EX-ANTE EVALUATION and STRATEGIC ENVIRONMENTAL ASSESSMENT for the JOINT OPERATIONAL PROGRAMME for the HUSKROUA ENI CBC Programme 2014-2020






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ENVIRONMENTAL REPORT OF SEA

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This report is conducted within the framework of the Ex-ante evaluation and Strategic Environmental Assessment of the Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020.

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Abbreviations

Term or acronym	Definition
CBC	Cross-Border Cooperation
CBR	Cross-Border Region
CBD	Convention on Biological Diversity
CFP	Common Fisheries Policy
CLRTAP	Convention on Long-range Transboundary Air Pollution
COM	European Commission
DRBMP	Danube River Basin Management Plan
EAP	Environment Action Programme
EC	European Commission
EEA	European Environment Agency
EIA	Environmental Impact Assessment
ENI	European Neighbourhood Instrument
EU	European Union
EUSDR	European Union Strategy for the Danube Region
GHG	Greenhouse Gas
GI	Green Infrastructure
GRDP	Greening Regional Development Programmes Network
HNVf	High Nature Value farmland
HUSKROUA	Hungary-Slovakia-Romania-Ukraine
ICPDR	Strategy on Adaptation to Climate Change
IPPC	International Plant Protection Convention
IUCN	International Union for Conservation of Nature
JOP	Joint Operational Programme
JRC	Joint Research Centre
JTF	Joint Task Force
JTS	Joint Technical Secretariat
MS	Member State
NUTS	Nomenclature of Territorial Units of Statistics
NVZs	Nitrate Vulnerable Zones
P	Priority
POPs	Persistent Organic Pollutants
RBMP	River Basin Management Plans

SAC	Special Areas of Conservation
SCI	Sites of Community Importance
SEA	Strategic Environmental Assessment
SEA Directive	Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and Programmes on the environment.
SPA	Special Protection Area
SWOT	Strengths, Weaknesses, Opportunities, Threats
TEN-T	Trans-European Transport Network
TO	Thematic Objective
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UWWD	Urban Waste Water Treatment Directive
WFD	Water Framework Directive

Introduction

In the new programming period of the European Union (2014-2020) the role of ex ante evaluation and strategic environmental assessment is reinforced. The Strategic Environmental Assessment based on the SEA Directive EU/2001/42 aims at assessing the impact on the environment of the Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020.

Under Article 3(3) and 3(4) of the SEA Directive, environmental assessment is required for certain categories of plans and Programmes only where they are determined to be likely to have significant environmental effects.

The environmental assessment shall be carried out since

a) the Programme is likely to has significant environmental effects,
b) the main objectives of the Programmeand foreseen activities aim to develop the eligible area as a joint tourism destination; to support the solution of wastewater and solid waste caused environmental damages in the frame of setting up of small scale pilot systems; to increase the energy efficiency of buildings, industrial and agricultural production; to improve the mobility of persons and goods through building, modernization and upgrading of roads leading to and crossing the border; to increase the penetration of info-communication tools through the development of cross-border broadband internet infrastructure and communication centres,
c) the characteristics of the HUSKROUA ENI CBC Programme 2014-2020 fulfil the categories and requirements which determine the necessity for the Strategic Environmental Assessment procedure, due to the following reasons:
    - The Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020 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 determination of the likely significance of effects is detailed in chapter 3.
    - The Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020 is subject to preparation and adoption by national and regional authorities in the Participating Countries, and prepared for adoption through legislative procedure by the Governments.
    - The Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020 is required by legislative provisions.
    - The Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020 is financed by the European Union and by the national Governments.
    - The Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020 is prepared for several sectors detailed in chapter 4.
    - The Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020 sets a framework for future development consent of projects in Annexes I and II of the Directive EIA.

Therefore the SEA had to be carried out during the preparation of the Joint Operational 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 and to contribute to the integration of environmental aspects into the preparation and adoption of the HUSKROUA ENI CBC Programme 2014-2020 with special regard to the promotion of sustainable development.

