frame for SEA:

The time frame of the SEA - for those development trends related to the expected state of the environment and the possible impacts on environmental issues - is the programming period 2014-2020 plus two years.

3.4 ENVIRONMENTAL POLICY, LEGISLATIVE AND PLANNING FRAMEWORK

The SEA analysis has identified the key policies and legislations in terms of the environment linkages with the Danube Transnational Co-operation Programme 2014.

The list of relevant international legal and policy frameworks, by which the Danube Transnational Co-operation Programme may be influenced, is presented in the following table.

Protected good	Relevant EU Legislation and Policies
Water (surface waters, ground water)	Water Framework Directive (2000/60/EC), The blueprint to Safeguard Europe's Water resources - Communication from the Commission (COM(2012)673 Convention on Cooperation for the Protection and Sustainable use of the Danube River Nitrates Directive (91/676/EEC), Urban Waste Water Treatment Directive (91/271/EEC), Directive 2010/75/EC on industrial emissions (IPPC) Thematic Strategy on the Sustainable Use of Natural Resources (COM (2005) 670) Stockholm Convention on POPs Convention on Environmental Impact Assessment in a trans boundary context (1991) (the Espoo Convention) Floods Directive (2007/60/EC) ICPDR Strategy on Adaptation to Climate Change(2013)



	<p>The ICPDR Action Programme on Sustainable Flood Protection The ICPDR Danube River Basin District Management Plan “Joint Statement on Inland Navigation and Environment, 2007” (http://www.icpdr.org/main/activities-projects/joint-statement-navigation-environment) “Guiding Principles on Sustainable Hydropower, 2013” (http://www.icpdr.org/main/activities-projects/hydropower) 2009 Review of the EU Sustainable Development Strategy COM (2009) 400 Green Infrastructure (GI) (COM(2013) 249 final) 7th Environmental Action Programme (EAP).</p>
<p>Soil and geological medium</p>	<p>Soil Thematic Strategy (COM (2006) 231) Proposal for a Soil Framework Directive (COM (2006) 232) Thematic Strategy on the Sustainable Use of Natural Resources (COM (2005) 670) Directive 2008/98/EC on waste Landfill of waste (99/31/EC) Hazardous Waste (91/689/EEC) Mining Waste Directive (2006/21/EC) Stockholm Convention on POPs The Basle Convention Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste The Council Decision 2003/33 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 99/31/EC Directive 2010/75/EC on industrial emissions (IPPC) The Seveso III Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances Waste Framework Directive (2008/98/EC) 7th Environmental Action Programme The Council Decision 2003/33</p>
<p>Biodiversity, flora, fauna</p>	<p>Habitats (92/43/EC) Birds (2009/147/EC) EU 2020 Biodiversity Strategy UN Convention on Biological Diversity Ramsar Convention IUCN Global Species Programme 2006/44/EC Fish Directive 2006/113/EC Shellfish Directive 2009 Review of the EU Sustainable Development Strategy COM (2009) 400 Water Framework Directive (2000/60/EC), The blueprint to Safeguard Europe's Water resources - Communication from the Commission (COM(2012)673 Green Infrastructure (GI) (COM(2013) 249 final) EU Forest Action Plan 2007-2011 (COM(2006) 302) The "Sturgeon 2020", a strategy and program for the protection and rehabilitation of the Danube sturgeons (2013)</p>



	<p>Bern Convention</p> <p>Bonn Convention</p>
Air, climate change	<p>EU Directive on ambient air quality and cleaner air for Europe (2008/50/EC)</p> <p>Thematic Strategy on Air Pollution (COM (2005) 446)*</p> <p>EU Strategy on Climate Change” Winning the battle against global climate change” (COM (2005) 35)</p> <p>ICPDR Strategy on Adaptation to Climate Change(2013)</p> <p>Kyoto II on basis of UN Kyoto Protocol on Climate Change 1998</p> <p>Directive 2010/75/EC on industrial emissions (IPPC, LCP)</p> <p>Stockholm Convention on POPs</p> <p>European Climate Change Programme</p> <p>Convention on Long-range Transboundary Air Pollution (CLRTAP)</p> <p>Directive 2001/81/EC of the European Parliament and of the Council of 23 October 2001 on national emission ceilings for certain atmospheric pollutants (Official Journal of the European Union L 309, 27.11.2001.)</p>
Landscape and cultural heritage	<p>European Landscape Convention 2000</p> <p>UNESCO World Cultural and Natural Heritage Convention 1972</p> <p>Green Infrastructure - Enhancing Europe’s Natural Capital (GI) (COM(2013) 249 final</p> <p>EU Thematic Strategy on the Urban Environment (COM (2005) 718)</p> <p>Waste Framework Directive (2008/98/EC)</p>
Population and human health	<p>Environmental Noise Directive (END) (2002/49/EC)</p> <p>WHO Night Noise Guidelines for Europe (2009)</p> <p>EU Health for Growth Programme (2014-2020) (COM (2011) 709)</p> <p>EU Health Strategy "Together for Health" (2008-2013)*</p> <p>WHO Parma Declaration on Environment and Health 2010</p> <p>7th Environmental Action Programme</p>
Energy resources	<p>Energy Efficiency Directive (2012/27/EU)</p> <p>Renewable Energy Directive (RED) (2009/28/EC)</p> <p>Energy Efficiency Action Plan (2011)</p> <p>EU Climate and Energy Package 2020</p> <p>7th Environmental Action Programme</p> <p>“Guiding Principles on Sustainable Hydropower, 2013” http://www.icpdr.org/main/activities-projects/hydropower</p>
Mobility and transport	<p>Climate and Energy Package 2020</p> <p>White paper 2011 - Roadmap to a Single European Transport Area</p> <p>“Joint Statement on Inland Navigation and Environment, 2007” http://www.icpdr.org/main/activities-projects/joint-statement-navigation-environment</p>

The environmental objectives, and the proposed indicators, which are relevant for the programme and the programme region, are described in the above listed protocols, strategies and legislatives (as also presented in the Scoping Report). They present the higher

aim to be reached by each action affecting the environmental issues that are described in this report.

Giving a complete summary of international documents containing objectives relevant for the programme area and objectives valid in the European Union is not possible within this SEA Report. However, some of the most important policies and directives are the following and the proposed priorities of the programme are contributing to the environmental goals:

The 7th Environment Action Programme (EAP)

EAP guides European environment policy until 2020. In order to give more long-term directions it envisages where it wants the Union to be by 2050. It identifies three key objectives:

- to protect, conserve and enhance the Union's natural capital
- to turn the Union into a resource-efficient, green, and competitive low-carbon economy
- to safeguard the Union's citizens from environment-related pressures and risks to health and wellbeing

EU strategy for the Danube region (EUSDR, 2011)

The EUSDR intends to develop coordinated policies and actions in the area of the river basin, reinforcing the commitments of Europe 2020 strategy towards the smart, sustainable and inclusive growth based on four pillars and eleven priority areas. These shall tackle key issues as mobility, energy, biodiversity, socio-economic development or safety. In line with the goals of territorial cooperation objective, the Strategy is not focusing on funding, but rather on enhancing closer cooperation within the concerned territory. Aims related to subject of environment protection: protecting the environment in the Danube region and preserve biodiversity and landscapes.

The Water Framework Directive 2000/60/EC (WFD)

The WFD establishes a legal framework to protect and restore the water environment and to ensure the long-term sustainable use of water. Although climate change is not explicitly included in the text of the WFD, the step-wise and cyclical approach of the WFD river basin management process makes it well-suited to handle climate change.

The Directive aims at different aspects including the prevention and reduction of water pollution, the promotion of sustainable water resources use and the contribution to

mitigating the effects of floods and droughts. Furthermore, it calls for the improvement of the ecological and chemical state of water bodies in order to achieve a “good” overall water quality status by 2015.

Convention on Cooperation for the Protection and Sustainable use of the Danube River

The “Convention on Cooperation for the Protection and Sustainable use of the Danube River (Danube River Protection Convention)” is the legal basis of the International Commission for the Protection of the Danube River (ICPDR). The ICPDR is both a forum to allow its contracting parties to coordinate the implementation of the convention and a platform to review the progress they make. The key objectives of the ICPDR include the following:

- Ensure sustainable water management
- Ensure conservation, improvement and rational use of surface waters and ground water
- Control pollution and reduce inputs of nutrients and hazardous substances
- Control floods and ice hazards.

The ICPDR also facilitates cooperation between the Danube countries and the Black Sea region in issues requiring coordination, cooperates with other international organisations where appropriate, and addresses new challenges related to water management as they emerge. This way Non-EU-Member States in the Danube Basin are also taking part in the coordination and making all efforts to implement the water-related EU-directives (Water Framework Directive and the Flood Directive).

Thematic Strategy on the sustainable use of natural resources COM (2005) 670

The aim of the strategy is to reduce the negative environmental impact of the use of natural resources (depletion of resources and pollution) while meeting the economic growth and employment objectives of the Lisbon European Council. All resource-consuming sectors are taken into account with a view to improving resource yield, reducing the environmental impact of resource use and replacing excessively polluting resources with alternatives. The strategy aims to reduce the pressures on the environment at each stage of the life cycle of resources, which embraces their extraction or harvesting, use and ultimate disposal. It therefore seeks to integrate this concept of life cycle and impact of resources into the associated policies.

Directive 2007/60/EC on the assessment and management of flood risks

This Directive requires Member States to evaluate whether water courses and coast lines are at risk of flood, to map the extent of flood and the volume of assets and humans being at

risk in these areas, as well as to take adequate and coordinated measures to reduce risk. This Directive reinforces the rights of the public to access this information and to have a say in the planning process also.

Basel Convention

The overarching objective of the Basel Convention is to protect human health and the environment against the adverse effects of hazardous wastes. Its scope of application covers a wide range of wastes defined as “hazardous wastes” based on their origin and/or composition and their characteristics, as well as “other wastes” (household waste and incinerator ash). The provisions of the Convention centre around the following principal aims: (i) the reduction of hazardous waste generation and the promotion of environmentally sound management of hazardous wastes, wherever the place of disposal; (ii) the restriction of transboundary movements of hazardous wastes except where it is perceived to be in accordance with the principles of environmentally sound management; and (iii) a regulatory system applying to cases where transboundary movements are permissible.

EU biodiversity strategy 2020, (COM(2011)0244).

The strategy aims at: halt loss of biodiversity and decline of ecosystems and their services within EU, raise EU contribution to international protection of biodiversity. The Strategy follows three priorities, which were adopted in June 2010:

- Smart growth: developing an economy based on knowledge and innovation.
- Sustainable growth: promoting a more resource efficient, greener and more competitive economy.
- Inclusive growth: fostering a high employment economy delivering social and territorial cohesion.

Natura 2000: European network of more than 26,000 protected sites (bird and habitats)

Aims: implementation of CBD; ensure the survival of Europe’s most valuable species and habitats

The "Sturgeon 2020", a strategy and program for the protection and rehabilitation of the Danube sturgeons

The program aims to foster sturgeon conservation in the Danube River Basin and the Black Sea, according to the EUSDR target “to ensure viable populations of sturgeon and other

indigenous fish species by 2020". For this purpose, the Program "Sturgeon 2020" was developed (based on the Sturgeon Action Plan) as a framework for action. This program combines environmental aspects with social and economic measures aiming not only to bring benefit for sturgeons, but also to contribute to the social stability of the Danube Region by improving the economic situation of stakeholders being affected by the conservation measures in the Middle and Lower Danube.

The blueprint to Safeguard Europe's Water resources

The EU Blueprint 2012 review is an important opportunity to improve the implementation of the Water Framework Directive (WFD). The Blueprint to safeguard Europe's waters Consultation identifies gaps and possible actions to improve and accelerate implementation, including water-related green infrastructure. The Blueprint contributes significantly to help meet water-related policy targets in Europe (and other policy objectives such as the Floods Directive, Natura 2000 and EU 2020 Biodiversity Plan).

Strategy on Climate Change

The strategy was adopted in the light of the Kyoto Protocol (reduction of GHG emission by at least 18% below the emission values recorded in 1990) and includes medium and long term strategies. First and foremost, it aims to reduce the temperature increase within the EU territory.

UNESCO World Cultural and Natural Heritage Convention (1972)

The convention is the main policy for the protection and preservation of cultural and natural heritage at international level. It has initiated the World Heritage Programme, which promotes the conservation of several tangible and intangible significant sites.

EUROPEAN LANDSCAPE Convention

The Convention aims to encourage public authorities to adopt policies and measures at local, regional, national and international level for protecting, managing and planning landscapes throughout Europe. It covers all landscapes, both outstanding and ordinary, that determine the quality of people's living environment. The text provides for a flexible approach to landscapes whose specific features call for various types of action, ranging from strict conservation through protection, management and improvement to actual creation.

EU Health for Growth Programme (2014-2020)

The programme expresses the need to protect human health by developing strategies aimed at tackling health risks and their determining factors, including the environment.

Climate and Energy Package 2020

The climate and energy package is a set of binding legislation which aims to ensure the European Union meets its ambitious climate and energy targets for 2020. These targets, known as the "20-20-20" targets, set three key objectives for 2020:

- A 20% reduction in EU greenhouse gas emissions from 1990 levels;
- Raising the share of EU energy consumption produced from renewable resources to 20%;
- A 20% improvement in the EU's energy efficiency.

White paper 2011 - Roadmap to a Single European Transport Area

The European Commission adopted a roadmap of 40 concrete initiatives for the next decade to build a competitive transport system that will increase mobility, remove major barriers in key areas and fuel growth and employment. At the same time, the proposals will dramatically reduce Europe's dependence on imported oil and cut carbon emissions in transport by 60% by 2050. By 2050, key goals will include:

- No more conventionally-fuelled cars in cities
- 40% use of sustainable low carbon fuels in aviation; at least 40% cut in shipping emissions
- A 50% shift of medium distance intercity passenger and freight journeys from road to rail and waterborne transport
- All of which will contribute to a 60% cut in transport emissions by the middle of the century

"Joint Statement on Inland Navigation and Environment, 2007"

The Joint Statement initiative was launched in 2007 by the International Commission for the Protection of the Danube River (ICPDR) in cooperation with the Danube Commission and the International Sava Commission.

The Joint Statement is a guiding document, which summarises principles and criteria for environmentally sustainable inland navigation on the Danube and its tributaries, including



the maintenance of existing waterways and the development of future waterway infrastructure.

4. SCOPE

4.1 BACKGROUND OF THE ASSESSMENT

As the first main step of the assessment process the context and the objectives have been set and the baseline has been established. The scope of the assessment is to identify the main areas of intervention, determine the current state of the environment and the objectives to be achieved, summarize the relevant regulatory background and the planned methodology. The Scoping Report has set the framework of the environmental assessment, and also contained the statement on screening. The Scoping Report provided the necessary background information. The content of the Scoping Report was the following:

1. Introduction
 2. Assessment framework and geographical area
 - 2.1. The assessment framework
 - 2.2. DANUBE Programme Strategy
 - 2.3. Objectives and areas of interventions
 - 2.4. The outline of the programme area from environmental point of view – Characteristics of the affected territory
 - 2.5. Identified environmental problems
 - 2.6. Relevant plans, programmes and environmental protection objectives
 3. Determining the likely significance of effects
 4. Defining the scope of the assessment
 - 4.1. SEA objectives
 - 4.2. Baseline information
 5. Methods of the assessment
 6. SEA Procedure
 - 6.1. Consultations
- ANNEX 1. Proposed structure of the SEA Report
- ANNEX 2. List of relevant national and international legal and policy framework including guiding questions
- ANNEX 3. Consultation and comments received on the scoping report
- ANNEX 4. List of environmental authorities took part in the consultation

The consultation on the draft Scoping Report - including the determination that the programme requires a SEA - took place between the 19th of May 2014 and the 30th of June 2014. All the environmental authorities required by the national legislations were invited to review the draft scoping report. ANNEX 4 of the final Scoping Report listed the environmental authorities taking part in the consultation. These authorities were provided with an official invitation letter in national languages, the full-length Scoping Report and an executive summary of the Report. Also, the full-length draft Scoping Report was published on ONEP's website: <https://www.nth.gov.hu/en/activities/european-territorial->

cooperation/danube-transnational-programme-new-transnational-cooperation-programme-for-2014-2020. The invited public authorities (in case it was necessary) placed the announcement and information on the required official website in the respected partner countries as well.)

The environmental authorities have agreed on the fact that the programme will have a significant impact on the environment and the elaboration of the SEA process is necessary. All harvested comments have been processed, and an overview on the integration of the received comments has been incorporated into the final Scoping Report, which shows how each feedback had been taken into account. The required modifications and supplements have also been incorporated into the final Scoping Report; the scope of the assessment has been adjusted according to the comments. The scope of the SEA was approved by all environmental authorities giving the legal base of the SEA process. It contains all information required by legislation.

4.2 SOURCES OF INFORMATION

The environmental report is based on the “Regional analysis of the Danube Region” (version dates on 10th March 2014), on the decision of the 7th meeting of the Danube Programming Committee in Ljubljana concerning Thematic Objectives and Investment Priorities (25-26th March 2014), on the decision of the 9th meeting of the Danube Programming Committee in Split (3-4th July 2014) and on the Draft Co-operation Programme Version 3.0 (22nd July 2014).

4.3 INVOLVEMENT OF ENVIRONMENTAL BODIES

Besides the future Managing Authority, all partner states of the Danube Transnational Co-operation Programme 2014-2020 have been involved in the SEA process. The list of invited authorities is based on relevant national legislations and the decisions on the partner states. The list of authorities involved is presented in Annex 1. The relevant environmental authorities have been identified in close co-operation with the National Authorities of the partner states.

Joint reports (Scoping Report and draft environmental report) have been prepared. The draft reports have been published on the website of the programme and those were submitted to the indentified environmental authorities. (The website give the possibility to the interested public to express their opinions on the draft co-operation programme and the draft environmental report.)

In this way two consultation actions were planned with the environmental bodies. First, the environmental bodies were invited to express their opinions on the Scoping Report – including the Screening Statement. The comments and suggestions received in this consultation phase were taken into consideration in the final Scoping Report, in the elaboration of the environmental report and in the preparation of the Co-operation programme. See details on Scoping Report in Chapter 4.1.

The Final Environmental Report is also available for consultation in parallel with the draft Co-operation Programme. At the end of consultation, comments will be collected and explanation shall be given on how the Environmental Report and the result of the consultation have been taken into account by the Final Co-operational Programme. (The website gives the possibility to the public to express their opinions on the draft Co-operational Programme and the Environmental Report.)

This chapter will be supplemented and finalised after the consultation process on the draft environmental report.

4.4 RELATIONSHIP WITH OTHER PARTS OF THE PLANNING PROCESS

Apart from the legal and sectorial point of view of the SEA approach, it was required to pay attention on the interlinking of

- the programming process;
- the findings and suggestions of the strategic environmental assessment;
- ex-ante evaluation and
- partnership consultations.

The SEA process of the Danube Transnational Co-operation Programme 2014-2020 started in parallel with the elaboration of the programme document, and according to the planned timing, it will be completed before its adoption. During the process, there was close co-operation with the programming activities. The Screening Statement and the scope were elaborated at the earliest possible stage in order to ensure the environmental effects of implementing the programme will be taken into account during its preparation and before its adoption. Close co-operation in the phase of the elaboration of the environmental report will also be ensured.

This chapter will be finalised after the consultation process on the draft environmental report.

4.5 RELATIONSHIP WITH RELEVANT PLANS AND PROGRAMMES

Consistency with EUROPE 2020

The Co-operation Programme reinforces the targets of the Europe 2020. The Co-operation Programme contributes to the sustainable growth, aims to reduce energy consumption and to increase the use of renewable energy. **The following thematic objectives and investment priorities contribute to the Climate change and energy sustainability targets of the EU by 2020.**

EU2020 target	Envisaged thematic objectives and investment priorities
greenhouse gas emissions 20% (or even 30%, if the conditions are good) lower than in 1990	<p>TO7 Promoting sustainable transport and removing bottlenecks in key network infrastructure</p> <p>7b: enhancing regional mobility by connecting secondary and tertiary nodes to TEN-T infrastructure, including multimodal nodes</p> <p>7c: developing and improving environmentally-friendly (including low-noise) and low-carbon transport systems, including inland waterways and maritime transport, ports, multimodal links and airport infrastructure, in order to promote sustainable regional and local mobility</p>
20% of energy from renewables	<p>TO7 Promoting sustainable transport and removing bottlenecks in key network infrastructure</p> <p>7e: improving energy efficiency and security of supply through the development of smart energy distribution, storage and transmission systems and through the integration of distributed generation from renewable sources</p>
20% increase in energy efficiency	<p>TO6 Preserving and protecting the environment and promoting resource efficiency</p> <p>6f: promoting innovative technologies to improve environmental protection and resource efficiency in the waste sector, water sector and with regard to soil, or to reduce air pollution</p> <p>6d: protecting and restoring biodiversity and soil and promoting ecosystem services, including through Natura 2000, and green infrastructure</p> <p>TO7 Promoting sustainable transport and removing bottlenecks in key network infrastructure</p>

	7e: improving energy efficiency and security of supply through the development of smart energy distribution, storage and transmission systems and through the integration of distributed generation from renewable sources
--	--

The Co-operation Programme also contributes to EU transport policies, to the TEN-T with its TO7 Promoting sustainable transport and removing bottlenecks in key network infrastructure.

5. ENVIRONMENTAL BASELINE STUDY

5.1 ENVIRONMENTAL CHARACTERISTICS OF THE AREA LIKELY TO BE EFFECTED

Bio-geographical and ecological regions

The Danube River Basin belongs to six biogeographical regions according to the different climate and altitude conditions. The continental biogeographical region covers the Black Forest, the Bohemian Forest, the Romanian Plain, the North-Eastern ranges of the Dinaric Alps, the low-lying parts of the Balkan Mountains, the Transylvanian Plateau and the Moldavian Plateau, ranges of the Carpathians, the Rhodope, the Alps and the Dinaric Alps, the Pannonian Basin dominated by the Great Hungarian Plain. The Mediterranean biogeographical region is situated along the coastline of the Adriatic Sea with various topographical features. In the Eastern part of the Danube Delta, in the wider environment of the Danube region, the Steppic biogeographical region is situated. The smallest biogeographical region of the examined area is a narrow region along the coast of the Black Sea.

Main habitat types of the continental area are the agricultural and cultivated habitats (51,46 %) followed by the woodland and forest habitats (41.52%), while in the coastal region heathland and scrub habitats are the typical land cover. The agricultural utilisation is typical of the fertile lowland areas along the rivers, in higher area forestry utilisation and semi-natural areas are characteristic. The basin of the Danube is also home to the longest marshland of the continent. Large area of reeds grow in the Danube delta, these reedbeds in the Danube are among the largest in the world. Stipa grass can be found in the sandy areas on the banks of Danube. The Letea forest along the river contains several other plants. Many different species of water lilies grow in the river.

The fauna of the region is also very rich. Regarding the number of species, birds are the most widespread in all of the biogeographical regions followed by the mammals. The highly diverse ornithological fauna of the Danube Basin and especially its delta, counts over 250 species of birds. Some 110 species of fish are to be found in the Danube River as well as in the hundreds of lakes, streams and channels in the delta. Danube Delta represents a very favourable place for the development of highly diverse flora and fauna, unique in Europe, with numerous rare species. It hosts 23 natural ecosystems, but due to the extent of wetlands the aquatic environment is prevalent; the terrestrial environment is also present on the higher grounds of the continental levees, where xerophile ecosystems have developed.

Biodiversity

Aquatic biodiversity is facing an increasing threat. Invasive alien species are negatively affecting the natural fauna and flora in many rivers and lakes. Also, nutrients flowing off the land, as well as poor land use and land management like the straightening of rivers, detachment of floodplains and fragmentation of habitats through dams and weirs increase the degradation of habitats and loss of species. Fishery throughout the whole Danube River Basin is not significant compared to the European scale, although it has a relatively dominant role at local level. Also angling becomes more and more important in the region. In case of some special species, overfishing is a serious risk. The Danube River and the Black Sea once were hotspots of sturgeon biodiversity as six native species were documented there in the past. Today, one species is lost and the remaining five are threatened with extinction. Due to the special life-cycle (migratory fish) and being targeted by illegal fishery (as sources of caviar), sturgeons are extremely endangered.

Among the 1079 pieces of Natura 2000 areas (156,361 km²) of the EU member states situated in the Danube River Basin, 716 (73,023 km²) were assigned according to the Habitats Directive, and further 294 (73,872 km²) according to the Birds Directive. 44 protected areas (5,810 km²) were established for the purpose of bird protection and the protection of habitats. Slovenia, Bulgaria, Slovakia and Hungary assigned Natura 2000 areas in a ratio above the EU27 average compared to their own areas. Based on the implementing indicator of the Habitats Directive only Germany, Bulgaria and Austria are equal to or above the EU27 average.

The planned forestry and the illegal logging may represent a serious risk to biodiversity in this region as well as increase the risk of soil erosion and forest fires. The extent of the illegal logging in Serbia, Montenegro and Moldova can even reach 10-35% of the total forest utilisation. The change in land-cover and the growing of artificial surfaces increase the fragmentation of the habitats. To lower biodiversity risks, proportion of grasslands, croplands and pastures, organic farming should be increased in the agricultural land use.

With regard to the global ecological indicators, the ecological balance is negative in all relevant countries, which means that the countries utilise their environmental resources in a higher ratio than they are allowed to. However, the ecological balance of the region is slightly better than the European average.

Soil and geological medium

In the last decades, the change in the land-cover of the Danube Region resulted in a very high proportion of artificial areas (above 5% with except for Slovenia) thus increasing the fragmentation of the habitats.

According to estimations, Europe loses between 8 and 10 km² of fertile soil per day due to urbanisation and industrialisation, which means irreversible soil loss and soil degradation. Though the planned forestry is sustainable in the region, Illegal logging may represent a serious risk to biodiversity as well as increase the risk of soil erosion and forest fires.

Pollution from domestic, agricultural and industrial sources is still a major concern, either directly through discharges (effluents) or indirectly from the spread of nitrogen fertilisers and pesticides or through leaching of old landfills or industrial sites. Diffuse sources are having an increasing impact on soil.

Decrease in groundwater levels can also cause soil quality problems, where there is a risk of over-exploitation of water (e.g. irrigated agricultural area, mining, thermal water use)

Waste treatment is still a major contamination risk factor in some parts of the region. Although there is a significant reduction in the quantity of waste going to disposal, land filling is still the predominant waste treatment option in many countries.

Hydrography

From hydrographical point of view most important area is the Danube catchment area (which is 801.463 km².) with the major tributaries: Inn (515 km), Morava (329 km), Drava (720 km), Tisza (966 km), Sava (861 km), Great Morava (430 km), Iskar (368 km), Siret (559 km) and Prut (950 km). Important lakes having a territory higher than 100 km²: Lake Balaton, Lake Neusiedl, Yalpug-Kugurlui Lake System, Razim-Sinoe Lake System.

Many Danubian tributaries are important rivers in their own right, navigable by barges and other shallow-draught boats. There are three artificial waterways built on the Danube: the Danube–Tisa–Danube Canal (DTD) in the Banat and Bačka regions (Vojvodina, northern province of Serbia); the 64km Danube–Black Sea Canal (between Cernavodă and Constanța in Romania) and the Rhine-Main-Danube Canal (about 171 km), linking the North Sea to the Black Sea. In recent decades, many dams and locks were built what interrupts the natural flow of the river, problems from pollution endanger its rich biodiversity and extensive land changes cause floods and droughts in many places. Common water management and ensuring an adequate water quality are extremely important in case of cross-border rivers. Management plans regarding the catchment areas have been performed for the full length of the Danube as well as the larger cross-border catchment areas of Tisza, Sava, Drava, Danube Delta and the Black Sea. The common water management can contribute to flood mitigation; also water pollution can be decreased or avoided.

In the programme region, there are 11 fairly large, cross-border water supplies. Most of the groundwater and drinking water supplies are in good conditions. However, the drinking water supplies situated in Southern Hungary are in bad conditions and are endangered by high arsenic and nitric concentration.

Air and climate change

The Danube is the second-largest river basin of Europe. Due to its large expanse from west to east, the Danube crosses three climatic zones: the Atlantic climate with high precipitation, the continental climate with lower precipitation and cold winters and the Mediterranean climate. The study for the climate change of ESPON has covered five climate change regions in Europe regarding the exposure. Based on the study, the potential importance of climate change is the highest in Bulgaria, in some areas of the Romanian Carpathians, in the Little

Hungarian Plain and Slovenia. A moderate effect can be expected in many areas of the Danube River Basin.

The increase of the formation of extreme water balance situations can be considered as an expectable effect of the climate change. In recent years, many flood records have been beaten also in Central Europe, consequently, in the areas of the Danube and its tributaries. The flood statistics between 1998 and 2009 reveals that the density of the forming floods can be mainly related to relief properties and not to rivers.

With reference to air quality the main pollution sources are related to transports, industrial activities and winter heating in some part of the region. Less important contributions for CO and PM10 emissions are coming from the agriculture, forest and livestock farming sectors.

The increase of the concentration of greenhouse gases is the most significant effect among the processes of human origin which impact on the climate. The emission of the Danube River Basin was favourable in most of the relevant countries in 2008 except for the Czech Republic and Slovakia.

Landscape and cultural heritage

The Danube Region has diverse landscape properties. The macro region-wide richness of natural resources poses as an outstanding potential for the diversification of rural development. The development of the transport network, inadequate or non-sustainable land use, urbanization, loss of biological active surfaces and green infrastructure, logging and fires are the main reasons for the fragmentation and deterioration of ecosystems and landscape.

The Danube programme area represents one of the richest regions in Europe in terms of variety of cultures. In most of the cases the value of the cultural heritage was acknowledged and there is a large number of sites put under protection. There are 65 world heritage cultural sites in the area and 8 natural heritage sites, altogether creating a very attractive destination for tourism.

Population, human health

The region is featured of disparity according to surveyed issues of the social cohesion (e.g. ageing, migration, natural increase, social, ethnic and labour force migration), the slope from North-West to South-East is observed almost in every surveyed aspect. There are strong east-west inequalities in accessibility to the essential public services within the region, lack or degradation of environmental infrastructure, such as potable water network, sewage system including waste water treatment, as well as waste management. It is an aim to reduce the number of diseases due to harmful environmental effects by mitigating the pollution of environmental factors (e.g. air quality, access to clean water, noise and vibration, light pollution).

Energy consumption, use of renewable energy sources, traffic & transport

Although the Danube region has good conditions for green energy utilization, high level of consumption, low energy efficiency, high share of fossil fuels in final consumption is typical, especially in the eastern regions. While there is a relatively high rate of biomass energy and hydropower utilization, lack of other alternative renewable energy sources is dominant, the smart grid construction is slow in the majority of the region.

Western regions and Central-European capital cities have a good accessibility between each other and the economic backbone of EU. Lack of integrated and multimodal transport systems on the southern south-eastern part can be observed.

The Rhine-Danube trans-European axis is a high traffic waterway. Navigability varies on different segment of the Danube. The Danube is classified as an international waterway, part of the Pan-European transport corridors and TEN-T networks (Priority Project 18). It is important to foster eco-efficient Danube engineering and sustainable shipping.

5.2 CURRENT ENVIRONMENTAL CONDITIONS

The choice of environmental issues is based on the SEA Directive. The environmental situation analysis is to be prepared for all environmental issues identified. The identified environmental issues and key focus points regarding the targeted territory are the followings, with pointing out the key environmental problems of the area affected by the programme.

Taking in consideration the main objectives of the programme and the characteristics of the region, most important issue of the area is water management, including flood risk prevention and the biodiversity conservation of the Danube river basin. The air and climate issue and the climate change is also a key issue. Water dependent sectors such as agriculture, forestry, navigation and water related energy production are likely to suffer under the projected future conditions. The programming area also needs improvement of the connectivity to TEN-T network in order to create environmentally-friendly transport systems. Smart energy distribution networks needs development on regional level in a way to result increasing energy efficiency and the better usage of the potential in renewable energies.

Environmental issue: Water

Description of the element:

The Danube Region is rich in water resources, that offers excellent potentials for both touristic and energy generation purposes - and certainly carry some risks of flood and pollution. Adapting the WFD, the water management of the region is based on river basins and the area should aim to achieve good status in all bodies of surface water and

groundwater by 2015, respectively by 2027 at the latest. Realisation of this achievement by 2015 is not feasible according to the Danube River Basin District Management Plan (14 December 2009).

Out of the water bodies in the entire DRBD (Danube River and DRBD Tributaries) 40 % of the water bodies are designated heavily modified due to significant physical alterations causing a failure of the good ecological status.

The region has remarkable geothermal capacity, but currently this is mainly used in spas. The use of geothermal energy (like heat-pump systems, thermal water utilizations for heating and agricultural purposes and geothermal power plants) represents a low rate in the energy sector.

Current state of the environment:

Pollution from domestic, agricultural and industrial sources is still a major concern, either directly through discharges (effluents) or indirectly from the spreading of nitrogen fertilisers and pesticides or through leaching from old landfills or industrial sites (e.g. chlorinated hydrocarbons, heavy metals). Diffuse sources are having an increasing impact on groundwater.

28% of the river water bodies achieved good ecological status or ecological potential and 64 % achieved good chemical status. Assessing the lake water bodies, 43% achieved good ecological status and 29% good chemical status. Though the bathing water at Europe's beaches, rivers and lakes was generally of high quality last years, indicators of the ecological status and chemical status in coastal water bodies of the Danube region did not achieve good status.

The state of groundwater is more favourable. Out of 11 transboundary GWBs of basin-wide importance (22 national parts evaluated), good chemical status was observed in all national parts of 8 transboundary GWBs (73%). In two additional transboundary GWBs, poor chemical status was observed in one national part. In only one GWB were all national parts found to be in poor status. Altogether, poor chemical status was identified in four out of 22 of the evaluated national parts of the 11 transboundary GWBs. Nitrates were the cause of the poor classification in every case.

Out of 11 transboundary GWBs (22 national parts evaluated), good quantitative status was observed in all national parts of 9 transboundary GWBs (82%). In two transboundary GWBs, good quantitative status was observed in only one national part. The poor quantitative status is caused in two cases by the exceeding of available groundwater resources; in one case by damage to terrestrial ecosystems and in one case by damage to surface waters (springs). In the case of the national part of one GWB, former mining activities still have an impact on the quantitative status.

57% of the DRB population live in urban areas. The share of population connected to public water supply in some countries is less than 51% (e.g. Ukraine). In many countries water supply networks are in poor condition due to bad design and construction, lack of maintenance and ineffective operation. Lead pipes are still present in older buildings, especially in historic city centres. Lead leaching into the drinking water from the pipelines poses widespread risk on the health of the consumers. The volume of leakage in general is high. The extent of piped drinking water supplies to households varies between urban and rural areas, with rural populations in some countries worse provided. The share of the population connected to public sewer system varies from 15% in Moldova to 95% in Germany.

The climate change and extensive land changes (river and lake regulation, straightening of rivers, detachment of floodplains) cause floods and droughts all over the region. The quantity of the precipitation is unevenly distributed through a year and the volume of surface and soil runoff varies along the Danube. In some regions, the severity and frequency of droughts can lead to water scarcity situations; overexploitation of available water resources can intensify the consequences of droughts.

Key environmental conflicts and problems:

Pollution, eutrophication and overexploitation of water resources, increasing flood risk, inadequate water and wastewater treatment facilities in some parts of the region.

Stress points:

Prevention of significant losses of pollutants from technical installations and prevention and/or reduction of the impact of diffuse sources and of accidental pollution incidents is needed. Development and completion of wastewater collection and treatment systems and water distribution network has to be implemented. Compliance of water supplies, compliance of drinking water from small supplies, and risk-based approach for more effective quality control (drinking water quality parameters and values) has to be promoted.

Improvement of data collection and of the monitoring system for a more accurate assessment of water resource balances (quantity, quality) is needed. This could bridge the gap between measures at national level and their agreed coordination at the basin-wide level to achieve the overall WFD environmental objective. A properly balanced groundwater use has to be achieved, taking into account the conceptual models for particular groundwater bodies, and should not exceed the available groundwater resource.

Reactivation of former wetlands and floodplains should be promoted to achieve increased water retention along with good surface water status. Measures have to be taken to improve river continuity, reconnection of adjacent floodplains/wetlands.

Common approach in assessment of flood-prone areas and flood risk mapping is needed, to increase public awareness of the areas at risk from flooding, to provide information of

areas at risk to give input to spatial planning and to support management and reduction of the risk to people, property and the environment.

Scientific research is required to further elucidate the impacts of UTES (Underground Thermal Energy Storage) on groundwater. Cross-sectoral subsurface planning is required to minimize negative conflicts between UTES and other subsurface interests; and EU-wide guidelines and standards are required for quality assurance and control when installing UTES systems.

Likely future trends:

- Reducing organic, nutrient and hazardous substance pollution, prevention and/or reduction of the impact of diffuse sources and of accidental pollution incidents
- Improvement of the ecological and chemical status of surface waters and groundwater
- Promoting sustainable use of water resources by appropriate controls over the abstraction of fresh surface water and groundwater
- Prevention from and reduction of flood risks (common approach in assessment and mapping of flood-risk)
- Improvement of waste water treatment and the reduction of nitrate pollution (e.g. nitrates from agricultural sources or industrial recharges)
- Continuous monitoring of water quality (regarding organic- and inorganic materials)

Environmental issue: Soil and geological medium

Description of the elements:

Land and soil are an essential resource for agricultural development, energy production and construction, for environmental issues such as climate change and biodiversity, and for many cultural aspects. Soil functions in the Danube Region are often taken for granted and perceived to be in abundance. Soil degradation is a slow process and generally goes unnoticed, though it has fundamental role for the human well-being, ecosystem functions and the economy. Land management is the prime pressure on the soil resource and an increasing societal challenge throughout the Danube Basin. Soil erosion in one country may result in reservoir siltation in another country downstream. A loss of productivity in a country's agricultural soils puts increased pressure on arable land in another location – often, outside of the European Union. Land management is therefore a central issue to the Danube Region.

Current state of the environment:

In last decades the change in the land-cover of the Danube Region resulted a very high proportion of artificial areas (above 5% with except of Slovenia) increasing the fragmentation of the habitats. It is estimated that Europe loses between 8 and 10 km² of fertile soils per day due to urbanisation and industrialisation, which means irreversible soil losses and soil degradation. In the region, Illegal logging may represent a serious risk to biodiversity as well as increase the risk of soil erosion and forest fires.

Domestic, agricultural and industrial pollution sources is still endangering soils, either through discharges, from the spreading of nitrogen fertilisers and pesticides or through leaching from old landfills and industrial sites. Impacts of diffuse sources on soils are increasing. Decrease in groundwater levels can also cause soil quality problems, where there is a risk of over-exploitation of water (e.g. irrigated agricultural area, mining, thermal water use)

Key environmental conflicts and problems:

Soil erosion, acidification groundwater pollution, soil salinization.