Purposes and Results of the Strategic Environmental Assessment process and the elaboration of the Environmental Report for the HUSKROUA ENI CBC Programme 2014-2020:

(1) The Strategic Environmental Assessment process provided a high level of protection of the environment and contributed to the integration of environmental aspects into the preparation and adoption of the Joint Operational Programme:

- strong and continuous cooperation with the Programme planners and the Managing Authority
- consultations on the Scoping Report and Environmental Report with relevant authorities and the public and discussions with Programme planning and the Managing Authority

(2) The Strategic Environmental Assessment was an integral part of the programming process:

- the Strategic Environmental Assessment process started in parallel with the elaboration of the Programme

(3) The Strategic Environmental Assessment influenced the content of the JOP:

- the results of the consultations, the statements and recommendations of SEA have been continuously discussed with the Task Force and the Programme planners

(4) Setting up of the system of monitoring measures:

- the description of monitoring measures proposed for JOP has been included in the Environmental Report

Assessment Framework

The HUSKROUA ENI CBC Programme 2014-2020

The assessment object of the SEA is the Joint Operational Programme HUSKROUA ENI CBC Programme 2014-2020. The SEA of the Joint Operational Programme is planned and carried out in line with the relevant EC Directive and the national legislations.

The Environmental Report is based on the Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020 DRAFT Version of 10th June 2015 (JOP_DV3_10/06/2015).

The geographical frame for SEA

The Participating Countries of the HUSKROUA ENI CBC Programme 2014-2020 are Hungary, Slovakia, Romania and Ukraine. The Programme area covers core regions and adjoining regions.

The core regions of the Programme are the following 7 territorial units:

- Szabolcs-Szatmár-Bereg county, Hungary (NUTS III)
- Košický region, Slovakia (NUTS III)
- Prešovský region, Slovakia (NUTS III)
- Maramureş county, Romania (NUTS III)
- Satu-Mare county, Romania (NUTS III)
- Ivano-Frankivska region, Ukraine
- Zakarpatska region, Ukraine

The adjoin regions of the Programme are the territorial units:

- Borsod-Abaúj-Zemplén county, Hungary (NUTS III)
- Suceava county, Romania (NUTS III)
- Chernivetska region, Ukraine

The map of the Programme area has been presented in the Joint Operational Programme document for the HUSKROUA ENI CBC Programme 2014-2020 - Chapter 2.5.

Time frame for SEA

According to Article 4(1) of the SEA Directive "The environmental assessment referred to in Article 3 shall be carried out during the preparation of a plan or Programme and before its adoption or submission to the legislative procedure."

The time frame for the Strategic Environmental Assessment was determined by the description of the development trend related to the expected state of the environment, and the possible impacts on the environmental issues.

The time frame for the 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.

The SEA process of the HUSKROUA ENI CBC 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. The whole Strategic Environmental Assessment process started in December 2014 and planned to be finalized after the consultation of the Environmental Report in all partner countries.

The legal frame for SEA in this Programme context

The main legal frame

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)
- Regulation (EU) No 232/2014 on establishing a European Neighborhood Instrument
- Regulation (EU) No 236/2014 on laying down common rules and procedures for the implementation of the Union's instruments for financing external action
- Commission implementing regulation (EU) No 897/2014 laying down specific provisions for the implementation of cross-border Joint Operational Programmes financed under Regulation (EU) No 232/2014 on establishing the ENI
- EC Guidance document on ex-ante evaluation, - European Regional Development Fund European Social Fund and Cohesion Fund -January 2013;
- 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 Strategic Environmental Assessment
- Guidance on Integrating Climate Change and Biodiversity into Strategic Environmental Assessment
- Guidelines on Climate Change and NATURA 2000

The legal frame in the HUSKROUA ENI CBC Programme Participating Countries

The SEA of the Joint Operational Programme is planned and carried out in line with the relevant EC Directive (listed above) and the following national legislations:

Hungary	2/2005 (I.11) Government Decision on the SEA
Slovak Republic	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.
Romania	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 995/2006)
Ukraine	Law on Environment Protection

Environmental issues

The Scoping Reportof the Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020determined the environmental issues considered relevant for the strategic environmental assessment.

The choice of the environmental issues is based on the SEA Directive EU/2001/42 Annex I, letter f: "*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*". The environmental issues likely to be impacted by the HUSKROUA ENI CBC Programme 2014-2020 need to be identified.

The choice of the environmental issues are not only based on the SEA Directive EU/2001/42, but determined by environmental legal and policy framework relevant for the HUSKROUA ENI CBC Programme 2014-2020. The relevant policy framework has been presented in Chapter 5.1.

Based on the above-mentioned framework, the following environmental issues are considered relevant for the strategic environmental assessment and therefore have been chosen and thematically grouped:

- Biodiversity, flora, fauna
- Air and climate change
- Soil and land use
- Waters (surface waters, ground waters)
- Landscape and land cover
- Material assets, cultural heritage (including architectural and archaeological heritage)
- Population and human health
- Energy consumption, use of renewable sources, traffic and transport

The justification on the relevance of the environmental issues as protected goods considering the Programme area is summarizedas follows:

Biodiversity, flora, fauna

The eligible area hosts important and valuable flora and fauna of the Carpathian Mountains and the Pannonian Basin that is confirmed by the network of protected areas. Its preservation and proper management is an important task.

Air and climate change

The eligible area is determined by huge differences in climate due to topographical differences. Consequences of climate change had serious socio-economic and environmental consequences in the past and expected to have increased ones in the future. The main environmental hazards, whose rate or frequency can be negatively influenced by climate change, are floods, flash floods, landslides,

inland excess water, and drought.

Soil and land use

As the south-western and north-eastern parts of the eligible area are mostly used by agriculture and the Carpathian Mountains with several Biosphere Reserves are of high importance, rational and sustainable soil and land management needs to be targeted. Among soil degradation processes, mostly water erosion, soil compaction and contaminations can be highlighted. Most environmental conflicts are in connection with agricultural and industrial processes, furthermore, natural processes (increasing extremities due to climate change) can also play significant role in soil degradation processes in the future.

Waters (surface waters, ground waters)

The area has several water flows with transboundary catchment and water course (e.g. Tisza, Somas/Szamos or Latorica-Bodrog). These rivers have high importance in the life of society, providing water resource, energy, transportation route and tourism. Ground waters are important water sources in the region and several water bodies have transboundary character.

Landscape and land cover

The area has a great variety of landscape types that contributes to the high biodiversity of the area. The north-eastern and the south-western parts are used for agricultural production, where the soil productivity is higher. There is a high extent of forest cover in the Carpathian Mountains. The region is rich in mineral and other natural resources, that were/are/will be under exploitation influencing the environment.

Material assets, cultural heritage

The economic, technological, social and political changes of the Carpathian region leaded to a loss of traditional knowledge, customs and values that were preserved through centuries. It is important to maintain these unique values while allowing and encouraging them to develop sustainably. To reach this goal, well-adapted and responsible actions are necessary, including regional and trans-border co-operations.

Population and health

The economic, technological, social and political changes of the Carpathian region leaded to the decline of industry causing large increase in unemployment in the region. Moreover, the Ukrainian and Romanian counties are peripheral areas within the respective countries, where no major cities, with industrial or economic centre exist. These circumstances have negative social effects, causing poverty, migration, bad health state of the population and difficulties in infrastructural development. Negative environmental impacts also contribute to bad health state (e.g. noise, air

pollution, water contamination).

Energy consumption, use of renewable sources, traffic and transport

Sustainability, energy efficiency and the renewable energy sources are increasingly targeted in Europe and worldwide as well. The area is lagging behind in using renewable sources, adequate waste collection and treatment, furthermore, specific education and technologies, especially some regions in Ukraine. There is also a lack in proper road and railway infrastructure which makes availability more difficult. ICT infrastructure is at low level especially in mountain regions, which hinders the development of the area in many aspects. Public transport facilities have also deficiencies; however, they could provide more sustainable ways of travelling in the point of air pollution and energy use.

1 An outline of the contents, main objectives of the Programme and relationship with other relevant plans and Programmes

1.1 Programme justification and purpose

With the participation of Hungary, Slovakia, Romania and Ukraine, the Joint Task Force for the HUSKROUA ENI CBC Programme 2014-2020 has decided on the strategy of the Programme and formulated the following general vision for the eligible area:

"In **2030** the area along the borders of Ukraine with the three Member States of Hungary, Slovakia and Romania is a **cooperative cross-border region** that efficiently functions and works together in the fields of **promotion of local culture and preservation of historical heritage, environmental protection, climate change adaptation and disaster management**. The **cross-border accessibility among Ukraine and the three Member States does not hinder day-to-day cross-border cooperation, while safety and security and including border management is assured** on an adequate level. **Cooperation** is an integral and natural part of the daily life of the **people living and authorities operating** here."[1]

1.2 The outline of the content of the Programme

The Programme strategy involves the following thematic objectives[2]:

- TO 3 Promotion of local culture and preservation of historical heritage
- TO 6 Environmental protection, climate change mitigation and adaptation
- TO 7 Improvement of accessibility to the regions, development of sustainable and climate-proof transport and communication networks and systems
- TO 8 Common challenges in the field of safety and security

1.3 Main objectives of the Programme and the activities foreseen

The selected thematic objectives comprise of the following objectives and types of actions[3]:

Thematic objective	Priority	The objectives of the priority	Types of actions
TO3 Promotion of local culture and	Priority 1: Promoting local culture and	To develop the eligible area as a joint tourism	Preservation of historical heritage includes the following types of actions: ▪ Preservation and restoration of historical

[1]Joint Operational ProgrammeProgramme for the HUSKROUA ENI CBC Programme 2014-2020 chapter 3.Programme's strategy, subchapter 4.1. General objective and vision of the joint operativeProgramme
[2]Joint Operational ProgrammeProgramme for the HUSKROUA ENI CBC Programme 2014-2020 chapter 3.Programme's strategy, subchapter 4.3. Selected thematic objectives
[3]Joint Operational ProgrammeProgramme for the HUSKROUA ENI CBC Programme 2014-2020 chapter 3.Programme's strategy, subchapter 4.4.Planned activities within the selected thematic objectives

preservation of historical heritage	history along with tourism functions	destination based on its cultural, historical, religious values with the preservation of historical buildings	heritage sites (buildings, historical parks and gardens) in accordance with monument restoration requirements with the goal to create a network of touristic sites as basis of thematic routes and thematic packages in the cross border region. ▪ Surveys on buildings of cultural, historical and religious heritage to form bases of cross-border thematic routes. Tourism services include the following types of actions: ▪ Development of touristic destinations, thematic routes connecting historical cultural or religious heritage sites and other attractions and services. ▪ Joint promotion activities and information provision on cross-border routes and related attractions (including the development of maps, joint online information sources and information materials, modern IT tools and applications for the promotion of routes and attractions, signs, tourism cards, etc.). ▪ Organization of joint cultural events with cross-border added value linked to historical, cultural, and religious heritage. ▪ Support of the development and promotion of traditional local (handicraft, (organic) agricultural) products at touristic sites to foster local economic effects. ▪ Creating cross-border standard of services through the development of new or existing regional product-specific trademarks and quality systems. ▪ Exchange of experiences among organizations related to cultural religious and historic heritage. ▪ Training for local stakeholders in tourism, cooperation, promotion and networking.
TO 6 Environmental protection, climate change	Priority 1: Sustainable use of the environment in the cross	To support the preservation and sustainable use of common natural	Preservation and sustainable use of common natural values: ▪ Protection of landscape, maintenance of biodiversity and eco-systems with cross

mitigation and adaptation	border area - preservation of natural resources, actions to reduce GHG emission and pollution of rivers	values of the border area, to initiate actions for energy efficiency and the use of renewable energy sources as well as to reduce the risks caused by wastes on the quality of waters.	border relevance via common developments like protected areas co-operations, sustainable forestry managements systems, ecological and traditional agricultural production etc. ▪ Protection of water resources, adaptation to the more frequent water extremities through integrated water management actions. ▪ Joint ecological education programmes. ▪ Co-operation between institutions, authorities and civil organizations for the sustainable use of natural resources; support for the harmonization of relevant regulations. Energy efficiency and the use of renewable energy sources: ▪ Supporting investments to increase renewable energy production, energy efficiency, energy savings and recycling. ▪ Elaboration of joint low-carbon strategies. ▪ Exchange of best practices and expertise, study tours, education on energy efficiency. ▪ Strengthening competences and skills in the field of eco-innovation and low-carbon solutions. ▪ Harmonization of local renewable energy production strategies for biomass, hydropower and geothermal energy. Waste management and wastewater treatment: ▪ Sharing best practices, setting up of small scale pilot systems for wastewater treatment, communal and industrial waste management. ▪ Surveys on water quality problems of river basins crossing the border. ▪ Setting up of water quality monitoring

			systems of rivers crossing the borders. ▪ Development of landfills that are suitable for recycling and fulfil environmental requirements. ▪ Joint awareness campaigns.
TO 7 Improvement of accessibility to the regions, development of sustainable and climate-proof transport and communication networks and systems	Priority 1: Development of transport infrastructure to improve the mobility of persons and goods	To improve the mobility of persons and goods, create the basis of economic co-operations and reduce the disparities of regions via the development of transport infrastructure and services.	Types of actions in the frame of the priority: ▪ Preparation activities and/or building, modernization and upgrading of transport infrastructures leading to and crossing the border to improve the opportunities for transboundary mobility. ▪ Developing border crossing infrastructure and improvement of border management systems connected with transport infrastructure developments. ▪ Building, modernization and upgrading of bicycle paths, routes leading to and crossing the border. ▪ Development of cross-border public transport initiatives, harmonization of systems, acquisition of rolling stocks. ▪ Awareness-raising activity regarding the importance of environment-friendly transport system (low emission and low noise pollution of cross-border transport). ▪ Development of IT solutions for public transport facilities.
	Priority 2: Development of ICT infrastructure and information sharing	To increase the penetration of info-communication tools and help the share of information among the citizens, institutions and businesses of the border region.	Types of actions in the frame of the priority: ▪ Development of cross-border broadband internet infrastructure and communication centres. ▪ Development mutually usable local media content and related media production capacities.
TO8 Common challenges in the field of	Priority 1: Support to joint activities for the	To create technical background, strategies and co-	Types of actions in the frame of the priority: ▪ Harmonizing activities in the field of flood prevention, development of flood