Stress points:

Major soil functions need to be maintained on the highest possible level. These are (according to Thematic Strategy for Soil Protection (EC 2006a,b): food and other biomass production, storing, filtering and transformation of materials, habitat and gene pool of living organisms, physical and cultural environment for humankind, source of raw materials, acting as a carbon pool, archive of geological and archaeological heritage. Sustainable waste management and use of material resources has to be promoted.

Likely future trends:

- Prevention and reduction of soil contamination
- Help to maintain soil functions on the highest possible level (according to Thematic Strategy for Soil Protection (EC 2006a,b)
- Promoting sustainable land-use and agriculture (e.g. supporting of High Nature Value (HNV) farming, revitalization of brownfields, recultivation of old landfills)
- Reduce waste generation, increase waste recovery and recycling, sustainable use of material resources.

Environmental issue: Biodiversity, flora, fauna

Description of the elements:

Because of its large area and very diverse habitats, the Danube provides suitable living conditions for a large number of different species. The complete river basin, including

tributaries, is home to around 2,000 plant and 5,000 animal species, including numerous endangered or nearly extinct species, thus it is a focus for conservation of biodiversity.

Main habitat types of the continental area of the Danube region are the agricultural and cultivated habitats (51,46 %) followed by the woodland and forest habitats (41.52%), while in the coastal region heathland and scrub habitats are the typical landcover. The highly diverse ornithological fauna of the Danube Basin and especially its delta, counts over 250 species of birds. Some 110 species of fish are to be found in surface waters of the region.

Among the 1079 NATURA 2000 areas (156,361 km²) of the EU member states situated in the Danube River Basin 716 (73,023 km²) were assigned according to the Habitats Directive, and further 294 (73,872 km²) according to the Birds Directive. 44 protected areas (5,810 km²) were established for the purpose of bird protection and the protection of habitats. Slovenia, Bulgaria, Slovakia and Hungary assigned NATURA 2000 areas in a ratio above the EU27 average compared to their own areas.

While the WFD offers opportunities for river restoration, achieving its targets has fallen short due to several challenges. The Blueprint to safeguard Europe's waters Consultation identifies gaps and possible actions to improve and accelerate implementation, including water-related green infrastructure. The Blueprint contributes significantly to help meet water-related policy targets in Europe (and other policy objectives such as the Floods Directive, Natura 2000 and EU 2020 Biodiversity Plan)

In 2013, the European Commission issued a strategy on green infrastructure to make greater use of wetlands and other natural and semi-natural areas across Europe to support cleaner waters and reduced flood risk. This is a key step in implementing Target 2 of the EU 2020 Biodiversity Strategy that requires that 'by 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15% of degraded ecosystems'

Current state of the environment:

Agriculture, industry, infrastructure development, regulation and more intense use of rivers, spread of invasive alien species as well as high level of tourism are threatening biodiversity. Protection of ecosystems, more precisely taking into consideration the principle of sustainable development in managing natural resources is a key issue.

Aquatic biodiversity is facing an increasing risk. Invasive alien species are negatively impacting the natural fauna and flora in many rivers and lakes. Also, nutrients flowing off the land, as well as poor land use and land management like the straightening of rivers, detachment of floodplains and fragmentation of habitats through dams and weirs increase the degradation of habitats and loss of species. In the case of some special species, overfishing is a serious risk. The Danube River and the Black Sea once were hotspots of

sturgeon biodiversity as six native species were documented in the past. Today, one species is lost and the remaining five are threatened with extinction. Due to the special life-cycle (migratory fish) and being targeted by illegal fisheries (as source of caviar), sturgeons are extremely endangered.

Key environmental conflicts and problems:

Invasive alien species, degradation and fragmentation of habitats and consequently loss of species.

Stress points:

Stresses causes in the processes of nature by human interference should be reversed as much as possible, compensated for and in the future rather prevented (restoration of wetland areas which are in direct contact with aquifers, prevention of deterioration of groundwater quantity as well as the deterioration of dependent terrestrial ecosystems).

NATURA 2000 maintenance plans should be completed; common management off cross-border ecosystems and habitats has to be improved.

Supporting of High Nature Value (HNV) farming and forest management (describes some of the oldest and most biodiversity rich farming and forestry systems).

River restoration helps reduce and counter the impacts of land and water use and provides the basis for resilient and sustainable water resource management. Restoring rivers reconnects ecosystems and the services they provide, including: water quality, biodiversity and habitats, and flood safety. By restoring natural conditions, river restoration promotes healthier, more resilient ecosystems that support green infrastructure.

Likely future trends:

- Protection and promotion of natural habitats (e.g. within the NATURA 2000 network)
- Help to decrease the fragmentation of habitat or species (both aquatic and terrestrial), promoting green infrastructures, restoration of river continuity, restoration of wetland areas which are in direct contact with aquifers.
- Help to stop and prevent the spread of invasive alien species.
- Promotion of common management off cross-border ecosystems and habitats

Environmental issue: Air, climate change

Description of the elements:

Air pollution is a trans-boundary, multi-pollutant, multi-effect environmental problem. Although significant and well directed efforts over more than two decades have led to a reduction in emissions, air pollution in Europe continues to pose risks and has adverse effects on human health and the natural and man-made environment (EEA, 2003). The main pollution sources are related to transports, industrial activities and winter heating in some part of the region. Less important contributions for CO and PM10 emissions are coming from the agriculture, forest and livestock farming sectors.

The increase of the concentration of greenhouse gases is the most significant effect among the processes of human origin which impact on the climate. The emission of the Danube River Basin was favourable in most of the relevant countries in 2008 except for the Czech Republic and Slovakia.

Based on the study on Climate Change in the Danube Basin, prepared by International Commission for the Protection of the Danube River (ICPDR) the increase of the air temperature is expected with a gradient from northwest to southeast, annually and in all season. Changes in the seasonal runoff pattern, triggered by changes in rainfall distribution and reduced snow storage and increasing evapotranspiration are predicted (especially in the Mediterranean and south-eastern areas). Droughts, low flow situations and water scarcity are likely to become more intense, longer and more frequent; an increase of water temperature and increased pressures on water quality are expected.

Current state of the environment:

Main activities responsible for air pollution and top polluting sources include agriculture and fuel combustion by power plants, passenger and heavy-duty vehicles, and households. Based on EEA study prepared in 2010, emissions of the main air pollutants across Europe and the Western Balkan countries have decreased since 1990. In 2008, sulphur oxide (SO_x) emissions had fallen by 72 % from 1990 levels. The downward trends of emissions of the three main pollutants which cause ground-level O₃ pollution have continued over recent years: CO has fallen by 55 %, NMVOCs by 44 % and NO_x by 34 %. Emissions of primary particulate matter, PM_{2.5} and PM₁₀, have both decreased by about 13 % since 2000. Despite such reductions, Europe still contributes significantly to global emissions of air pollutants. European emissions of NO_x for example are approximately 8 % of global emissions, and Europe currently contributes about 15% of global SO₂ emissions. The underlying growth of transport demand has also led to large increases in greenhouse gas emissions, which have the most significant effect among the processes of human origin which has impact on the climate. The increase of the formation of extreme water balance situations can be considered as an expectable effect of the climate change.

Key environmental conflicts and problems:

Air pollution, excessive use of fossil fuels, water scarcity and droughts.

Stress points:

Coordinated approach for controlling air pollutant and greenhouse gas emissions has to be developed taking in consideration international climate and air pollution strategies. A joint strategy to meet both air quality and climate change targets is needed.

Mitigation of the effects causing global air pollution (caused by the burning of fossil fuels, certain industrial and agricultural activities, and the use of ozone-damaging and greenhouse materials) should be promoted.

Implementation of water scarcity and water efficiency indicators, sustainable and green transportation, support of economies aiming at low carbon dioxide emission has to be promoted.

Likely future trends:

- Reduction of air pollution (e.g. to prevent acidification, eutrophication and ground-level ozone pollution)
- Reduction of the GHG emissions (min. 18 % below 1990 in the period 2013-2020)
- Improving common risk assessment and management system for natural and industrial risk sites connected to climate change
- Help to decrease vulnerability to the climate change (e.g. sustainable water resource management, green infrastructures, use of drought tolerant plants)

Environmental issue: Landscape and cultural heritage

Description of the elements:

The Danube Region has diverse landscape characteristics. Being rich in natural resources poses an outstanding potential for the diversification of rural development. The region has large number of cultural heritage sites with common cultural roots; large number of natural heritage sites with similar natural endowments and large number of world heritage sites.

Altogether 73 world heritage sites can be found in the area of the Danube River Basin, similar to the European trend, the vast majority of the sites are cultural (89%) while the smaller part is natural heritage (11%). There are no “mixed” world heritage sites in the area of the Danube River Basin.

Current state of the environment:

The development of the transport network, inadequate or non-sustainable land use, urbanization, loss of biological active surfaces and green infrastructure, logging and fires are the main reasons for the fragmentation and deterioration of ecosystems and landscape. All

man-made facilities, objects, and buildings of cultural significance, monuments, museums, etc. damaged by environmental pollution causes material and intangible loss to the population. Though the value of the cultural heritage was acknowledged on a regional level, further improvements are needed for the properly valorisation of these assets through tourism. Sustainable management methods have to be developed both in terms of preservation and exploitation of the natural and cultural heritage.

Key environmental conflicts and problems:

High proportion of artificial area (above 5%), enlargement of the transport network, climate change will expectably have unfavourable effects on some of the world heritage sites, lack of protection (investments, ideas for new functions, sustainable offer mix and financial scheme etc.).

Stress points:

Landscape aspects should be emphasized in regional (waste disposal, transport network development, flood management) and urban planning. Protection of natural and cultural heritage has to be improved by strengthening the guarding system and responsibility for common-pool resources, respective and strict legislation in order to put the sustainability principle into practice.

Measures, that have impact on the creation of an integrated landscape, especially the rehabilitation of environmentally degraded areas, and the new, antropogenous activities integrated into nature, and the implementation of traditional forms of agriculture (animal grazing, field management) has to be taken.

Protection and preservation - as well as sustainable management and planning - of European cultural and natural heritage is a key issue.

Likely future trends:

- Integration of landscape management into regional, town planning, cultural, environmental, agricultural, social and economic policies should be adopted.
- Increasing awareness of the value of landscapes, their role and changes affecting them. Promoting training and education in landscape policy, protection, management and planning.
- Ensure protection of natural and cultural landscape (e.g. by revitalization of brownfields, increasing the proportion of grasslands, croplands and pastures, organic farming within the agricultural land use).

Environmental issue: Population, human health

Description of the elements:

The factor means the mitigation of those impacts that endanger the economic and social wellbeing, health of the population. Based on the Regional Analysis of the Danube Region, the programme area is featured of disparity according to surveyed issues of the social cohesion (e.g. ageing, migration, natural increase, social, ethnic and labour force migration), the slope from North-West to South-East is observed almost in every surveyed aspect. There are strong east-west inequalities in accessibility of essential public services. As humans are constantly exposed to environmental influences, environmental factors can have an adverse effect on human health and well-being.

Current state of the environment:

While on the developed part of the region migration balance is positive due to higher income levels, emigration from less developed (rural) regions towards the cities and the western part of the region is causing massive population decrease. The intra-regional migration is typical among mobile, highly skilled work-age population, causing loss of educated and skilled workforce. Unskilled and undereducated people remain making their reintegration harder. Mainly in the South-East part of the region ageing besides too young age structure leads to lack of workforce and hinders global competitiveness. In some countries, high percentage of active population serves as a basis of macro-regional economic development.

The rate of poverty risk has decreased in substantial part of the region, but social disparities continue to grow, problems are aggravating in those lagging countries. The integration of Roma people is still problematic; the achievements of various programs targeting Roma integration are not significant. The main problems of these regions are deepening poverty, poor housing conditions, low-level-education, high rate of unemployment, low incomes and dependency on social support.

Regarding the environmental factors effecting the human health and well-being, noise pollution and ambient air pollution (e.g. particulate matter, ozone) are the main risk factors. The main sources of noise and air pollution are traffic (air, railway and road) and the industrial sector. In spite of the significant progress made over the years, access to quality water and sanitation can still be improved, especially for citizens living in areas served by small scale water supply systems. It is an aim to reduce the number of diseases due to harmful environmental effects by mitigating the pollution of environmental factors (e.g. air quality, access to clean water, noise and vibration, light pollution).

Key environmental conflicts and problems:

Strong east-west inequalities in accessibility to essential public services within the region, lack or degradation of environmental infrastructure, such as potable water network, sewage

system including waste water treatment, as well as waste management, disparities of labour markets in different countries (regarding wages, jobs, qualifications etc.) harmful environmental effects and pollution (e.g. air quality, access to clean water, noise and vibration, light pollution).

Stress points:

Measures should be taken in order to achieve the health and well-being object of the 7th Environmental Action Programme (EAP).

Stabilisation of the population, provision of appropriate employment all over the region and strengthening equal opportunity in social terms to mitigate social disparities in the Danube River Basin. Improvement of the social care system is needed, to cope with the increasing amount of challenges.

Development of green infrastructure can help delivering key benefits for public health and well-being.

Increasing proportion of economically active age group and its employment rate. Increasing employment rate in the high value-added R & D & I sector, cooperation among existing and potential R & D & I centres.

Measures for mitigating the harmful environmental effects and pollution (e.g. air quality, access to clean water, noise and vibration, light pollution) are needed.

Likely future trends:

- Prevention of air pollution and environmental noise exposure
- Prevention and reduction of diseases and negative health impacts caused by environment-related threats
- Reduction of risks and damages caused by floods and disasters (e.g. as result of climate change) on population and human health (e.g. health, material and economic damages)
- Reduce existing disparities in accessibility to the essential public infrastructures (such as potable water network, sewage system including waste water treatment, as well as waste management)
- Decrease disparities of labour markets within the Danube region

Environmental issue: Energy resources

Description of the elements:

Energy efficiency and reducing energy use can help reducing GHG emissions, air pollution, impacts to surface and ground waters, habitat fragmentation and biodiversity disturbance through infrastructure and land use, etc. The EU has put forward several measures to improve efficiency at all stages of the energy chain and it is aiming for a 20% cut in Europe's annual primary energy consumption by 2020.

Measures to increase the share of sustainable renewable energy sources in the energy mix can lower overall environmental and climatic pressures compared to other forms of energy. Such measures can also contribute to improved resource efficiency where they result in a more efficient utilisation of non-recyclable waste streams.

Measures aiming at using resources in a more efficient way also contribute to reducing energy demand: this is in particular the case when products are re-used, materials recycled, when all production and consumption chains are organised in a more efficient way.

Current state of the environment:

Although the Danube region has good conditions for green energy utilization, high level of consumption, low energy efficiency, high share of fossil fuels in final consumption is typical, especially in the eastern regions.

While there is a relatively high rate of biomass energy and hydropower utilization, lack of other alternative renewable energy sources is dominant, the smart grid construction is slow in the majority of the region.

Key environmental conflicts and problems:

Low energy efficiency, high share of fossil fuels in final consumption.

Stress points:

The exploitation of significant potentials in other green energies such as geothermal, wind and solar energy will be carried out.

The development and macro-regional integration of different energy networks and of the internal market has to be promoted in order to have more favourable prices and to reduce energy dependency.

Likely future trends:

- Improvement of energy efficiency and the increase of use of renewables, development and macro-regional integration of different energy networks and of the internal market:
 - Improvement of energy efficiency (by 20% by 2020)
 - Increase of use of renewables (by 20 % of renewable energy by 2020)

Environmental issue: Mobility and transport

Description of the elements:

Western regions and Central-European capital cities are well connected to each other and to the economic backbone of the EU. However, lack of integrated and multimodal transport systems can be revealed in the southern, south-eastern parts of the Programming Area.

The Rhine-Danube trans-European axis is a high traffic waterway. Navigability varies on different segment of the Danube.

Current state of the environment:

The trans-European transport network crosses the region in multiple axes. The missing cross-border links and the weak multimodality impede the intensification of east-west and north-south trans-European economic cooperation, and the expansion of a network economy. Road goods transport is still dominant and its share is growing. Eastern Europe and the Balkans have worse vehicle fleet, less efficient and less sustainable transport systems. The appreciation of the long distance shipping on the Danube in contribution to the EU's 2020 objectives may play a role in reducing emissions; nevertheless, building larger capacity waterways may result in significant ecological damage. In order to increase the potential traffic of the Danube and to develop the riverbank areas, ports, logistical terminals and industrial capacities, increasing emphasis is put on the solution of navigability with deep draft vessels. From this perspective, the central section of the Danube is presently in the most unfavourable situation. A serious problem is the lack of coherence among the existing and planned capacities; lack and surplus of available port capacity are simultaneously present, especially along the Slovakian, Hungarian and the southern Slavic river sections.

Key environmental conflicts and problems:

Significant environmental risks and impacts due to river regulations, uncoordinated port management, lack of integrated and multimodal transport systems on the southern south-eastern part, lack of waste and waste water disposal system for vessels.

Stress points:

Sustainable development of waterways.

Common river management and ensuring an adequate water quality, developing transnational environment-friendly and low-carbon transport systems.

Tourism based on renewable energy resources like bicycle riding and rowing (both as leisure activity and also as transport mode of tourism), including its background infrastructure, should be prioritized and supportable.

Likely future trends:

- Reduction of carbon emissions deriving from transport (by 60 % by 2050)
- Promotion of environmentally sustainable transport (rail and inland navigation, waterways and ports)

6. APPROACH AND METHODOLOGY

6.1 GENERAL APPROACH

The SEA is planned and carried out in line with the 2001/42/EC Directive (that defines strategic environmental assessment) and its national level transpositions.

The following methodological guidelines and materials have been taken into account:

- Monitoring and evaluation of European cohesion policy - Guidance document on ex ante evaluation for the Programming Period 2014-2020, January 2013
- Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment
- Guidelines on Climate Change and Natura 2000

The strategic environmental assessment process have been planned and composed of the following parts:

1. Identification of the environmental authorities in all partner states
2. Screening statement – decision on whether the SEA is required or not
3. Determination of the Scope and consultation on that
4. Preparation of the Environmental Report
5. Consultation on the Environmental Report with environmental authorities and the public
6. Decision on the transboundary effects
7. Integration of recommendations from the consultation process
8. Monitoring of the significant environmental impacts
9. Information about the Decision
10. Approval of the document

The SEA process started in parallel with the elaboration of the co-operation programme. All partner states have been involved in the whole SEA process, the list of the environmental authorities has been composed in co-operation with the partner states (detailed in chapter 4.3.) The requirement for the SEA in case of the Danube Transnational Co-operation Programme has been reasoned and presented in the Scoping Report. (The environmental authorities have agreed that the programme will have a significant impact on the environment and the elaboration of the SEA is necessary.) The determination of the environmental report's scope and level of detail have been presented in the scoping report and consultation took place with the environmental authorities. The content of the environmental report follows the requirements of the Annex I of the SEA Directive. The SEA

process and the environmental assessment have been carried out by the same expert team in all partner states, scoping report and environmental report are joint single reports.

Concept of the consultation with environmental authorities and the public:

The SEA Directive 2001/42/EC the environmental authorities and the public of the partner states to be consulted with during the SEA Procedure. First, the prescribed environmental authorities and the national level legal requirements have been consulted with all partner states.

The Programming Committee of the Programme agreed on the national authorities responsible for the Danube Transnational Programme in every partner state to serve as a first contact point for the programme's future Managing Authority. The national authority responsible for the Danube Transnational Programme in every partner country organises the consultations internally.