safety and security	prevention of natural and man-made disasters as well as joint action during emergency situations	operation platforms for the prevention and handling of natural and man-made disasters that may endanger the citizens of the border area.	prevention infrastructure. ▪ Development of inland water prevention infrastructure. ▪ Setting up joint early warning systems for natural disaster incidents. ▪ Strategic and technical planning and establishment of joint monitoring systems on environmental (air, water, soil) pollutions. ▪ Support/cooperation/network of non-governmental and public rescue teams/organizations. ▪ Database regarding natural disasters incidents. ▪ Joint training programmes and workshops, exchange of experiences, study tours.
	Priority 2: Support to the development of health	To improve the prevention activities, the availability and level of services of health and social programs for the citizens of the border area.	Types of actions in the frame of the priority: ▪ Improvement of health care and prevention infrastructure and equipment related to cross border service provision, joint capacity development. ▪ Joint development and establishment of patient care areas. ▪ Exchange of know-how, joint training programmes, joint prevention programs, joint support services. ▪ Co-operation between institutions on the field of human epidemiology. ▪ Improvement of social care services infrastructure.

The consistency analysis assesses the development priorities and objectives based on their relationships in environmental point of view. The following table demonstrates which objectives and priorities may strengthen each other.

TO3 P1 Promoting local culture and history along with tourism functions	TO3 P1	
TO6 P1 Sustainable use of the environment in	Ø	TO6 P1

the cross border area - preservation of natural resources, actions to reduce GHG emission and pollution of rivers						
TO7 P1 Development of transport infrastructure to improve the mobility of persons and goods	++	++	TO7 P1			
TO7 P2 Development of ICT infrastructure and information sharing	Ø	+	++	TO7 P2		
TO8 P1 Support to joint activities for the prevention of natural and man-made disasters as well as joint action during emergency situations	+	++	+	++	TO8 P1	
TO8 P2 Support to the development of health	Ø	+	++	+	+	TO8 P2

Legend for the table:
+ : weak relationship between the target objectives; ++ : strong relationship between the target objectives; Ø: no relationship between the target objectives

1.4 Relationship with other relevant plans and Programmes

The SEA analysis identified the key international documents in terms of the environmental link with the HUSKROUA ENI CBC Programme 2014-2020. It was analysed how the HUSKROUA ENI CBC Programme 2014-2020 reinforces the targets set in these documents and how the objectives of the Programme contribute to the aims of those.

The identified plans and Programmes which are considered as relevant and the contribution of the Programme to these plans and Programmes are the following:

1.4.1 EU 2020

Europe 2020 is a strategy to help Europe prepare the EU economy for the next decades. To achieve thepriorities, the European Commission has proposed five interrelated headline targets for the EU to achieve by 2020 and seven flagship initiatives to catalyse progress under each priority theme[4], [5].

There are many indirect linkages with the relevant EU2020 targets (e.g. SME development, employment, R&D, climate and energy, social inclusion). Moreover, there are many overlaps among the targeted Programme objectives and the flagship initiatives of the EU 2020.

EU2020 Objectives	Thematic objectives(TO) and priorities(P) of the Programme					
	TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
1. Employment	+					
2. R&D/innovation		+	+	+		
3. Climate change/energy		+				

[4]Europe 2020: A European Strategy for Smart, Sustainable, and Inclusive Growth. EU Fact Sheets http://www.eurunion.org/eufacts
[5]http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:EN:PDF

4. Education		+		+	+	+
5. Poverty/social inclusion				+	+	+

EU2020 Flagship projects	Thematic objectives(TO) and priorities(P) of the Programme					
	TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
1.1. Digital agenda for Europe				+		
1.2. Innovation Union		+		+		
1.3. Youth on the move			+	+		
2.1. Resource efficient Europe		+	+			
2.2. An industrial policy for green growth		+				
3.1. An agenda for new skills and jobs		+			+	
3.2. European platform against poverty	+			+		+

1.4.2 The 7th Environment Action Programme (EAP)

The 7th Environment Action Programme (EAP) was developed to guide European environment policy until 2020. In order to give more long-term direction it sets out a vision beyond that, of where it wants the Union to be by 2050. The 7th EAP shall contribute to a high level of environmental protection and to an improved quality of life and well-being for citizens.[6]

Environmental issues are between the main challenges of the area which require cross-border co-operations, thus the Programme defined several targets contributing to the improved quality of the environment. Therefore most of the selected thematic objectives have synergies with the 7th EAP.