The Programming Committee of the Programme agreed on the elaboration of the report in English language, the way of availability of the documents to be consulted on and also the duration of the consultations:

- consultation connected to the scope: Environmental authorities had had 30 days to send their remarks in English language. The remarks of the environmental authorities have been integrated into the final scoping report and into the environmental report.
- consultation on the environmental report : The Environmental Report is available for consultation parallel with the draft Co-operation Programme. There will be 60 days available to comment on the environmental report.

ONEP's website serves as the platform for the documents to be available: <https://www.nth.gov.hu/en/activities/european-territorial-cooperation/danube-transnational-programme-new-transnational-cooperation-programme-for-2014-2020>. Comments could be sent to the following e-mail address: danube@nth.gov.hu. Non-reception of comments will be considered as approval of the document.

The participation of the stakeholders in the SEA process was of major importance, since environmental impacts are closely related to social, economic and cultural aspects. The inclusion of stakeholders in a SEA is vital in order to incorporate their perspectives and points of view. On this basis the impacts can be assessed as well as the adequacy of planned actions and mitigation methods.

The Environmental Report must be accessible for consultation at the same time as the draft plan (SEA Directive - Article 6.2 and Annex 1). Subsequently to the consultation responses collected, an explanation shall be given showing how the Environmental Report and consultation replies have been taken into consideration in the co-operation programme (SEA Directive - Article 8).

Aspects on which the consultation process laid special stress:

- clear and detailed information on which documents had to be made public, on the language and the format of the comments, on the accessibility of the SEA report
- information with clear strategic statements on the partners having participated in the consultation processes
- clear and full presentation of opinions and comments provided by the partners, and their impact on the content of the CP
- effective participation of economic, social and environmental partners

Consultation actions on the SEA:

- Consultation held in all countries
- Collection of comments
- Making proposals on how to integrate each comments into the programme and explanation on ignoring certain comments
- Amending the programme: according to the results of the consultation process in all participating countries
- Drafting the information note/Statement

Public participation

The involvement of stakeholders and the involvement of the public in the SEA process will be a key element in the consultation process. The consultation process gives the opportunity to the stakeholders (i.e. institutions, environmental agencies, NGOs, representatives of the public and those target groups that will be potentially affected by the possible environmental impacts of the implementation of the Co-operation Programme) and to the interested public to express their opinion publishing the draft co-operation programme and draft environmental report on the programme’s website.

Incorporation of the SEA results into the co-operation programme

The conclusions of the environmental report, as well as the opinions expressed during the consultation have to be taken into account during the preparation of the JOP.

This section will be finalised after the consultation on the environmental report.

6.2 SEA PROCEDURE AND TIME SCHEDULE

Timing planned	Steps of the SEA Procedure	Documents for the undertaken steps
SCREENING STATEMENT AND SCOPING PHASE		
Preconditions:		



<ul style="list-style-type: none"> Accepted territorial analysis and final thematic objectives and investments priorities 		
30 th April 2014	Scoping phase – the elaboration of the scoping report	Scoping report
30 th April 2014	Screening stage – involved in the scoping stage	Screening statement incorporated into the scoping report
19 th May 2014	Notification letter for environmental authorities in all countries on the scoping report, Publication of the scoping report The start of the scoping consultation with 30 days	Invitation and notification letter for environmental authorities and responsible departments of ministries in the partner countries with the availability of the scoping report
30 th Jun-10 th July 2014	Finalisation of the scoping report and the structure of the environmental report based on the received comments on the scoping report	Final scoping report including the summary of the received comments Archive comments
ENVIRONMENTAL REPORT		
Preconditions:		
<ul style="list-style-type: none"> Final draft CP, any delay in the preparation of the CP means delay for the drafting of the SEA report 		
within 20 days from the availability of the final draft CP	Elaboration of the environmental report	final Draft CP Draft report
expectedly Aug 2014	Official information of the finalization of the draft environmental report Start of the consultation with 60 days Publication of the environmental report and the draft CP	Invitation and notification letter for environmental authorities and responsible departments of ministries in all countries with the availability of the environmental report and the draft CP Invitation e-mail to stakeholders
expectedly Sept 2014	Closing of the consultation period and the incorporation of comments into the report	
FINAL ENVIRONMENTAL REPORT and finalisation of the process		
expectedly Oct 2014	Elaboration of the final draft of the environmental report taking into consideration the received comments	Final draft environmental report including the summary of the received comments Archive comments The measures for monitoring
expectedly Oct 2014	Incorporation of the SEA results into the co-operation programme	Conclusion and opinions expressed during the consultation A summary how the environmental considerations have been integrated into

		the programme and how the environmental report results and consultations have been taken into account
expectedly Oct 2014	Decision on the report and CP in the partner countries	The non-technical summary of the information provided in the environmental report Official letter and decision
expectedly Oct 2014	Official notification on the decision	Official statement
expectedly Oct 2014	Publication of the final environmental report and SEA statement	Publication

6.3 DATA BASIS, GEOGRAPHICAL OR ENVIRONMENTAL MAPPING UNITS

Information needs to be collected in the frame of the environmental assessment to identify the environmental issues and trends that characterise the Danube Region. This provides the basis for identification and monitoring of environmental effects of the programme. The bases for data used in the environmental report are statistical sources.

As the environmental report is not evaluating a precise plan or project, it is not intended to use individual small-scale data. There are generally valid statements for the entire study. For the determination of initial status, national (NUTS 0) and regional level (NUTS 1 and 2) data are used. Although only parts of Germany (Baden-Württemberg and Bayern) and Ukraine (4 Danubian provinces) belong to the programme area, national level data are also used in this case in order to ensure sufficient consistency.

The data collection can be based on EUROSTAT data in the European Economic Area, and in the EU-Candidate countries. Besides the EUROSTAT database, on-line database of the partner countries can be applicable. Former contains mainly national data, while the latter can be used to gain regional/territorial information on the relevant eligible area.

Also in connection with non EU-member-states, the national level statistical data are applied, so the statistical classification and the figures are comparable. World Bank and UN statistics could also provide comparable indicators.

For specific (e.g. environmental) information, special databases are available, depending on the given scope, EU environmental reports, publications about Europe's environment published by European Environment Agency, EC's environmental portal, national reports on the state of the environment or nature conservation data or equivalents to these in the



different partner states on the field of nature protection, Nature Conservation Information System for map displaying the protected areas, Air Quality Protection Information System.

The environmental assessment carries quantified information, the target or value to be compared, and the source of information for the indicators.

7. ANALYSIS OF ALTERNATIVES

Operative Programmes are special in terms of alternatives, because there are no different potential variations to examine – it is a result of a planning process. The assumption is that the final version of the programme is the best alternative as it had been improved in an iterative way through the cooperation among programming, ex-ante evaluation and SEA. The elaboration and assessment of further alternatives would only be reasonable, if they could be actually implemented and thus, are relevant basis for decisions. Therefore without real alternatives state of the environment in the Programme area is to be analysed only 'with and without' implementation of the Programme. The two versions are compared against environmental factors:

The investigation of all alternatives (examination reasonable alternatives according to the SEA Directive, Art.5) comprises the gradually elaborated draft of the programme) and the "zero option" (non-implementation of the programme).

Comparison of trend in "zero option" and programme impact

The description of the status quo ante and the development trend is a result of the comparison of the zero option and the programme impact. This comparison has been elaborated by means of an analysis of the present situation and the description of the possible development based on reasonable assumptions.

Key:

++	Very positive development	--	Very negative impact
+	Positive development	o	No change
+/-	Positive and negative impact	=	No Assessment possible
-	Negative impact		

	“Zero option” - without implementation of the Programme	Trend in “zero option”	Development with the implementation of the Programme	Trend with the implementation of the programme
Water	Water is in focus of many EU-wide regulations, a positive trend regarding quality aspects can be described, and further improvement is expected. Regarding flood risk prevention further improvement, especially on regional level is needed.	+	<p>The programme will have positive effect on water quality, hydrology and natural water bodies. Restoring and managing ecological corridors, by targeting large-scale riverine networks will naturally decrease the threat of floods and vulnerability of water bodies. Disaster prevention and management objectives will support these targets too.</p> <p>Concerning to objectives of better coordination and the promotion of environmental-friendly transport systems, in the case of river and sea transport water pollution (dredging, waste, ballast waters and oil spills) and adverse effects on hydromorphology (e.g. changing of flow regime and water level) has to be considered.</p>	++
Soil and geological medium	<p>Though improvement in water quality affects soil quality positively, soil losses due to urban sprawl and infrastructural (road construction) investments, as well as improper land use are still major risk factors for the soil resources. Further erosion caused by climate change consequences will continue.</p> <p>Progress in waste treatment and recycling is ongoing, reducing land filling rate within the waste treatment forms.</p>	+/-	Regarding the soil and geological medium, many of the programme objectives could bring improvement and risk reduction. The promotion of green infrastructures, sustainable water and natural heritage management, flood risk prevention will improve soil quality and help to maintain the soil's functions. Negative impacts of future transport and energy system implementations can be minimized if environmental awareness is emphasized and required during the planning phase.	+
Biodiversity, flora,	Though nature conservation and biodiversity issue received significant attention in EU legislation	+/-	The integration of functional ecological networks and green infrastructures by interlinking natural habitats and wildlife	+/-

fauna	followed by numerous actions; degradation and fragmentation of habitats, consequently loss of species and the spread of invasive alien species cause still major concern. Enlargement of Natura 2000 network and further effort on protection and promotion of natural habitats are likely.		<p>corridors, and reducing barriers will improve the state of wild habitats, biodiversity and the threatened species.</p> <p>In case of newly built transport infrastructures, careful and nature-focused planning might reduce the negative impacts on biodiversity as well as in case of river and sea transport promotion. Regarding the energy planning and coordination actions in order to avoid negative side-effects of growing green energy utilization, one-sided biomass production (monoculture) leading to loss of biodiversity has to be avoided.</p>	
Air, climate change	Despite the remarkable reductions of emissions of the main pollutants which cause ground-level O3 pollution Europe still contributes significantly to global emissions of air pollutants. Positive trends in GHG emission reduction are observable, too. These trends are expected to continue, as usage of renewable energy is increasing and effort on sustainable transport development is ongoing. Further effort in climate change mitigation and adaptation to is needed.	+/-	Climate change issue could be promoted trough many objectives of the Programme. The improvement of public administration, institutional capacity and regional cooperation, promotion of green energy and sustainable transport, as well as the flood management and integration of functional ecological networks will help the further reduction of GHG emission and decrease vulnerability to climate change.	++
Landscape and cultural heritage	The Danube programme area represents one of the richest regions in Europe in terms of variety of cultures. In most of the cases the value of the cultural heritage was acknowledged and a large number of sites put under protection. This trend is likely to continue. Protection of natural heritage, reclamation of degraded landscapes needs further attention and support.	0	Preservation and management of the diversity of natural and cultural assets in the region will likely have positive effects on landscape and cultural heritage issue, as well as interlinking natural habitats and wildlife corridors, and reducing barriers. Basically no negative environmental impacts and risks are expected apart from those that could arise during the implementation (construction) of the specific projects.	+ / 0
Population	Although there is continuous effort on tackling main social challenges and to decrease disparities in	+/-	The programme will support actions that improve the capacities of regions to manage new social challenges and to	+

and health	<p>the region, further emphasis and spreading of best practices is needed.</p> <p>Regarding the environmental factors effecting the human health and well-being, noise pollution and ambient air pollution are still causing health damage. Measures were made to reduce the number of diseases due to harmful environmental effects, monitoring and warning systems are improving.</p>		<p>decrease disparities of labour markets within the Danube region.</p> <p>Improving and creating new recreation area, decreasing fragmentation of the landscape will influence in a positive way the well-being of human population.</p> <p>Regarding the transport and energy management (construction, infrastructural developments) projects, there is a risk of increasing noise level and air pollution load (e.g. in case of newly developed roads with the increasing traffic) with likely negative impacts on human health.</p>	
Energy resources	<p>Many projects promoting energy efficiency and green energy production were supported in the region; the increase in renewable energy consumption is remarkable, though the potentials of the region are still unexploited. When supporting and investing into renewables, the available sources in the site, environmental and cost effective alternatives should be more carefully examined and considered. The integration of the increased energy production from supplying renewable sources into the grid needs further improvements.</p>	+	<p>With the improvement of environmentally friendly transport systems general reduction of fossil energy consumption is expected.</p> <p>Smart grid technologies and systems are likely to reduce energy consumption and losses within electric distribution system increasing this way efficiency and conservation; enable renewable energy integration and PEV (Plug-in Electric Vehicles) integration.</p>	++
Mobility and transport	<p>Western regions and Central-European capital cities have a good accessibility between each other and the economic backbone of EU. Development of integrated and multimodal transport systems on the southern south-eastern part is needed</p> <p>Domination of road transport has to be balanced. Further efforts to promote railway and waterway transport are needed.</p>	+/-	<p>Main effects on mobility and transport issue will be likely under Priority axis 3: Better connected Danube region. Growing regional cohesion of mobility and connectivity is expectable. With the improvement of environmentally friendly transport systems general reduction of fossil energy consumption is likely.</p> <p>Supporting of these actions could lead to an increase in land take, fragmentation of habitats, air and noise pollution in sensitive areas. With careful and nature-focused planning the overall reduction of transport's environmental impacts is</p>	+

			likely on regional level.	
--	--	--	---------------------------	--

8. IMPACT IDENTIFICATION AND EVALUATION

8.1 A PROGNOSIS OF THE LIKELY ENVIRONMENTAL EFFECTS AND CONSEQUENCES OF IMPLEMENTING THE PLAN OR PROGRAM

At the present state of the environmental impact assessment of the program only an outline of possible environmental effects can be given. Based on territorial analysis and the priorities of EU and macro-regional level strategies, many of the formulated specific objectives and actions will contribute to environmental (e.g.: transnational water management, restoration of ecological corridors) and sustainability (e.g.: green transportation, smart and clean energy networks, increasing renewable energy usage and effectiveness of energy use) issues. These will lead to direct and expectedly positive environmental effects. While in case of priorities, like innovation, social responsibility and governance, long-term, indirect effects are to be foreseen, like the spreading of new environmental technologies, progress towards a more environmentally-conscious society, or a more effective and deliberate application of sustainable development issues among the organizing principles of the region's governance.

Special attention should be paid to objectives and actions linked to improvement of transport system and preparation of strategic investments in regional transport infrastructure, promotion of sustainable freight transport, waterway maintenance and management. Supporting of these actions could lead to an increase in land take, fragmentation of habitats and additional impact through air and noise pollution in sensitive areas. Environmental awareness has to be emphasized and required during the preparation of these projects.

Water

Specific objectives of the Priority axis 2 are likely to have impact directly on water related issues. The specific objective No 2.3 is dedicated to transnational water management and flood risk prevention, aiming at further development of the River Basin Management Plans (RBMPs) and the first Flood Risk Management Plan in the Partner States by joint monitoring and joint development of measures to improve water quality and ecological status, joint management of flood risks, building awareness for joint action and tackling significant pressures identified in the region (e.g. water pollution, disconnection of adjacent wetlands/floodplains, conflicts with inland navigation and infrastructure projects). This objective will have positive effect on water quality, hydrology and natural water bodies. Specific objective No 2.2: Restoring and managing ecological corridors is also targeting large-scale riverine networks. Protection and reconnection of natural ecosystems naturally

decreases the threat of floods and vulnerability of water bodies. It can also help maintaining traditional agricultural methods (e.g. floodplain farming). Specific objective No 2.1.: Natural and cultural heritage valorisation aims the sustainable planning and development of tourism, where resource efficiency is a key issue, thus positive secondary impacts on water resources are foreseen under this objective. However, with a growing intensity of tourism (increasing number of visitors and voyages), environmental loads could increase.

Disaster prevention and management objectives will likely have positive long-term environmental impacts on water issue (e.g. reducing flood risk).

Objectives of Priority axis 3: Better connected Danube region in general should have positive effects indirectly on water issue, by better coordination and the promotion of environmental-friendly transport systems, though in the case of river and sea transport water pollution (dredging, waste, ballast waters and oil spills) and adverse effects on hydromorphology (e.g. changing of flow regime and water level) has to be considered. Application of the "Joint Statement on Inland Navigation and Environmental Sustainability in the Danube River Basin" (ICPDR, 2007) in waterway projects could minimize negative environmental effects. Special attention has to be paid on improvement of a comprehensive plan for sustainable development of the hydropower generation potential of the Danube river and its tributaries (in accordance with "Guiding principles on sustainable hydropower development in the Danube basin"), where consideration of environmental and sustainability aspects has to be ensured during the planning phase in order to avoid adverse effects on the river eco-system. Regulation on careful use of thermal water has to be involved in the energy planning and coordination actions in order to avoid overexploitation of underground thermal water, or realise of salty and warm waters into surface water bodies and water habitats.

Further indirect, long-term positive impacts of the improvement of public administration and institutional capacity, fostering the achievement of the targets of EUSDR's priority areas or giving special attention to eco-innovation and environmental-technologies has to be mentioned.

Soil and geological medium

The specific objective No 2.3 related to transnational water management and flood risk prevention will affect soil and geological medium also in a positive way, as they are closely interwoven systems. Positive effect on water quality, hydrology and natural water bodies will improve soil quality and help to maintain the soil's functions. Protection and reconnection of natural ecosystems naturally decreases the threat of floods and can also help maintaining traditional agricultural methods (e.g. floodplain farming).

The Specific objective No 2.1: Natural and cultural heritage valorisation aims the sustainable planning and development of tourism, hence could have a positive secondary

effect on soil by the reduction of land consumption. However, with a growing intensity of tourism (increasing number of visitors and voyages), environmental loads could increase (waste and waste water).

In case of the planning, coordination and management of regional transport systems objectives, newly built transport infrastructure will necessarily affect land consumption and landscape, thus consideration of environmental resources and nature conservation aspects (with special emphasis on waste generation and waste management issues) are indispensable at the implementation of these specific projects.

Improperly use of thermal water, one-sided biomass production (monoculture) could lead to soil quality degradation, thus these aspects has to be involved in the energy planning and coordination actions in order to avoid indirect negative impacts of growing green energy utilization.

Secondary, long-term positive impacts of the improvement of public administration and institutional capacity, fostering the achievement of the targets of EUSDR's priority areas or giving special attention to eco-innovation and environmental-technologies has to be mentioned.

Biodiversity, flora, fauna

Direct positive impacts of Specific objective No 2.2: Restoring and managing ecological corridors are likely, as it will support the integration of functional ecological networks and green infrastructures by interlinking natural habitats and wildlife corridors, and reducing barriers. It will improve the state of wild habitats, biodiversity and the threatened species.

Specific objective No 2.3: Transnational water management and flood risk prevention will also effect positively this issue by the improvement of water bodies' ecological status. In case of hard installation measures on flood protection the negative impacts on wild habitats has to be minimized.

Actions contributing to more environmentally friendly tourism will likely have a positive effect on biodiversity, flora and fauna (being dependent on clean and sufficient natural resources)

Actions supported under the Specific objective No 2.4, supporting the adaptation on climate change and its risks should have indirect, positive long-term impacts on biodiversity, flora and fauna.

Main risks on this issue are foreseen under the Priority axis 3: Better connected Danube region. Newly built transport infrastructure will necessarily affect land consumption and landscape. Careful and nature-focused planning might prevent from negative impacts on biodiversity. Though river and sea transport is considered as most sustainable transport

mode, it's water pollution (dredging, waste, ballast waters and oil spills), the noise emission as well as the adverse effects on hydromorphology (e.g. changing of flow regime and water level) has to be considered as serious risks on water habitats and biodiversity.