EAP Objectives	Thematic objectives(TO) and priorities(P) of the Programme					
	TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
1. Natural capital		+				
2. Resource-efficient economy		+				
3. Healthy environment for healthy people		+				
4. Improved implementation		+				
5. Increased information		+		+	+	
6. Secured investments						
7. Better integration		+				
8. Sustainable cities		+	+			
9. Tackling international challenges		+	+		+	

1.4.3 EU strategy for the Danube region (EUSDR, 2011)

The EU Strategy for the Danube Region (EUSDR) provides an overall framework for the 14 countries of the Danube Region aiming at fostering integration and integrative development. The Danube Region covers nearly the entire Programme area. The Strategy seeks to create synergies and coordination between existing policies and initiatives taking place across the Danube Region[7].

[6] http://ec.europa.eu/environment/newprg/objectives.htm

[7] Convention on Cooperation for the Protection and Sustainable use of the Danube River (Danube River Protection Convention) http://www.icpdr.org/main/icpdr/danube-river-protection-convention

The Programme contributes to the Macro Regional strategy of the Danube Region. The Programme connects to all the 4 pillars of the EUSDR, through the selected thematic objectives.

EUSDR Pillars	Thematic objectives(TO) and priorities(P) of the Programme					
	TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
1. Connecting the Danube Region	+	+		+		
2. Protecting the environment in the Danube Region		+	+		+	
3. Building prosperity in the Danube Region		+		+	+	
4. Strengthening the Danube Region		+	+		+	+

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

The purpose of the Directive is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater to enhance the status of aquatic ecosystems, to promote sustainable water use, to reduce pollution of groundwater or to mitigate the effects of floods and droughts.[8]

The status of water quality and water use and the flood hazard are important issues in the region, the Programme identifies several priorities in the frame of 6. and 8. thematic objectives to improve the state of water related problems.

WFD Objectives	Thematic objectives(TO) and priorities(P) of the Programme					
	TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
1. expanding the scope of water protection to all waters, surface waters and groundwater		+			+	
2. achieving "good status" for all waters		+			+	
3. water management based on river basins					+	
4. "combined approach" of emission limit values and quality standards		+			+	
5. getting the prices right						
6. public participation		+			+	
7. streamlining legislation						

1.4.5 Convention on Cooperation for the Protection and Sustainable use of the Danube River (DRPC)

The main objective of the Danube River Protection Convention (DRPC) is to ensure that surface waters and groundwater within the Danube River Basin are managed and used sustainably and equitably. It establishes a framework for bilateral or multilateral cooperation to protect the aquatic environment of the river Danube and for the prevention and control of pollution, conservation, improvement and rational use of water resources of the Danubian countries.[9]

Primarily the 6.and 8. (8.1.) thematic objectives of the Programme address the objectives of the DRPC. These thematic objectives have priorities to initiate actions for the sustainable use of natural

[8] http://ec.europa.eu/environment/water/water-framework/info/intro_en.htm
[9] http://www.danube-region.eu/

values and to monitor the environment (e.g. air, water, soil) and to develop local and regional strategies to prevent and mitigate pollution and natural disaster incidents.

DRPC Objectives	Thematic objectives(TO) and priorities(P) of the Programme					
	TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
1. conservation, improvement and rational use of surface waters and groundwater		+			+	
2. preventive measures to control hazards originating from accidents involving floods, ice or hazardous substances					+	
3. measures to reduce the pollution loads entering the Black Sea from sources in the Danube River Basin		+				

1.4.6 The Framework Convention on the Protection and Sustainable Development of the Carpathians (Carpathian Convention)

The aim of the Carpathian Convention is to pursue comprehensive policy and cooperation in order to guarantee protection and sustainable development of the Carpathians. The Convention provides a framework for cooperation and multi-sectoral policy coordination, a platform for joint strategies for sustainable development, and a forum for dialogue between all stakeholders involved.[10]

The HUSKROUA ENI CBC Programme 2014-2020 contributes to and interacts with the objectives of the Carpathian Convention. Several thematic objectives of the Programme focus on the main objectives of the Convention.