Regarding the energy planning and coordination actions in order to avoid negative side-effects of growing green energy utilization, one-sided biomass production (monoculture) leading to loss of biodiversity has to be avoided.

Further indirect, long-term positive impacts of the improvement of public administration and institutional capacity, fostering the achievement of the targets of EUSDR's priority areas or giving special attention to eco-innovation and environmental-technologies has to be mentioned.

Air, climate change

The objectives having impact on air and climate change issues under Priority axis 2: Environment and Culture responsible Danube region and Priority axis 3: Better connected Danube region are of cumulative nature. The Specific objective No 2.1: Natural and cultural heritage valorisation aims the sustainable planning and development of tourism. The preparation of risk management plans for cultural and natural heritage sites exposed to climate change could help the adaptation and decrease of the vulnerability to climate change. Disaster prevention/management and adaptation to climate change is largely related to security and emergency issues, which will be supported under Specific objective No 2.4: Improve preparedness to be able to manage risks. This should have indirect, positive long-term impacts on the adaptation to climate change.

Protection and reconnection of natural ecosystems (Specific objective No 2.2) naturally decreases the threat of hazards, such as floods, landslides, thus indirectly helping and strengthening adaptation to climate change.

Regarding objectives related to transport systems (Specific objective No 3.1) mainly positive effects on air and climate change are expected. A better connectivity and more effective regional transport indirectly will lead to decrease in energy consumption and emissions. With the improvement of environmentally friendly transport systems general reduction of fossil energy consumption is likely. Special attention should be paid to emission loads during planning of implementation projects related on transport issues (e.g. construction of new infrastructures, change in traffic intensity).

Under Specific objective No 3.2 (energy issues), long-term, indirect positive effect on air and climate change (by GHG emission reduction) are likely.

Further indirect, long-term positive impacts of the improvement of public administration and institutional capacity, fostering the achievement of the targets of EUSDR's priority areas

or giving special attention to eco-innovation and environmental-technologies has to be mentioned.

Landscape and cultural heritage

Specific objective No 2.1: Natural and cultural heritage valorisation aims preservation and management of the diversity of natural and cultural assets in the Danube region as a basis for sustainable development and growth strategies, thus will likely have direct positive effects on landscape and cultural heritage issue. Sustainable planning and management could have a positive effect on the protection and preservation of cultural and natural landscapes for example by the reduction of land consumption, or by reducing effects of transport, agriculture or the growing number of visitors/tourists. Only projects with no landscape changing impacts should be supported. In case of loss of natural factors (trees, green surfaces etc.) a substitution has to be made. Restoration of buildings and cultural sceneries, as well as reclamation of degraded landscape can lead to an improvement of landscape.

Specific objective No 2.2: has positive effects on landscape and natural heritage (decreasing fragmentation of the landscape), as it aims strengthening integration of functional ecological networks and green infrastructures by interlinking natural habitats and wildlife corridors, and reducing barriers (e.g. increasing the passability of rivers, green bridges over transport infrastructures). Basically no negative environmental impacts and risks are expected apart from those temporary impacts that could arise during the implementation (construction) of the specific projects.

In case of newly built transport infrastructures (Specific objective No 3.1: Environmentally-friendly and safe transport system and balanced accessibility of urban and rural areas to TEN-T) land consumption and landscape are likely to be effected. Careful and nature-focused planning might prevent from negative impacts on natural sites and biodiversity.

Special attention should be paid to waste generation and waste management issues during planning of implementation projects related on transport and energy management (construction, infrastructural developments).

Settling renewable energy plants (windmills, solar cells) infrastructures might have a negative impact on landscape. Supporting these settlements is suggested only under strict control of and cooperation with authorities.

Further indirect, long-term positive impacts of the improvement of public administration and institutional capacity, fostering the achievement of the targets of EUSDR's priority areas or giving special attention to eco-innovation and environmental-technologies has to be mentioned.

Population, human health:

Actions supported under Priority axis 1: Innovative and socially responsible Danube region aim to improve skills and knowledge to advance social innovation to better meet social needs and further improve the social capacities of the regions. These could help decrease disparities of labour markets within the Danube region affecting population issue in positive way.

Actions supported under Priority axis 2: Environment and Culture responsible Danube region will likely have positive impacts on the issue. Improving and creating new recreation area, decreasing fragmentation of the landscape will influence in a positive way the well-being of human population. There is evidence that access to green spaces can provide health benefits, through improved mental wellbeing and levels of physical activity, reduced exposure to pollution and high urban temperatures.

Transnational water management and flood risk prevention will have long-term, positive effects on population and human health issue, as it influences the quality of water resources, bathing water quality and the water surfaces used for recreational purposes (positive effect on water quality, hydrology and natural water bodies) as well as reduces material and economic damages caused by floods on human population.

Disaster prevention and management objectives will likely have positive long-term environmental impacts on population and human health. To reduce health impacts of disasters, health impact assessment of disaster-related risks (local and regional scale) should be incorporated into plans and strategies (e.g. land use, building, infrastructure, and economic development plans).

Related to Specific objective No 3.1, achieving better connectivity and more effective regional transport indirectly will lead to positive impacts on the well-being of the population; decrease in energy consumption and emissions are expected. With the improvement of environmentally friendly transport systems general reduction of fossil energy consumption is likely. Though river and sea transport is considered as most sustainable transport mode, it's water pollution (dredging, waste and waste water, ballast waters and oil spills), the noise emission and its impacts on human health has to be considered.

Special attention should be paid to noise generation and air pollution load during planning of implementation projects related on transport and energy management (construction, infrastructural developments) in order to reduce the possible negative temporary impacts on human health. Initial state of noise levels has to be defined in the potential implementation area in order to reduce environmental risks of the proposed specific projects.

Energy resources:

Specific objective No 3.1: Environmentally-friendly and safe transport system and balanced accessibility of urban and rural areas to TEN-T will likely have no significant direct effect on the environmental issues, though achieving better connectivity and more effective regional transport indirectly will lead to positive impacts on the well-being of the population; decrease in energy consumption. With the improvement of environmentally friendly transport systems general reduction of fossil energy consumption is likely.

Smart grid technologies and systems (Specific objective No 3.2) reduce energy consumption and losses within electric distribution system increasing this way efficiency and conservation; enable renewable energy integration and PEV (Plug-in Electric Vehicles) integration. Long-term, indirect positive effect on air and climate change (by GHG emission reduction) and on energy resources issues has to be enhanced

The preparation of concepts and development plans will likely have no significant direct effect on the environmental issues. It will affect indirectly in positive way the energy resources issue. The effective consideration of environmental and possibly other sustainability aspects has to be ensured during the planning and coordination actions.

Further indirect, long-term positive impacts of the improvement of public administration and institutional capacity, fostering the achievement of the targets of EUSDR's priority areas or giving special attention to eco-innovation (e.g. energy generation/storage/efficiency and environmental-technologies has to be mentioned.

Mobility and transport:

Main effects on mobility and transport issue will be likely under Priority axis 3: Better connected Danube region. Specific objective No 3.1: aims to improve regional connectivity to the TEN-T infrastructure through systematic coordination and preparation of strategic investments in regional transport infrastructure and multimodal nodes, to remove administrative, legal, technical, management obstacles in regional mobility and connectivity, thus will have likely positive impact on mobility and transport issue, as well as the supporting of sustainable freight transport, metropolitan transport systems and mobility in the Danube region

With the improvement of environmentally friendly transport systems general reduction of fossil energy consumption is likely, thus the reduction of transport's environmental impacts is expected.

8.2 EVALUATION OF THE MEASURES INCLUDED IN THE CO-OPERATION PROGRAMME

Priority axis 1: Innovative and socially responsible Danube region

Specific objective 1.1: Improve framework conditions and a balanced access to knowledge

The specific objective will likely have no significant direct effects on the environmental issues, however by giving special attention to eco-innovation (e.g energy efficiency, renewables) and social innovation within smart specialisation, could have long term positive effects on the environmental element, population and human health. In case of projects, that help putting knowledge to use, special attention should be given to environmental impact of new production and service processes.

Specific objective 1.2: Increase competences for business and social innovation

The specific objective will contribute to better education, training and lifelong learning schemes related to innovation. It will improve skills and knowledge to advance social innovation to better meet social needs and further improve the capacities of regions to manage new challenges such as demographic change, migration and brain drain. These could help decrease disparities of labour markets within the Danube region. No significant direct effects on the other environmental issues are foreseen.

Priority axis 2: Environment and Culture responsible Danube region

Specific objective No 2.1: Sustainable use of natural and cultural heritage and resources

The specific objective means preservation and management of the diversity of natural and cultural assets in the Danube region as a basis for sustainable development and growth strategies. To achieve these, sustainable planning and development of tourism are required and has to be supported.

Resource efficiency is a key issue to make the tourism activities more environmentally friendly. Thus the actions that will contribute to this specific objective will likely have a positive effect on natural resources (like water, soil and air), indirect way on biodiversity, flora and fauna (being dependent on clean and sufficient natural resources) and energy resources. Preparation of risk management plans for cultural and natural heritage sites exposed to climate change could help the adaptation and decrease of the vulnerability to climate change. Sustainable planning and management could have a positive effect on the protection and preservation of cultural and natural landscapes for example by the reduction of land consumption, or by reducing effects of transport, agriculture or the growing number of visitors/tourists. The objective could also contribute to human well-being by improving and creating new recreation area.

Specific objective No 2.2: Restoring and managing ecological corridors

The specific objective aims to strengthen the integration of functional ecological networks and green infrastructures by interlinking natural habitats and wildlife corridors, and reducing barriers (e.g. increasing the passability of rivers, green bridges over transport infrastructures). Basically no negative environmental impacts and risks are expected apart from those that could arise during the implementation (construction) of the specific projects.

The focus will be on large-scale riverine networks. Protection and reconnection of natural ecosystems naturally decreases the threat of hazards, such as floods, landslides, thus indirectly helping adaptation to climate change and decreasing vulnerability of water bodies. It can also help maintaining traditional agricultural methods (e.g. floodplain farming). It will also improve the state of wild habitats, biodiversity and the threatened species. By decreasing fragmentation of the landscape will influence in a positive way the well-being of human population as well.

Specific objective No 2.3: Transnational water management and flood risk prevention

In this respect the investments of the programme will support further development of River Basin Management Plans (RBMPs) in the Partner States in line with the overall Danube River Basin Management Plan (DRBMP). The second DRBMP (2015 and 2021) is under development, and aims to further protect and enhance the status of all waters and to ensure the sustainable, long-term use of water resources.

The planned actions will help to tackle poor governance and knowledge gaps in the development of integrated national RBM Plans, by joint monitoring and joint development of measures to improve water quality and ecological status, joint management of flood risks, building awareness for joint action, tackling significant pressures identified in the region (e.g. water pollution, disconnection of adjacent wetlands/floodplains, conflicts with inland navigation and infrastructure projects). Water management aspects such as fixed investments in waste water treatment plants are not part of the programme.

The actions for tackling poor governance and knowledge gaps will have long-term, positive environmental effects, while further measures of this objective have diverse impacts: positive effect on water quality, hydrology and natural water bodies; negatives (in case of hard installation measures on flood protection) on wild habitats. Water management projects should be sustainable.

Specific objective No 2.4: Improve the preparedness to disaster risk management

The specific objective is targeting disaster prevention and management related to risks that are caused by non-functioning ecosystems and man-made changes in climate conditions. The security and emergency issues are mainly in the hands of public authorities along with

civil protection organisation; their preparedness for emergency responses and the related services has to be developed. Regional level early warning system, more practical adaptation strategies, action plans and tools for the adaptation on climate change and its risks has to be improved on a regional scale giving special attention to the DRBM Plan.

The actions supported under this objective should have indirect, positive long-term environmental impacts. Sustainable management and protection of environmental resources aspects have to be taken in consideration at the implementation of the specific projects.

Priority axis 3: Better connected Danube region

Specific objective No 3.1: Environmentally-friendly and safe transport systems and balanced accessibility of urban and rural areas to TEN-T

The specific objective aims to improve regional connectivity to the TEN-T infrastructure through systematic coordination and preparation of strategic investments in regional transport infrastructure and multimodal nodes, to remove administrative, legal, technical, management obstacles in regional mobility and connectivity.

The objective will have likely positive impact on mobility and transport issue, as well as on the supporting of sustainable freight transport, metropolitan transport systems and mobility in the Danube region. Achieving better connectivity and more effective regional transport indirectly will lead to positive impacts on the well-being of the population; decrease in energy consumption and emissions. In case of newly built transport infrastructure will necessarily affect land consumption and landscape. Careful and nature-focused planning might prevent from negative impacts on biodiversity.

Actions helping the increase of multimodality, interoperability and the promotion of the shift to more environment-friendly modes of transport will be supported with focus on sustainable freight transport, metropolitan transport systems and mobility in the Danube region. Exchanging and transferring know-how and good practice in the scope of waterway infrastructure, waterway maintenance and management, fleet modernisation or port (infrastructure) development will play important role in this respect.

Related to the environmental effects, the reduction of transport's environmental impacts is expected. With the improvement of environmentally friendly transport systems general reduction of fossil energy consumption is likely. Though river and sea transport are considered as most sustainable transport modes, impacts on water pollution (dredging, waste, ballast waters and oil spills), noise emission as well as adverse effects on hydromorphology (e.g. changing of flow regime and water level) has to be considered.

Specific objective No 3.2: Improve energy security and energy efficiency

This objective will support the development of a Danube Region Smart Grid Concept. Smart grid technologies and systems reduce energy consumption and losses within electric distribution system increasing this way efficiency and conservation; enable renewable energy integration and PEV (Plug-in Electric Vehicles) integration. Further improvement of the regional policy coordination within the wider context of EU energy policy-making will be supported. The planned actions could contribute to more effective gas distribution networks; increased use of renewable energy sources, as well as improved energy efficiency concentrating on the following fields: improvement of the Danube region gas supply model; development of the region's biomass action plan and energy efficiency concepts; improvement of a comprehensive plan for sustainable development of the hydropower generation potential of the Danube river and its tributaries based on the "Guiding principles on sustainable hydropower development in the Danube basin" (Sarajevo, 2013).

Coordination actions expected under this specific objective and preparation of concepts and development plans will likely have no significant direct effects on the environmental issues. However as long-term, indirect positive effect on air and climate change (by GHG emission reduction) and on energy resources issues has to be enhanced.

The effective consideration of environmental and possibly other sustainability aspects has to be ensured during the planning and coordination actions.

Priority axis 4: Well governed Danube region

Specific objective No 4.1.: Increase institutional capacities to tackle major societal challenges

The specific objective aims the establishment of institutional cooperation within the Danube region. This should lead to improving legal and policy frameworks, developing strategies and action plans, development of joint capacities and coordinated delivery of services in the areas with major societal challenges (e.g. labour market policies and education, demographic change and migration challenges, inclusion of marginalized groups including Roma, civil society development programmes, integration of metropolitan regions in the Danube area, cooperation in security issues/crime prevention).

Although neither positive nor negative primary effects on environmental issues are expected, the improvement of public administration and institutional capacity is a basis for the further development of environmental aspects.

Specific objective No 4.2: Governance of the EUSDR

The specific objective to strengthen the capacities of institutions and actors to implement the EUSDR will likely have no significant direct effect on the environmental issues. Although

the improvement of institutional capacity and fostering the achievement of the targets of EUSDR's priority areas (particularly PA 04 - Water Quality, PA 05 - Environmental Risks and PA 06 - Biodiversity, landscapes, quality of air and soils) will be a basis for the further development of environmental aspects.

8.3 ENVIRONMENTAL OBJECTIVES

The relevant environmental issues and objectives have been selected and formulated on the bases of the EU objectives and obligations. The list of EU policy framework has been presented in Chapter 3.5.

The guiding questions for each environmental issue are derived from environmental protection objectives which are based on environmental policies at EU level. The table shows the protected goods concerned and the guiding questions, which have to be answered during the assessment and the connection with the specific objectives of the co-operation programme.

The requirements for the objectives:

- An objective is a statement of what is intended, specifying a desired direction of change.
- The objectives of the programme are to be based on sustainability considerations, and the development of the SEA objectives may help to promote ideas for making them more environmentally friendly and sustainable.
- SEA objectives, devised to test the environmental effects of the plan or to compare the effects of alternatives.
- Objectives can be expressed so that they are measurable.
- SEA objectives derive from environmental protection objectives identified in other plans and programmes or from a review of baseline information and environmental problems.
- SEA objectives might have been suggested by consultation bodies.



Protected good	Relevant environmental objectives in relation to EU legislation and policies presented in chapter 3.5.	Guiding questions	Connection with PAs and SOs ** - strong connection * - existing connection O – neutral relationship
Water (surface waters, ground water)	<p>Reducing organic, nutrient and hazardous substance pollution, prevention of accidental pollution incidents</p> <p>Improvement of the ecological and chemical status of surface waters and groundwater</p> <p>Promoting sustainable use of water resources by appropriate controls over the abstraction of fresh surface water and groundwater</p> <p>Prevention from and reduction of flood risks (Common approach in assessment and mapping of flood-risk)</p> <p>Improvement of waste water treatment and the reduction of nitrate pollution (e.g. nitrates from agricultural sources or industrial recharges)</p>	<p>Will the programme have effect on pollution prevention and reduction on water bodies?</p> <p>Will the programme have effect on the increasing of ecological and chemical status of surface waters and groundwater?</p> <p>Will the programme help the sustainable water resource management regarding water quantity, quality, groundwater vulnerability and surface – water sensitivity?</p> <p>Will the programme help flood risk mitigation?</p> <p>Will the programme have an effect on the prevention from / reduction of water pollution?</p>	<p>P1 SO1.1 *</p> <p>P1 SO1.2. 0</p> <p>P2 SO2.1. *</p> <p>P2 SO2.2. **</p> <p>P2 SO2.3. **</p> <p>P2 SO2.4. **</p> <p>P3 SO3.1. *</p> <p>P3 SO3.2. *</p> <p>P4 SO4.1. **</p> <p>P4 SO4.2. **</p>
Soil and geological medium	<p>Prevention and reduction of soil contamination</p> <p>Help to maintain soil functions on the highest possible level (according to Thematic Strategy for Soil Protection (EC 2006a,b)</p> <p>Promoting sustainable land-use (e.g. supporting of High Nature Value (HNV) farming, revitalization of brownfields, recultivation of old landfills)</p> <p>Reduce waste generation, increase waste recovery and recycling.</p>	<p>Will the programme affect the increasing of soil quality?</p> <p>Will the programme help to maintain soil functions on highest possible levels?</p> <p>Will the programme promote sustainable land use?</p> <p>Will the programme reduce waste generation, increase waste recovery and recycling?</p>	<p>P1 SO1.1 *</p> <p>P1 SO1.2. 0</p> <p>P2 SO2.1. **</p> <p>P2 SO2.2. *</p> <p>P2 SO2.3. **</p> <p>P2 SO2.4. *</p> <p>P3 SO3.1. **</p> <p>P3 SO3.2. *</p> <p>P4 SO4.1. *</p> <p>P4 SO4.2. *</p>
Biodiversity, flora, fauna	Protection and promotion of natural habitats (e.g. within the NATURA 2000 network)	Will the programme have an effect on promotion and protection of natural habitats?	<p>P1 SO1.1 *</p> <p>P1 SO1.2. 0</p>



	<p>Help to decrease the fragmentation of habitat or species (both aquatic and terrestrial), promoting green infrastructures, restoration of river continuity, wetland areas which are in direct contact with aquifers.</p> <p>Help to stop and prevent the spread of invasive alien species.</p> <p>Promotion of common management off cross-border ecosystems and habitats</p>	<p>Will the programme affect the decrease of habitat and species fragmentation?</p> <p>Will the programme help to stop and prevent the spread of invasive alien species?</p> <p>Will the programme promote the common management off cross-border ecosystems and habitats?</p>	<p>P2 SO2.1. **</p> <p>P2 SO2.2. **</p> <p>P2 SO2.3. **</p> <p>P2 SO2.4. *</p> <p>P3 SO3.1. **</p> <p>P3 SO3.2. *</p> <p>P4 SO4.1. *</p> <p>P4 SO4.2. *</p>
Air, climate change	<p>Reduction of air pollution (e.g. to prevent acidification, eutrophication and ground-level ozone pollution)</p> <p>Reduction of the GHG emissions (min. 18 % below 1990 in the period 2013-2020).</p> <p>Improving common risk assessment and management system for natural and industrial risk sites connected to climate change.</p> <p>Help to decrease vulnerability to the climate change (e.g. sustainable water resource management, green infrastructures, use of drought tolerant plants)</p>	<p>Will the programme have an effect on the reduction of the air pollution?</p> <p>Will the programme have an effect on the GHG emissions?</p> <p>Will the programme effect the improvement of common risk assessment and management system for natural and industrial risk sites connected to climate change?</p> <p>Will the programme help to decrease vulnerability to the climate change?</p>	<p>P1 SO1.1 **</p> <p>P1 SO1.2. 0</p> <p>P2 SO2.1. **</p> <p>P2 SO2.2. **</p> <p>P2 SO2.3. **</p> <p>P2 SO2.4. **</p> <p>P3 SO3.1. **</p> <p>P3 SO3.2. **</p> <p>P4 SO4.1. *</p> <p>P4 SO4.2. *</p>
Landscape and cultural heritage	<p>Cooperate towards the protection, management and planning for quality and diversity of European landscapes</p> <p>Increasing awareness of the value of landscapes, their role and changes to them promoting training and education in landscape policy, protection, management and planning.</p> <p>Protection and preservation as well as sustainable management and planning of European cultural and natural landscape</p> <p>Promoting of sustainable use of material resources</p>	<p>Will the programme protect or increase the quality and diversity of European landscapes?</p> <p>Will the programme increase awareness of the value and role of landscapes?</p> <p>Will the programme promote the sustainable management and planning of European cultural and natural landscape?</p> <p>Will the programme promote the sustainable use of material resources?</p>	<p>P1 SO1.1 0</p> <p>P1 SO1.2. 0</p> <p>P2 SO2.1. **</p> <p>P2 SO2.2. **</p> <p>P2 SO2.3. *</p> <p>P2 SO2.4. *</p> <p>P3 SO3.1. **</p> <p>P3 SO3.2. *</p> <p>P4 SO4.1. *</p> <p>P4 SO4.2. *</p>
Population, human health	<p>Prevention from environmental noise exposure</p>	<p>Will the programme have an effect on noise exposure prevention?</p>	<p>P1 SO1.1 *</p> <p>P1 SO1.2. **</p>



	<p>Prevention and reduction of diseases and negative health impacts caused by environment-related threats.</p> <p>Reduce existing disparities in accessibility to the essential public infrastructures (such as potable water network, sewage system including waste water treatment, as well as waste management).</p> <p>Compliance of water supplies, compliance for drinking water from small supplies, and risk-based approach for more effective quality control (drinking water quality parameters and values) has to be promoted.</p>	<p>Will the programme affect the prevention and reduction of diseases and negative health impacts caused by environment-related threats?</p> <p>Will the programme reduce existing disparities in accessibility to the essential public infrastructures and services?</p> <p>Will the programme increase effectiveness of drinking water quality control and increase drinking water quality?</p>	<p>P2 SO2.1. *</p> <p>P2 SO2.2. **</p> <p>P2 SO2.3. *</p> <p>P2 SO2.4. **</p> <p>P3 SO3.1. **</p> <p>P3 SO3.2. *</p> <p>P4 SO4.1. *</p> <p>P4 SO4.2. *</p>
Energy resources	<p>Improvement of energy efficiency (by 20% by 2020)</p> <p>Increase of use of renewables (20 % of renewable energy by 2020)</p>	<p>Will the programme have an effect on improvement of energy efficiency (by 20% by 2020)?</p> <p>Will the programme have an effect Increase of use of renewables (20 % of renewable energy by 2020)?</p>	<p>P1 SO1.1 *</p> <p>P1 SO1.2. 0</p> <p>P2 SO2.1. *</p> <p>P2 SO2.2. 0</p> <p>P2 SO2.3. *</p> <p>P2 SO2.4. *</p> <p>P3 SO3.1. **</p> <p>P3 SO3.2. **</p> <p>P4 SO4.1. *</p> <p>P4 SO4.2. *</p>
Mobility and transport	<p>Reduction of carbon emissions deriving from transport (by 60 % by 2050)</p> <p>Promotion of environmentally sustainable transport (rail and inland navigation)</p>	<p>Will the programme have an effect on reduction of carbon emissions deriving from transport (by 60 % by 2050).</p> <p>Will the programme have an effect on Promotion of environmentally sustainable transport (rail and inland navigation)?</p>	<p>P1 SO1.1 *</p> <p>P1 SO1.2. *</p> <p>P2 SO2.1. *</p> <p>P2 SO2.2. *</p> <p>P2 SO2.3. 0</p> <p>P2 SO2.4. *</p> <p>P3 SO3.1. **</p> <p>P3 SO3.2. **</p> <p>P4 SO4.1. *</p> <p>P4 SO4.2. *</p>

8.4 ENVIRONMENTAL IMPACT ASSESSMENT

The impact matrix represents the test of the objectives of the programme against the SEA objectives, shows the synergies and inconsistencies.

The columns of the table show the system of sustainability conditions – had been determined by the 1st step – in a simplified, shortened version. The lines are created on the basis of the priority axes and areas of interventions of the Co-operation Programme. Each matrix field shows on which objective a certain condition has impacts, as well as the intensity and direction of their relationship. One of the requirements towards such impact matrices is clarity, while their main flaw in general is the over-complexity of the indications of relationships between the figures.

The comparison between the priority axes and the environmental priorities is the most important task of the SEA. This task can be efficiently performed by the analysis of the impact matrix. Referring to the indication key of the matrix, the relationships presented are marked by L, while the ones not presented in the text (depending whether they do or do not exist in reality, or if it would be desirable to establish them) are marked by O or K. In case L or K is used, we pay special attention because the performance of a certain component may trigger opposite impacts as well, which are detailed in the explanation.

Key:

L – existing relationship, in practice as well

K – relationship direction that can be or shall be established, undeveloped or not established in practice until now

*: O there is relevant negative impact of the specific sustainability factor, this impact is detailed in the textual assessment of the matrix.

O – neutral relationship

++ very positive relationship from the aspect of environmental sustainability

+ positive relationship from the aspect of environmental sustainability

-- very negative relationship from the aspect of environmental sustainability

- negative relationship from the aspect of environmental sustainability



		Priorities and specific objectives									
		PA1: Innovative and socially responsible Danube region		PA2: Environment and Culture responsible Danube region				PA3: Better connected Danube region		PA4: Well governed Danube region	
		SO1.1: Improve framework conditions and a balanced access to knowledge	SO1.2: Increase competencies for business and social innovation	SO2.1: Sustainable use of natural and cultural heritage and resources	SO2.2: Restoring and managing ecological corridors	SO2.3: Transnational water management and flood risk prevention	SO2.4: Preparedness for disaster risk management	SO3.1: Environmentally-friendly and safe transport systems and balanced accessibility of urban and rural areas to TEN-T	SO3.2: Improve energy security and energy efficiency	SO4.1: Multilevel- and transnational governance	SO4.2: Governance of the EUSDR
Water (surface waters, ground water)	Reducing organic, nutrient and hazardous substance pollution, prevention of accidental pollution incidents	L	0	0	K+	L+	L++	K+	L+	L++	L+
	Improvement of the ecological and chemical status of surface waters and groundwater	L	0	L+	L++	L++	L+	L+	L-	L+	L+
	Promoting sustainable use of water resources by appropriate controls over the abstraction of fresh surface water and groundwater	L	K	L+	L+	L++	L	L	L-	L+	L+
	Prevention from and reduction of flood risks (Common approach in assessment and mapping of flood-risk)	L	K	L	L++	L++	L++	0	0	L+	L+



	Improvement of waste water treatment and the reduction of nitrate pollution (e.g. nitrates from agricultural sources or industrial recharges)	L+	0	L	K	L	L+	0	0	L+	L+
Soil and geological medium	Prevention and reduction of soil contamination	L	0	L+	L+	L+	L++	L	L	L+	L+
	Help to maintain soil functions on the highest possible level (according to Thematic Strategy for Soil Protection (EC 2006a,b)	L	0	L+	L++	L++	L++	L-	L	L+	L+
	Promoting sustainable land-use (e.g. supporting of High Nature Value (HNV) farming, revitalization of brownfields, recultivation of old landfills)	L	0	L+	L++	L++	L++	L-	L-	L+	L+
	Reduce waste generation, increase waste recovery and recycling.	L	0	L	0	L	L+	L	L+	L+	L+
Biodiversity, flora, fauna,	Protection and promotion of natural habitats (e.g. within the NATURA 2000 network)	0	0	L+	L++	L++	L+	L-	L-	L+	L+
	Help to decrease the fragmentation of habitat or species (both aquatic and terrestrial), promoting green infrastructures, restoration of river continuity, wetland areas which are in direct contact with aquifers.	0	0	L+	L++	L+	0	L-	L-	L+	L+
	Help to stop and prevent the spread of invasive alien species.	0	0	L+	L++	L++	L	L-	0	L+	L+



	Promotion of common management of cross-border ecosystems and habitats	L	0	L+	L++	L++	L+	L-	L	L++	L+
Air, climate change	Reduction of air pollution (e.g. to prevent acidification, eutrophication and ground-level ozone pollution)	L	0	L	L	0	L++	L+	L+	L+	L+
	Reduction of the GHG emissions (min. 18 % below 1990 in the period 2013-2020).	L	0	L	L	0	L++	L++	L++	L+	L+
	Improving common risk assessment and management system for natural and industrial risk sites connected to climate change	L	0	L+	L++	L++	L++	L+	L+	L++	L+
	Help to decrease vulnerability to the climate change (e.g. sustainable water resource management, green infrastructures, use of drought tolerant plants)	L+	0	L++	L++	L++	L++	L+	L+	L+	L+
Landscape and cultural heritage	Cooperate towards the protection, management and planning for quality and diversity of European landscapes	0	0	L++	L++	L++	L++	L-	L	L+	L+



	Increasing awareness of the value of landscapes, their role and changes to them promoting training and education in landscape policy, protection, management and planning.	0	L+	L++	L++	L+	0	K	L	L+	L+
	Protection and preservation as well as sustainable management and planning of European cultural and natural landscape	0	0	L++	L+	K+	K+	L	L	L+	L+
	Promoting of sustainable use of material resources	L	0	L+	K+	L+	L+	L+	L+	L	L+
Population and human health	Prevention from environmental noise exposure	L	0	L+	L+	0	0	L-	L	L	L+
	Prevention and reduction of diseases and negative health impacts caused by environment-related threats	L+	0	L+	L+	L++	L+	L+	K	L+	L+
	Reduce existing disparities in accessibility to the essential public infrastructures (such as potable water network, sewage system including waste water treatment, as well as waste management).	0	L	0	0	L+	L	L+	L+	L+	L+



	Compliance of water supplies, compliance for drinking water from small supplies, and risk-based approach for more effective quality control (drinking water quality parameters and values) has to be promoted.	L	L	L+	L+	L++	L	L	L-	L+	L+
Energy resources	Improvement of energy efficiency (by 20% by 2020)	L+	0	0	0	K	K	L++	L++	L+	L+
	Increase of use of renewables (20 % of renewable energy by 2020)	L+	0	0	0	K	K	L++	L++	L+	L+
Mobility and transport	Reduction of carbon emissions deriving from transport (by 60 % by 2050)	0	0	0	0	K	K	L++	L+	L+	L+
	Promotion of environmentally sustainable transport (rail and inland navigation)	0	0	L+	L+	L	K	L++	L+	L	L+

8.5 DESCRIPTION OF THE IMPACTS AND MEASURES

Taking into consideration that the long-term goals are important because the specific activities involved in investments, construction projects, due to their nature, damage the environment in almost all cases, but the expected positive results of the same investments considerably outweigh the one-off negative impacts. The environmental impacts of the specific areas of interventions have been analysed. The presumably considerable impacts on the environment have been elaborated and as a result, measures to reduce or to compensate these impacts have been proposed.

The tables present the outline of the measures that can be applied to strengthen positive investment impacts, to mitigate potential negative environmental impacts, to reduce and to

compensate as much as possible for the considerably harmful environmental impacts. The tables present the findings at the level of key areas of interventions.

Description of impacts and measures

Priority axis 1: Innovative and socially responsible Danube region		
Specific objective 1.1: Improve framework conditions and a balanced access to knowledge		
Water: +	Soil and geological medium:+	Biodiversity, flora, fauna: 0
Air, climate change:+	Landscape and cultural heritage:0	Population , human health: +
Energy resources: +		Mobility and transport: +
<p>Description of the likely considerable impacts on the environment: The specific objective will likely have no significant direct effects on the environmental issues, however by giving special attention to eco-innovation (e.g energy efficiency, renewables) and social innovation within smart specialisation, could have long term positive effects on the environmental elements, population and human health.</p>		
<p>Measures to reduce and/or to compensate the considerably harmful environmental impacts The effective consideration of environmental and possibly other sustainability aspects has to be ensured during the R & D, R & I actions. In case of projects, that help putting knowledge to use, special attention should be given to environmental impacts of new production and service processes.</p>		

Priority axis 1: Innovative and socially responsible Danube region		
Specific objective 1.2: Increase competencies for business and social innovation		
Water:0	Soil and geological medium:0	Biodiversity, flora, fauna:0
Air, climate change: 0	Landscape and cultural heritage: 0	Population , human health: +
Energy resources: 0		Mobility and transport:0
<p>Description of the likely considerable impacts on the environment: The specific objective will contribute to better education, training and lifelong learning schemes related to innovation. No significant direct effects on the other environmental issues are foreseen.</p>		
<p>Measures to reduce and/or to compensate the considerably harmful environmental impacts: Raising awareness about climate-conscious behavior and resource efficiency should be promoted during the supported actions.</p>		



Priority axis 2: Environment and Culture responsible Danube region Specific objective No 2.1: Sustainable use of natural and cultural heritage and resources		
Water: +	Soil and geological medium:+	Biodiversity, flora, fauna:++
Air, climate change:+	Landscape and cultural heritage: ++	Population , human health: +
Energy resources: +		Mobility and transport:+
<p>Description of the likely considerable impacts on the environment:</p> <p>The specific objective will have positive effects on natural resources, on biodiversity, flora and fauna and energy resources by focusing on sustainable tourism. Preparation of risk management plans for cultural and natural heritage sites exposed to climate change could help the adaptation and decrease of the vulnerability to climate change. The objective could also contribute to human well-being by improving and creating new recreation area. However, with a growing intensity of tourism (increasing number of visitors and voyages), environmental loads could increase (waste and waste water).</p>		
<p>Measures to reduce and/or to compensate the considerably harmful environmental impacts:</p> <p>Sustainable planning and management could have a positive effect on the protection and preservation of cultural and natural landscapes for example by the reduction of land consumption, or by reducing effects of transport, agriculture or the growing number of visitors/tourists. In order to achieve these:</p> <ul style="list-style-type: none"> • application of renewable energy sources has to be emphasized during project planning and implementation • only projects with no landscape changing impacts should be supported • in case of loss of natural factors (trees, green surfaces etc.) a substitution has to be made. • restoration of buildings and cultural sceneries, as well as reclamation of degraded landscapes should be supported • when new tourist destinations will be available, they should be supplemented by environmentally friendly transport modes • inclusion of principles of sustainable development at implementation of cadastral registration and preparation of maintenance plans 		

Priority axis 2.: Environment and Culture responsible Danube region Specific objective No 2.2.: Restoring and managing ecological corridors		
Water: ++	Soil and geological medium:+	Biodiversity, flora, fauna:++
Air, climate change:+	Landscape and cultural heritage:++	Population , human health: +
Energy resources: 0		Mobility and transport: 0
<p>Description of the likely considerable impacts on the environment:</p> <p>The specific objective indirectly helps adaptation to climate change and decreasing vulnerability</p>		



of water bodies, naturally decreases the threat of hazards, such as floods, landslides. It can also help maintaining traditional agricultural methods (e.g. floodplain farming). Direct positive impacts on biodiversity, flora and fauna are likely, as it will support the integration of functional ecological networks and green infrastructures by interlinking natural habitats and wildlife corridors, and reducing barriers.

The likely decreasing fragmentation of the landscape will influence in a positive way the well-being of human population as well.

Basically no negative environmental impacts and risks are expected apart from those temporary impacts that could arise during the implementation (construction) of the specific projects.

Measures to reduce and/or to compensate the considerably harmful environmental impacts:

Sustainable management and protection of environmental resources aspects have to be taken in consideration at the implementation of the specific projects in order to integrate environmental protection (related to soil pollution and degradation, air pollution, water pollution, waste management, etc) and nature conservation (habitat management and development, reconstruction, biodiversity protection, etc.) issues.

Improvement of data collection and monitoring system for a more accurate assessment of water resource balances (quantity, quality) is needed.

Activities focused on landscape rehabilitation should be preferred.

Priority axis 2.: Environment and Culture responsible Danube region		
Specific objective No 2.3.: Transnational water management and flood risk prevention		
Water: ++	Soil and geological medium: +	Biodiversity, flora, fauna: +/-
Air, climate change: +	Landscape and cultural heritage: +/-	Population, human health: +
Energy resources: 0		Mobility and transport: 0
<p>Description of the likely considerable impacts on the environment:</p> <p>The actions for tackling poor governance and knowledge gaps will have long-term, positive environmental effects, while further measures of this objective have diverse impacts: positive effect on water quality, hydrology and natural water bodies; negatives (in case of hard installation measures on flood protection) on wild habitats and landscape.</p> <p>Positive effects on population and human health issue are likely too, as it influences the quality of water resources, bathing water quality and the water surfaces used for recreational purposes (positive effect on water quality, hydrology and natural water bodies) as well as reduces material and economic damages caused by floods on human population.</p>		
<p>Measures to reduce and/or to compensate the considerably harmful environmental impacts:</p> <p>Sustainable management and protection of environmental resources aspects have to be taken in consideration at the implementation of the specific projects in order to integrate environmental protection (related to soil pollution and degradation, air pollution, water pollution, waste management, etc) and nature conservation (habitat management and development, reconstruction, biodiversity protection, etc.) issues.</p>		

In case of hard installation measures on flood protection negative impact on wild habitats has to be minimized.

To reduce health impacts of floods, health impact assessment of flood-related risks (local and regional scale) should be incorporated into plans and strategies (e.g. land use, building, infrastructure, and economic development plans).