Carpathian Convention Objectives	Thematic objectives(TO) and priorities(P) of the Programme					
	TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
1. improving quality of life	+	+	+	+	+	+
2. strengthening local economies and communities	+		+			
3. conservation of natural values and cultural heritage	+	+			+	

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

The strategy aims to achieve more sustainable use of natural resources. The objective of the strategy is to reduce the negative environmental impacts generated by the use of natural resources and to do so in a growing economy. In practical terms, this means reducing the environmental impact of resource use while at the same time improving resource productivity. For renewable resources this means also staying below the threshold of overexploitation.[11,12]

[10] http://www.carpathianconvention.org/the-convention-17.html
[11] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52005DC0670
[12] http://ec.europa.eu/environment/natres/

Several thematic objectives of the Programme are in line the main objectives of the Strategy by aiming to develop monitoring systems, awareness-raising activity and building co-operation between institutions, authorities and civil organisations.

Actions	Thematic objectives(TO) and priorities(P) of the Programme					
	TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
1. improve our understanding and knowledge of European resource use, its negative environmental impact and significance in the EU and globally		+		+		
2. develop tools to monitor and report progress in the EU, Member States and economic sectors					+	
3. foster the application of strategic approaches and processes both in economic sectors and in the Member States and encourage them to develop related plans and Programmes				+		
4. raise awareness among stakeholders and citizens of the significant negative environmental impact of resource use		+	+			

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

Directive 2007/60/EC on the assessment and management of flood risks entered into force on 26 November 2007. This Directive now requires Member States to assess if all water courses are at risk from flooding, to map the flood extent and assets and humans at risk in these areas and to take adequate and coordinated measures to reduce this flood risk. With this Directive also reinforces the rights of the public to access this information and to have a say in the planning process[13,14].

The 8.thematic objective of the Programme directly connects to the objective of the Directive, since the objective has a priority (8.1.) to harmonise activities in the field of flood prevention, development of flood prevention infrastructure.

Objectives	Thematic objectives(TO) and priorities(P) of the Programme					
	TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
1. assessment and management of flood risks					+	

1.4.9 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 two types of wastes defined as “other wastes” - household waste and incinerator ash.[15]

[13]http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32007L0060
[14]http://ec.europa.eu/environment/water/flood_risk/
[15]http://www.basel.int/TheConvention/Overview/tabid/1271/Default.aspx

The 6.and 8. (8.1. priority) thematic objectives of the program have linkages to the objectives of the Basel Convention by supporting the solution of wastewater and solid waste and focusing on areas crossing the border with risk of contamination.

EUSDR Objectives	Thematic objectives(TO) and priorities(P) of the Programme					
	TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
1. the reduction of hazardous waste generation and the promotion of environmentally sound management of hazardous wastes		+				
2. restriction of transboundary movements of hazardous wastes		+			+	
3. a regulatory system applying to cases where transboundary movements are permissible					+	

1.4.10 EU biodiversity strategy 2020 (COM (2011)0244)

The European Commission has adopted a strategy to halt the loss of biodiversity and ecosystem services in the EU by 2020. There are six main targets, and 20 actions to help Europe reach its goal. The Strategy has a 2020 headline target to halt the loss of biodiversity and the degradation of ecosystem services and restoring them in so far as feasible and a 2050 vision aiming biodiversity and the ecosystem services it provides are protected, valued and appropriately restored[16].

Primarily the 6.thematic objective of the HUSKROUA ENI CBC Programme 2014-2020 focuses on the protection of landscape, biodiversity, eco-systems and water resources and on the sustainable use of natural values considering cross-border effects and planning.

Targets	Thematic objectives(TO) and priorities(P) of the Programme					
	TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
1. Full implementation of EU nature legislation to protect biodiversity		+				
2. Better protection for ecosystems, and more use of green infrastructure		+				
3. More sustainable agriculture and forestry		+				
4. Better management of fish stocks		+				
5. Tighter controls on invasive alien species		+				
6. A bigger EU contribution to averting global biodiversity loss		+				

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

Natura 2000 is the centrepiece of EU nature & biodiversity policy. The aim of the network is to assure the long-term survival of Europe's most valuable and threatened species and habitats. It is comprised

[16] http://ec.europa.eu/environment/nature/biodiversity/comm2006/2020.htm

of Special Areas of Conservation (SAC) designated by Member States under the Habitats Directive, and also incorporates Special Protection Areas (SPAs) which they designate under the Birds Directive.[17]

Mainly the 6.and 8. thematic objectives include priorities which has synergies with the Natura 2000 objectives, by promoting activities, which help to assure the survival of valuable and threatened species and habitats of the region.