Priority axis 2: Environment and Culture responsible Danube region		
Specific objective No 2.4.: Preparedness for disaster risk management		
Water: +	Soil and geological medium:+	Biodiversity, flora, fauna:+
Air, climate change:+	Landscape and cultural heritage:+	Population , human health: +
Energy resources: 0		Mobility and transport: 0
<p>Description of the likely considerable impacts on the environment:</p> <p>The actions supported under this objective should have indirect, positive long-term environmental impacts. With the development of preparedness of of public authorities and civil protection organisation for emergency responses and the related services will decrease the risk and the impacts of disasters (caused mainly by non-functioning ecosystems and man-made changes) on natural resources and human population.</p>		
<p>Measures to reduce and/or to compensate the considerably harmful environmental impacts:</p> <p>Sustainable management and protection of environmental resources aspects have to be taken in consideration at the implementation of the specific projects. To reduce health impacts of disasters, health impact assessment of disaster-related risks (local and regional scale) should be incorporated into plans and strategies (e.g. land use, building, infrastructure, and economic development plans).</p>		

Priority axis 3: Better connected Danube region		
Specific objective No3.1: Environmentally-friendly and safe transport systems and balanced accessibility of urban and rural areas to TEN-T		
Water: 0/-	Soil and geological medium:0	Biodiversity, flora, fauna:0/-
Air, climate change:+	Landscape and cultural heritage:+/-	Population , human health: +/-
Energy resources: +		Mobility and transport: ++
<p>Description of the likely considerable impacts on the environment:</p> <p>This objective will have likely positive impact on mobility and transport issue, as well as on the supporting of sustainable freight transport, metropolitan transport systems and mobility in the Danube region. The reduction of transport’s overall environmental impacts is expected. With the improvement of environmentally friendly transport systems general reduction of fossil energy consumption is likely. Achieving better connectivity and more effective regional</p>		



transport indirectly will lead to positive impacts on the well-being of the population; decrease in energy consumption and emissions. The newly built transport infrastructure will necessarily affect land consumption and landscape.

Regarding infrastructural projects, in case of newly developed roads, growing traffic intensity is likely, causing increase of noise level and air pollution load with likely negative impacts on human health.

During construction works there is also a risk of increasing noise level and air pollution loads with possible negative temporary impacts on human health.

Though river and sea transport is considered as most sustainable transport mode, it's water pollution (dredging, waste, ballast waters and oil spills), the noise emission as well as adverse effects on hydromorphology (e.g. changing of flow regime and water level) and serious risks on water habitats and biodiversity has to be considered.

Measures to reduce and/or to compensate the considerably harmful environmental impacts:

Careful and nature-focused planning might prevent from potential negative impacts on biodiversity, land consumption and landscape, thus consideration of environmental resources and nature conservation aspects (with special emphasis on waste generation and waste management issues, noise and air emissions) are indispensable at the implementation of these specific projects.

Specific attention should be placed on noise generation and air pollution load, waste generation and waste management issues, as well as on adverse effects on hydromorphology during construction of new infrastructures in order to minimize the risk of likely negative impacts on natural resources and human health.

To reduce risks and negative impacts on environment and human health, continuous monitoring of the Danube has to be ensured in order to can follow and manage changes in water quality, noise levels, water levels, habitat conditions.

Priority axis 3: Better connected Danube region		
Specific objective No 3.2: Improve energy security and energy efficiency		
Water: 0/-	Soil and geological medium: 0	Biodiversity, flora, fauna: 0/-
Air, climate change:+	Landscape and cultural heritage: 0	Population , human health: +
Energy resources: ++		Mobility and transport: +
<p>Description of the likely considerable impacts on the environment:</p> <p>Smart grid technologies and systems reduce energy consumption and losses within electric distribution system increasing this way efficiency and conservation; enable renewable energy integration and PEV (Plug-in Electric Vehicles) integration. Regarding these actions, no significant direct effects on the environmental issues are likely, however as long-term, indirect positive effect on air and climate change (by GHG emission reduction) and on energy resources issues has to be enhanced.</p> <p>The preparation of concepts and development plans will likely have no significant direct effect on the environmental issues. It will affect indirectly in positive way the energy</p>		



resources issue. Improperly use of thermal water, one-sided biomass production (monoculture) could lead to soil quality degradation. Settling renewable energy plants (hydropower plants, windmills, solar cells) infrastructures might have a negative impact on landscape. Regarding construction, infrastructural development projects, there is a risk of increasing noise level and air pollution loads with likely negative impacts on human health.

Measures to reduce and/or to compensate the considerably harmful environmental impacts:

The effective consideration of environmental and possibly other sustainability aspects has to be ensured during the planning and coordination actions.

In order to avoid negative side-effects of growing green energy utilization, improperly use of thermal water, one-sided biomass production (monoculture) leading to loss of biodiversity has to be avoided. Settling renewable energy plants (hydropower plants, windmills, solar cells) infrastructures might have a negative impact on landscape. Supporting these settlements is suggested only under strict control of and cooperation with authorities.

Special attention has to be paid on improvement of a comprehensive plan for sustainable development of the hydropower generation potential of the Danube river and its tributaries, where consideration of environmental and sustainability aspects has to be ensured during the planning phase in order to avoid adverse effects on the river eco-system.

Regulation on careful use of thermal water has to be involved in the energy planning and coordination actions in order to avoid overexploitation of underground thermal water, or realise of salty and warm waters into surface water bodies and water habitats.

Specific attention should be placed on noise generation and air pollution load during planning of construction and infrastructural development projects in order to reduce the possible risks and negative impacts on human health.

Priority axis 4: Well governed Danube region Specific objective No 4.1: Increase institutional capacities to tackle major societal challenges		
Water: 0	Soil and geological medium: 0	Biodiversity, flora, fauna: 0
Air, climate change:0	Landscape and cultural heritage:0	Population , human health:++
Energy resources: 0		Mobility and transport: +
<p>Description of the likely considerable impacts on the environment:</p> <p>Although neither positive nor negative primary effects on environmental issues are expected, the improvement of public administration and institutional capacity will likely have secondary, long-term positive impacts on the environmental issues. Positive impacts on social and mobility issues have to be enhanced in case of actions supported under this specific objective.</p>		
<p>Measures to reduce and/or to compensate the considerably harmful environmental impacts:</p> <p>Raising awareness about climate-conscious behavior and resource efficiency. Facilitate sustainable development approach with administrative tools.</p>		



Promoting waste recycling/reuse processes in offices (e.g. paper reuse, selective waste collection).
Facilitate the application of renewable sources.

Priority axis 4: Well governed Danube region		
Specific objective No 12: Governance of the EUSDR		
Water: +	Soil and geological medium:+	Biodiversity, flora, fauna:+
Air, climate change:+	Landscape and cultural heritage:+	Population , human health: +
Energy resources: +		Mobility and transport: +
<p>Description of the likely considerable impacts on the environment:</p> <p>The specific objective will likely have no significant direct effect on the environmental issues, although the improvement of institutional capacity and fostering the achievement of the targets of EUSDR's priority areas (particularly PA 04 - Water Quality, PA 05 - Environmental Risks and PA 06 - Biodiversity, landscapes, quality of air and soils) will be a basis for the further development of environmental aspects.</p>		
<p>Measures to reduce and/or to compensate the considerably harmful environmental impacts:</p> <p>Raising awareness about climate-conscious behavior and resource efficiency should be promoted during the supported actions. Sustainable development approach with administrative tools should be promoted (e.g. . waste recycling/reuse processes in offices, sustainable public procurement).</p>		

9. MONITORING INDICATORS

The proposed monitoring indicators are based on the relevant environmental objectives specified in Chapter 8.3. In general, the purpose of environmental objectives is to improve environmental indicators. More specifically, the objectives of the individual intervention areas (in accordance with different environmental elements) are determined by national and international regulatory standards.

Tracking the achievement of environmental goals should be implemented via various indicators. Depending on the particular area of intervention, outcome or effect indicators are proposed. The former measures the direct impact (e.g. environmental quality improvement, quantified indicators), while the latter takes into consideration long-term, indirect effects. The use of effect indicators is suggested at strategic planning level, while during fulfilment of legal regulations (including compliance with EU directives), the use of outcome indicators are recommended.

Water:

Trend in “zero option”: +

Development with the programme: ++

Relevant environmental objectives presented in chapter 8.3.	Monitoring indicators	Data sources and basis
<p>Reducing organic, nutrient and hazardous substance pollution, prevention of accidental pollution incidents</p> <p>Improvement of the ecological and chemical status of surface waters and groundwater</p> <p>Promoting sustainable use of water resources by appropriate controls over the abstraction of fresh surface water and groundwater</p> <p>Prevention from and reduction of flood risks (Common approach in assessment and mapping of flood-risk)</p> <p>Improvement of waste water treatment and the reduction of nitrate pollution (e.g. nitrates from agricultural sources or industrial recharges)</p>	<ol style="list-style-type: none"> 1. decrease in proportion of classified water bodies in different RBDs affected by pollution pressures (% of classified water bodies affected by point and/or diffuse pressure) 2. decreasing concentrations of nutrients in freshwaters (mg nitrate-nitrogen(mg NO₃-N)/l for rivers; orthophosphate in rivers as mg P/l; total phosphorus in lakes (mg/l P)) 3. decreasing concentrations of nitrate in groundwater (mg nitrate (NO₃)/l)decrease of water exploitation index (WEI) (Annual total water abstraction as a percentage of available long-term freshwater resources) 4. decreasing number of people affected by flooding per million population in the WHO European Region (number of affected people per million inhabitants per country) 	<ol style="list-style-type: none"> 1. EEA ETC/ICM, 2012a http://www.eea.europa.eu/publications/european-waters-assessment-2012 2. Nutrients in freshwater (CSI 020)/EEA/ Oct 2012 http://www.eea.europa.eu/data-and-maps/indicators/nutrients-in-freshwater/nutrients-in-freshwater-assessment-published-3#toc-5 3. (CSI 018)/EEA/Dec 2010 http://www.eea.europa.eu/data-and-maps/indicators/use-of-freshwater-resources/use-of-freshwater-resources-assessment-2 4.(CLIM 046)/EEA/Nov 2012 http://www.eea.europa.eu/data-and-maps/indicators/floods-and-health/assessment

Soil and geological medium

Trend in “zero option”: + / -

Development with the programme: +

<p>Prevention and reduction of soil contamination</p> <p>Help to maintain soil functions on the highest possible level (according to Thematic Strategy for Soil Protection (EC 2006a,b)</p> <p>Promoting sustainable land-use (e.g. supporting of High Nature Value (HNV) farming, revitalization of brownfields, recultivation of old landfills)</p> <p>Reduce waste generation, increase waste recovery and recycling.</p>	<ol style="list-style-type: none"> 1. progress in management of contaminated sites (expressed per management step and against established targets where relevant) 2. decrease of estimates for potentially contaminated sites and contaminated sites (number of sites/1000 capita) 3. decrease of nitrate concentrations in groundwater (mg nitrate (NO₃)/l) 4. decrease of municipal waste generation (Municipal Solid Waste (MSW) kg/capita) 5. growing of municipal waste recycling rates (The total recycling of municipal waste stated in percentage of the generated amount) 	<ol style="list-style-type: none"> 1.-2. (LSI 003/ CSI 015)/EEA/May 2014 http://www.eea.europa.eu/data-and-maps/indicators/progress-in-management-of-contaminated-sites-3/ 3. Nutrients in freshwater (CSI 020)/EEA/ Oct 2012 http://www.eea.europa.eu/data-and-maps/indicators/nutrients-in-freshwater/nutrients-in-freshwater-assessment-published-3#toc-5 4. (CSI 016/WST 001)/EEA/Dec 2011 http://www.eea.europa.eu/data-and-maps/indicators/municipal-waste-generation/municipal-waste-generation-assessment-published-4 5. EEA Report No 2/2013 http://www.eea.europa.eu/publications/managing-municipal-solid-waste
--	--	---

Biodiversity, flora, fauna

Trend in “zero option”: + / -

Development with the programme: + / 0

<p>Protection and promotion of natural habitats (e.g. within the NATURA 2000 network)</p> <p>Help to decrease the fragmentation of habitat or species (both aquatic and terrestrial), promoting green infrastructures, restoration of river continuity, wetland areas which are in direct contact with aquifers.</p> <p>Help to stop and prevent the spread of invasive alien species.</p> <p>Promotion of common management off cross-border ecosystems and habitats</p>	<ol style="list-style-type: none"> 1. change in the share of Natura 2000 designated areas per country (under national designation/only under EU Habitats Directive) (% of total Natura 2000 designated areas per country) 2. decrease in number of worst invasive alien species registered per country (species/1000 km²) 3. progress in common bird index 	<ol style="list-style-type: none"> 1. EEA - Natura 2000 data - the European network of protected sites http://www.eea.europa.eu/data-and-maps/figures/share-of-designated-areas-per-country-in-the-following-categories-only-under-national-designation-only-under-eu-habitats-directive-designation-and-both-at-national-and-eu-habitats-directive-designation#tab-european-data 2. (SEBI 010) /EEA/ May 2010 http://www.eea.europa.eu/data-and-maps/indicators/invasive-
---	--	---

	<p>(Bird population index (year 1990 = 100): sample of the national populations of 163 species of common birds).</p> <p>4. Extent of established corridors and/or ecosystems (km²)</p>	<p>alien-species-in-europe/invasive-alien-species-in-europe</p> <p>3. env_bio2/EUROSTAT/ Mar 2014</p> <p>http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/dataset?p_product_code=TSDNR100</p> <p>4. proposed indicator, no available statistical data</p>
--	---	--

Air, climate change

Trend in “zero option”: + / -

Development with the programme: ++

<p>Reduction of air pollution (e.g. to prevent acidification, eutrophication and ground-level ozone pollution)</p> <p>Reduction of the GHG emissions (min. 18 % below 1990 in the period 2013-2020).</p> <p>Improving common risk assessment and management system for natural and industrial risk sites connected to climate change.</p> <p>Help to decrease vulnerability to the climate change (e.g. sustainable water resource management, green infrastructures, use of drought tolerant plants)</p>	<p>1. decreasing total greenhouse gas (GHG) emission trends and projections ('million tonnes CO₂-equivalent' (Mt CO₂-eq.)</p> <p>2. decreasing sulphur dioxide SO₂ emissions (change in emissions of sulphur oxides compared with the 2010 NECD and Gothenburg protocol targets: %)</p> <p>3. Decreasing transport emissions of air pollutants (Transport emissions of PM_{2.5}, CO, SO_x, NMVOC, NO_x in EEA member countries: trends compared to 1990 level, where 1990 level = 100)</p>	<p>1. (CSI 010/CLIM 050) /EEA/Jun 2014</p> <p>http://www.eea.europa.eu/data-and-maps/indicators/greenhouse-gas-emission-trends-5/</p> <p>2. (APE 001)/EEA/Jan 2014</p> <p>http://www.eea.europa.eu/data-and-maps/indicators/eea-32-sulphur-dioxide-so2-emissions-1/assessment-3#methodology</p> <p>3. (TERM 003)/EEA/Feb 2013</p> <p>http://www.eea.europa.eu/data-and-maps/indicators/transport-emissions-of-air-pollutants-8/transport-emissions-of-air-pollutants-9</p>
---	---	--

Landscape and cultural heritage

Trend in “zero option”: 0

Development with the programme: + / 0

<p>Cooperate towards the protection, management and planning for quality and diversity of European landscapes</p> <p>Increasing awareness of the value of landscapes, their role and changes to them promoting training and education in landscape policy,</p>	<p>1. decrease in number of mashes/1000 km²</p>	<p>1. EEA: Landscape fragmentation in NUTS-X regions in 2009</p> <p>http://www.eea.europa.eu/data-and-maps/figures/landscape-fragmentation-in-nuts-x</p>
--	--	---



<p>protection, management and planning. Protection and preservation as well as sustainable management and planning of European cultural and natural landscape Promoting of sustainable use of material resources</p>	<p>2. increasing amount of funding provided to heritage agencies responsible for heritage places and objects.</p>	<p>2. proposed indicator, no available statistical data</p>
--	---	---

Population, human health

Trend in “zero option”: + / -

Development with the programme: +

<p>Prevention from environmental noise exposure Prevention and reduction of diseases and negative health impacts caused by environment-related threats. Reduce existing disparities in accessibility to the essential public infrastructures (such as potable water network, sewage system including waste water treatment, as well as waste management). Compliance of water supplies, compliance for drinking water from small supplies, and risk-based approach for more effective quality control (drinking water quality parameters and values) has to be promoted.</p>	<p>1. growing rate of population connected to wastewater collection and treatment systems by NUTS 2 regions (%) 2. decrease in the proportion of population living household that feel exposed to noise (%) 3. decrease urban population exposure to air pollution by ozone (Micrograms per cubic metre day) 4. decreasing share of population 65 or over, perceiving their health status as bad or very bad (%) 5. Drinking Water Quality improvement (microbiology and chemical sample compliance % in large and small supplies)</p>	<p>1. tgs00110/EUROSTAT/ Jul 2014 http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/dataset?p_product_code=TGS00110 2. tsdph390/EUROSTAT/ Jul 2014 http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/dataset?p_product_code=TSDPH390 3. tsdph380/EUROSTAT/ Jul 2014 http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/dataset?p_product_code=TSDPH380 4. hlth_silc_10/EUROSTAT/ Dec 2013 http://epp.eurostat.ec.europa.eu/statistics_explained/index.php?title=File:QoL-Share_of_population_65_or_over,_perceiving_their_health_status_as_bad_or_very_bad,_2011%281%29.png&filetimestamp=20131205190454#filelinks 5. EEA: this content has been archived on 12 May 2014, reason: Content not regularly updated. The way data are collected, processed and reported differs across the EU, which makes it difficult to compare situations in different Member States with regard to their performance and</p>
--	--	---

		compliance with the Drinking Water Directive
--	--	--

Energy resources

Trend in “zero option”: +

Development with the programme: ++

Improvement of energy efficiency (by 20% by 2020) Increase of use of renewables (20 % of renewable energy by 2020)	1. Share of renewable energy to final energy consumption (% with normalised hydro and wind)	1.(ENER 028)/EEA/Mar 2013 http://www.eea.europa.eu/data-and-maps/figures/share-of-renewable-energy-to-7
	2. Trends in household energy consumption for space heating/cooling (trends -%/year - in household energy consumption per m2)	2. (ENER 037)/EEA/Mar 2013 http://www.eea.europa.eu/data-and-maps/indicators/progress-on-energy-efficiency-in-europe/assessment

Mobility and transport

Trend in “zero option”: + / -

Development with the programme: +

Reduction of carbon emissions deriving from transport (by 60 % by 2050) Promotion of environmentally sustainable transport (rail and inland navigation)	1. Modal split of freight transport (road, rail and inland waterways) (% in total inland freight tonne-km (tkm))	1.tsdtr220/EUROSTAT/Jun 2014 http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/dataset?p_product_code=TSDTR220
	2. reduction of road sector energy consumption (% of total country energy consumption)	2. The World Bank/2014/Environment/3.13/World Development Indicators: Traffic and congestion http://data.worldbank.org/indicator/IS.ROD.ENG.Y.ZS
	3. decreasing CO2 emissions, passenger-km and tonne-km from road, rail and inland shipping (g/passenger-km; g/tonne-km)	3. Environmental statistics compiled by the DG Environment http://www.eea.europa.eu/data-and-maps/indicators/energy-efficiency-and-specific-co2-emissions

Key:

++	Very positive development	--	Very negative impact
+	Positive development	o	No change
+/-	Positive and negative impact	=	No Assessment possible
-	Negative impact		

10. CONCLUSIONS AND RECOMMENDATIONS

General conclusions

The Co-operation Programme (CP) reinforces the targets of the Europe 2020, thus aims at contributing to sustainable growth, to reduction of energy consumption and to increase of the usage of renewable energy. These targets are well reflected under the 4 Priority axes (PA) and the programme's specific objectives (SO). Six of formulated specific objectives will contribute to environmental (e.g.: transnational water management, restoration of ecological corridors) and sustainability (e.g.: green transportation, smart and clean energy networks, increasing renewable energy usage and effectiveness of energy use) issues, while 4 specific objectives refer to innovation, social responsibility and governance issues.

Concerning to the possible environmental effect of the CP, the assessment at the programme level can only provide a general outline of possible impacts, due to the fact, that more detailed information on the likely environmental effects will occur at the implementation phase of the projects.

The majority of the specific objectives of the Co-operation Programme refer to improvement of institutional and infrastructural framework conditions and policy instruments, capacity building, coordination and planning, thus the possible environmental effects of the CP will primarily be of indirect nature. Nevertheless, the promotion of these actions forms the basis for further investment activities.

Special attention should be paid to objectives and actions linked to improvement of transport system and preparation of strategic investments in regional transport infrastructure, promotion of sustainable freight transport, waterway maintenance and management. Supporting of these actions could lead to an increase in land take, fragmentation of habitats and additional impact through air and noise pollution in sensitive areas. The effective consideration of environmental and possibly other sustainability aspects has to be ensured, as well as in case of energy planning and coordination actions in order to avoid negative side-effects of growing green energy utilization (e.g. one-sided biomass production, adverse effects on hydromorphology, noise, negative impact on landscape). Supporting these settlements is suggested only under strict control of and cooperation with authorities.

Recommendations for programme formulation

The following recommendations refer mainly to mitigation and prevention of the potential environmental impacts occurring with the implementation of the Programme. Several suggestion of the consultation process of the Scoping report preparation has been also included. In general, it should be noted that the overall assessment of the programme is

positive and an improvement of the environmental status is possible, provided that environmental awareness is emphasized and required in the tender of specific projects!

- The effective consideration of environmental and possibly other sustainability aspects has to be ensured during the R & D, R & I actions. In case of projects, that help putting knowledge to use, special attention should be given to environmental impacts of new production and service processes.
- Related to natural and cultural heritage valorisation objective, projects with no landscape changing impacts should be supported. In case of loss of natural factors (trees, green surfaces etc.) a substitution has to be made.
- In case of hard installation measures on flood protection negative impact on wild habitats has to be minimized.
- To reduce health impacts of disasters, health impact assessment of disaster-related risks (local and regional scale) should be incorporated into plans and strategies (e.g. land use, building, infrastructure, and economic development plans).
- Related to planning, coordination and management of regional transport systems objective, careful and nature-focused planning might prevent from potential negative impacts on biodiversity, land consumption and landscape, thus consideration of environmental resources and nature conservation aspects are indispensable at the implementation of these specific projects.
- Specific attention should be placed on noise generation and air pollution load, waste generation and waste management issues, as well as on adverse effects on hydromorphology and water pollution (dredging, waste, ballast waters and oil spills) during planning of implementation projects related on transport issues (e.g. construction of new infrastructures, change in traffic intensity)
- Special attention has to be paid on improvement of a comprehensive plan for sustainable development of the hydropower generation potential of the Danube river and its tributaries, where consideration of environmental and sustainability aspects has to be ensured during the planning phase in order to avoid adverse effects on the river eco-system - in accordance with "Guiding principles on sustainable hydropower development in the Danube basin" (Sarajevo, 2013).
- Regulation on careful use of thermal water has to be involved in the energy planning and coordination actions in order to avoid overexploitation of underground thermal water, or realise of salty and warm waters into surface water bodies and water habitats.
- Specific attention should be placed on noise generation and air pollution load during planning of implementation projects related on transport and energy management (construction, infrastructural developments) in order to reduce the possible negative impacts on human health. Initial state of noise levels has to be

defined in the potential implementation area in order to reduce environmental risks of the proposed specific projects.

- When supporting and investing into renewables, the available sources in the site, environmental and cost effective alternatives should be more carefully examined and considered.
- Improvement of data collection and monitoring system for a more accurate assessment of water resource balances (quantity, quality) is needed.
- To reduce risks and negative impacts on environment and human health of actions supported under SO 3.1, continuous monitoring of the Danube has to be ensured in order to can follow and manage changes in water quality, noise levels, water levels, habitat conditions.

Proposed amendments

- Restoration of buildings and cultural sceneries, as well as reclamation of degraded landscape can lead to an improvement of landscape, thus related action should be supported under Specific objective No 2.1.: Natural and cultural heritage valorisation
- Actions, promoting sustainable land-use and agriculture (e.g. supporting of High Nature Value (HNV) farming animal grazing, field management, floodplain farming) should be supported under Specific objective No 2.3: Transnational water management and flood risk prevention
- Actions, promoting tackle illegal waste deposit problems on protected area and close to cultural and natural heritage sites should be supported under Priority axis 2: Environment and Culture responsible Danube region
- Regarding research and innovation actions, further improvement of wastewater treatment (e.g. removal of endocrine disruptors, other pharmaceuticals) should be promoted.

11. SEA MONITORING AND FOLLOW UP MEASURES

According to Article 10 of the SEA Directive EU/2001/42, the significant environmental effects of the implementation of the Danube Transnational Co-operation Programme, identified within the existing environmental assessment, are to be monitored in order to identify at an early stage unforeseen adverse effects and to be able to undertake appropriate remedial action.

The monitoring system and the monitoring measures need to be operated as part of the co-operation programme management and must form part of and be implemented within the programme. At the programme level, the monitoring of environmental effects should be incorporated into the monitoring framework of the programme.

The environmental indicators on programme level have been proposed in Chapter 9. for each of the relevant environmental objectives. The monitoring at program-level should focus on the significant environmental effects.

The SEA team also proposes to selectively use specific monitoring indicators in order to monitor environmental effects based on the characteristics of the projects selected for funding. It is expected that those environmental objectives which were used within the project evaluation and selection, will be further used for the monitoring of the project. By monitoring and summarising the monitoring results of each project, it will then be possible to estimate the overall environmental impact on the relevant environmental objectives. The following specific recommendations were defined and suggested at project level:

The minimal environmental criteria should be defined and introduced into project generation and selection. Within the quality assessment of the project proposals possible effects on the environment should be considered as a horizontal issue. Furthermore, the project applicants should describe within the application forms which possible environmental effects the project will likely have. Projects that cannot comply with the minimum environmental criteria should be rejected.

Horizontal issues of the CP or at least Call for Proposals should include more aspects of resource efficiency (water, energy, waste)

During the implementation of the projects monitoring measures should also be implemented. Several activities are also suggested to support with preference in the selection criteria:

- to integrate climate protection (including reduction of GHG emission) and climate adaption into horizontal principle,
- to integrate nature protection (conservation of biodiversity) into horizontal principle,

- to integrate also criteria of energy efficiency (in addition to use of renewable energy) into horizontal principle,
- climate-friendly architectural solutions to prefer,
- only the use of silent road surface for road construction in populated areas with larger noise-vibration should be promoted,
- „silent mode” as selection criteria in case of vehicle purchase for transport improvements should be applied,
- opportunities for passive noise reduction (noise barrier, protecting trees) should be included in the eligible activities,
- raising awareness about climate-conscious behaviour,
- application of renewable energy sources has to be emphasised during project planning and implementation,
- environmental technologies and environmental related services are preferred to put into focus,
- brownfield investment preference should be built in the selection criteria,
- more aspects of resource efficiency should be included.

The assessment of the significant effects of activities and projects on relevant environmental issues and the implementation of corrective measures in case the monitoring system shows unexpected adverse effects on the programme implementation, are also requirements for future programme evaluation.

12. TRANSBOUNDARY IMPACTS

According to Art.7 of the SEA Directive the likely significant effects of the Co-operational Programme must be taken into consideration in relation to those third countries which territories will be affected by the implementation of the Danube Transnational Co-operation Programme 2014.

The planned priority axes and thematic objectives in relation to the foreseeable negative effects on third countries, the expected cross-border impacts of the implementation of activities under the investment priorities have been investigated.

In case of the Danube Transnational Co-operation Programme adverse transboundary effect may generate from the following specific objectives:

- SO 3.1: Environmentally-friendly and safe transport system and balanced accessibility of urban and rural areas to TEN-T

Actions supported under SO 3.1. could lead to an increase in land take, fragmentation of habitats and additional impact through air and noise pollution in sensitive areas.

- SP 3.2: Improve energy security and energy efficiency

In order to avoid negative side-effects of growing green energy utilization, improper use of thermal water, one-sided biomass production (monoculture) has to be avoided. Settling renewable energy plants (hydropower plants, windmills) infrastructures might have tempered negative transboundary impact on landscape, water resources. Supporting these settlements is suggested only under strict control of and cooperation with authorities of the affected countries/regions.

Regarding human health aspects, specific attention should be placed on noise generation and air pollution load during planning of implementation projects related on transport and energy management (construction, infrastructural developments) in order to reduce the possible negative long-term and temporary impacts on human health according to EU Decision on serious cross-border threats to health (adopted on 22 October 2013).

Based on the current information the proposed objectives of the programme and planned activities will not have significant adverse transboundary environmental impacts, third countries would not be affected by a significant adverse transboundary impact because of and along the following:

- The objectives that will need transnational cooperation (e.g. flood management, restoring and managing ecological corridors, disaster risk management) will likely have positive impacts on environmental issues.

- The potential transboundary impact of the proposed activities might be reduced or eliminated by the suggested measures.
- In case of projects with a more direct, regional/local impact (typically transport projects) the possible adverse transboundary impacts could be minimized with effective consideration of environmental and possibly other sustainability aspects

Further assessment of possible transboundary impacts should be analyzed at EAI level (at project level) during the planning of specific projects in the frame of the co-operation programme.

In this case the involvement of and the consultation with third countries is not necessary.

13. TECHNICAL APPENDICES

ANNEX 1: LIST OF ENVIRONMENTAL AUTHORITIES TOOK PART IN THE CONSULTATION

Austria	All 9 Head Offices (“Landesamtdirektionen”) of the Regional Governments for further proceedings (Vienna, Lower Austria, Burgenland, Upper Austria, Styria, Carinthia, Salzburg, Tyrol, Vorarlberg) Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management Environment Agency Austria
Slovak Republic	Ministry of Environment of the Slovak Republic
Czech Republic	Ministry of the Environment of the Czech Republic - Department of EIA and Integrated Prevention, Unit of SEA
Germany	Deutscher Verband für Wohnungswesen, Städtebau und Raumordnung e. V.
Hungary	National Inspectorate For Environment and Nature Ministry of Human Resources, Deputy State Secretary for Health Policy National Public Health and Medical Officer Service Ministry of Agriculture
Slovenia	Ministry of Agriculture and the Environment - Environment Directorate
Romania	Ministry of Environment and Climate Change - Generale Directorate for Environment Directorate for Pollution Control and Impact Assessment Impact Assessment Unit
Ukraine	Ministry of Ecology and Natural Resources of Ukraine
Bulgaria	Ministry of Environment and Water of Republic of Bulgaria (MoEW) Ministry of Health Directorate „Public Health”
Croatia	Ministry of Environmental and Nature Protection - Sector for Assessment on the Environment and Industrial Pollution

	<p>Ministry of Culture</p> <p>Ministry of Health</p> <p>Ministry of Science, Education and Sports</p> <p>Ministry of Agriculture</p> <p>Ministry of Maritime Affairs, Transport and Infrastructure</p>
Serbia	<p>Article 18 of the Law on Strategic Environmental Impact Assessment of the Republic of Serbia:</p> <p>Ministry of Agriculture and Environmental Protection, Republic of Serbia</p>
Bosnia and Herzegovina	<p>and Separate legal act concerning SEA does not exist yet in Bosnia and Herzegovina. The new Law on Environment Protection of Federation of Bosnia and Herzegovina is in parliamentary procedure of adoption. Therefore consultations regarding scoping report were not conducted as found not applicable in Bosnia and Herzegovina.</p> <p>Nevertheless the responsible authorities are:</p> <p>Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina - Sector for Natural Resources, Energy and Environmental protection</p> <p>Ministry of Environment and Tourism of Federation of Bosnia and Herzegovina</p> <p>Ministry of Spatial Planning of Federation of Bosnia and Herzegovina</p> <p>Ministry of Spatial Planning, Civil Engineering and Ecology of Republic of Srpska</p> <p>Ministry of Agriculture, Forestry and Water Management of Republic of Srpska</p>
Montenegro	<p>Environmental Protection Agency of Montenegro and the following stakeholders:</p> <p>Ministry of Interior, Ministry of Finance, Ministry of Education, Ministry of culture, Ministry of Economy, Ministry of Transport and Maritime Affairs, Ministry of Agriculture and Rural Development, Ministry of Sustainable Development and Tourism, Ministry of Health, Ministry of Human and Minority Rights, Ministry for Information Society and Telecommunications, Ministry of Labour and Social Welfare, Ministry of Science, Union of Municipalities, Municipality Bar, Municipality Budva, Municipality Cetinje, Municipality Danilovgrad, Municipality Herceg Novi, Municipality Kotor, Municipality Nikšić, Municipality Podgorica, Municipality Tivat, Municipality Ulcinj, Municipality Kolašina, Municipality Plav, Municipality Andrijevica, Municipality Šavnik, Municipality Plužine, Municipality Žabljak, Municipality</p>



Mojkovac, Municipality Berane, Municipality Rožaje, Municipality Pljevlja, Municipality Bijelo Polje, Employment Agency of Montenegro, Montenegro Chamber of Commerce, Union of Montenegrin Employers, Trade Union Federation of Montenegro, Union of Free Trade Unions of Montenegro, Directorate for Small and Medium Enterprises, Agency for Environmental Protection, National Touristic Organization, Touristic Organization Bar, Touristic Organization Budva, Touristic Organization Cetinje, Touristic Organization Danilovgrad, Touristic Organization Herceg Novi, Touristic Organization Kotor, Touristic Organization Nikšić, Touristic Organization Podgorica, Touristic Organization Tivat, Touristic Organization Ulcinj, Center for Social Work Bar, Center for Social Work Herceg Novi, Center for Social Work Kotor, Center for Social Work Nikšić, Center for Social Work Podgorica, Children's Home Youth Bijela, care center for children with disabilities and special needs Herceg Novi, "Lovćen-Bečići" Cetinje, Day care center for children and youth with disabilities and special needs Royal Capital Cetinje, Resource Center for Hearing and Speech Kotor "Dr Peruta Ivanović", Resource Center for Children and Youth, "Podgorica" Center "Komanski most" Podgorica, Center for Children and Youth, "Ljubović" Podgorica, Resource center for children and people with intellectual disabilities and autism, "1.jun" Podgorica, Public Institution for accommodation, rehabilitation and re-socialization of psychoactive substances, Podgorica Day care center for children and youth with disabilities and special needs "SIRENA" Ulcinj Clinical Center Montenegro, General Hospital Bar, General Hospital "Danilo I" Cetinje, General Hospital Kotor, General Hospital Nikšić, Health Center Bar, Health Center Budva, Health Center Cetinje, Health Center Danilovgrad, Health Center Herceg Novi, Health Center Kotor, Health Center Nikšić, Health Center Podgorica, Health Center Tivat, Health Center Ulcinj, Special Hospital for Orthopaedics, Neurosurgery and Neurology "Vaso Čuković" Risan, Special Hospital for Pulmonary Diseases „Dr Jovan Bulajić“ Brezovik, Special hospital for psychiatry – Dobrota, Kotor, Cultural Center Bar, Theatre City Budva, Museum of the City of Budva, Royal Theatre Zetski dom Cetinje, National Museum of Montenegro / Cetinje, Heritage Museum of Herceg Novi, Maritime Museum of Kotor, Cultural Center "Nikola Djurkovic" Kotor, Regional Institute for Protection of Cultural Heritage, City Gallery of Kotor, Cultural Centre Niksic, Museum of City Perast, Heritage Museum of Ulcinj, Museum of the City of Podgorica, National Theatre of Podgorica, Cultural and Information Center "Budo Tomović" Podgorica, Cultural and Information Center "Malesija" Podgorica, Center for Culture Tivat, National Library Montenegro, National Library "Radosav Ljumović" Podgorica, Library Herceg Novi, Library Kotor, National Museum of Montenegro, State Archive of Montenegro, Center for Conservation and Archaeology Montenegro, Historical Institute of Montenegro, Music Center Montenegro, Cinematheque Montenegro, Department of Education of Montenegro, Waterworks Bar, Public Utility Company Bar, Plumbing Budva, Water and Sewerage Cetinje, Plumbing Herceg Novi, Room Herceg Novi, Water and Sewerage Kotor, Water and Sewerage Podgorica, Public Utility Company Podgorica, Public Utility Company Zelenilo Podgorica, Water and Sewerage Tivat, Public Utility Company Tivat, Water and Sewerage Ulcinj, Coastal Zone Enterprise, Regional Waterworks Montenegro, University of Montenegro, Electrical Engineering, Faculty of Mechanical Engineering, Metallurgical Engineering and Technology, Faculty of Science, Građevinski fakultet, Faculty of Economy, Law Faculty, Faculty of Political Science, Faculty of Medicine, Faculty of Philosophy, Faculty for maritime, Faculty of Tourism

and Hotel Kotor, Music Academy, Faculty of Pharmacy, Faculty of Sport and Physical Education, Univerzity Mediteran, Faculty of Tourism and Hotel Bar, Montenegro Business School, Law Faculty, University Donja Gorica, Faculty for International Economics and Business, Faculty for information system and technologies, Faculty of Polytechnics, Faculty of Legal Science, Faculty of Humanities, Faculty of Arts, Faculty of Food Technology, Food Safety and Ecology, Center for Foreign Languages, Institute for Marine Biology, Hydrometeorological Institute of Montenegro, Maritime Safety. The port Authority of Montenegro, Port of Bar, Port Authority of Bar, Port of Herceg Novi, Port of Kotor, The port , Authority of Kotor, Harbour Master's office Tivat, Harbour Master's office Zelenika, Center for Vocational Education, Center for the preservation and development of cultural minorities in Montenegro, National Parks of Montenegro, National Park of Scadar Lake, National Park "Lovćen", Association for Democratic Prosperity – ZID, CEDEM, Center for Civic Education CGO, Center for monitoring CEMI, Center for development of NGO – CRNVO, European Movement in Montenegro, Youth Initiative for Human Rights, Youth Cultural Centre Juventas, Association of Paraplegics of Montenegro, Association of Youth with Disabilities of Montenegro, GreenHome, Alfa center, Association of Young Ecologists Niksic, Regional Development Center Nikšić, Actions for Women, Ecologic Movement OZON, Eco center Delfin, Art Dulcinium, Monitoring group Ulcinj MOGUL , New Horizon, Association of Women Anima, Ulcinj Business Association, Green Step, Foundation for Culture and Tradition of Boka, Matica Boke, Centre for Environment, mountaineering and tourism, European House of Tivat, Youth Creative Center, Forum MNE, Anima, Institut Alternativa, Expeditio, Artisanal and Small Business Commerce, Centre for Sustainable Tourism Initiatives, CSTI, Institute for Strategic Studies and Prognosis, ISSP, Business start-up centar Bar, Center for Entrepreneurship and Economic Development, CEED, Montenegro Business Aliance, Olive Growers Boca

Republic of Moldova

Ministry of Environment of Republic of Moldova

ANNEX 2: SUMMARY OF CONSULTATION AND COMMENTS RECEIVED ON THE ENVIRONMENTAL REPORT

The Annex will be supplemented and finalised after the consultation process on the draft environmental report.

14. OTHER APPENDICES

ANNEX 3: THE MAP OF THE TOTAL ELIGIBLE AREA



source: http://www.southeast-europe.net/en/about_see/danubeprogamme/index