Natura 2000 Objectives	Thematic objectives(TO) and priorities(P) of the Programme					
	TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
1. to assure the long-term survival of Europe's most valuable and threatened species and habitats		+			+	

1.4.12 Strategy on Climate Change

The strategy based on, among other things, implementation of existing policies, the preparation of new measures in coordination with other European policies, more research, greater international cooperation and measures to increase public awareness. A strategy to combat climate change represents a four-fold challenge.[18][19]

Mainly the 6.thematic objective includes priorities which contribute to the realisation of the aims, outlined in the Strategy on Climate Change, by supporting low-carbon solutions and renewable energy production.

Objectives	Thematic objectives(TO) and priorities(P) of the Programme					
	TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
1. extension of action against climate change		+				
2. enhanced innovation, which includes the implementation and deployment of existing technologies and the development of new technologies		+				
3. use and development of market-based instruments		+				
4. harnessing of preventive and remedial efforts to adapt to climate change					+	

1.4.13 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. The targets represent an integrated approach to

[17] http://ec.europa.eu/environment/nature/natura2000/index_en.htm
[18] http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=URISERV:l28157&rid=14
[19] http://europa.eu/legislation_summaries/energy/european_energy_policy/l28188_en.htm

climate and energy policy that aims to combat climate change, increase the EU's energy security and strengthen its competitiveness. [20]

Mainly the 6.and 7. thematic objectives include priorities which has synergies with the Climate and Energy Package objectives by promoting activities, which help to increase energy efficiency, low-carbon economy, use of renewable energy sources and indirectly by development of transport infrastructure and services.

Climate and Energy Package Objectives	Thematic objectives(TO) and priorities(P) of the Programme					
	TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
1. A 20% reduction in EU greenhouse gas emissions from 1990 levels		+	+			
2. Raising the share of EU energy consumption produced from renewable resources to 20%		+				
3. A 20% improvement in the EU's energy efficiency		+				

1.4.14 UNESCO World Cultural and Natural Heritage Convention (1972)

The Convention focuses on the preservation of cultural sites, and the other dealing with the conservation of nature.Each State Party to this Convention shall endeavour, in so far as possible, and as appropriate for each country to develop and achieve effective and active measures for the protection, conservation and presentation of the cultural and natural heritage.[21]

The Programme aims to protect conserve and present of both the cultural and natural heritage, which directly connects to the aim of the UNESCO World Cultural and Natural Heritage Convention. Mainly the 3.(3.1.) and 6.thematic objectives support these aims.

Objectives	Thematic objectives(TO) and priorities(P) of the Programme					
	TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
1. to adopt a general policy which aims to give the cultural and natural heritage a function in the life of the community and to integrate the protection of that heritage into comprehensive planning Programmes		+				
2. to set up within its territories, where such services do not exist, one or more services for the protection, conservation and presentation of the cultural and natural heritage	+					
3. to develop scientific and technical studies and research and to work out operating methods as will make the State capable of counteracting the dangers that threaten its cultural or natural heritage						
4. to take the appropriate legal, scientific, technical, administrative and financial measures necessary for the	+	+				

[20] http://ec.europa.eu/clima/policies/package/index_en.htm
[21] http://whc.unesco.org/en/conventiontext/

identification, protection, conservation, presentation and rehabilitation of this heritage						
5. to foster the establishment or development of national or regional centres for training and to encourage scientific research in this field	+	+				

1.4.15 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. The key goals include no more conventionally-fuelled cars in cities or increase the use of rail and waterborne transport in medium distance intercity passenger and freight journeys.[22, 23]

The 7 (7.1 and 7.2) thematic objective of the Programme focuses on the Improvement of accessibility to the regions, development of sustainable and climate-proof transport and communication networks and systems is in line with the aims of the White paper.

White paper 2011 Objectives	Thematic objectives(TO) and priorities(P) of the Programme					
	TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
1. Developing and deploying new and sustainable fuels and propulsion systems						
2. Optimising the performance of multimodal logistic chains, including by making greater use of more energy-efficient modes			+			
3. Increasing the efficiency of transport and of infrastructure use with information systems and market-based incentives			+	+		

1.4.16 CAP reform 2014-2020

The CAP reform 2014-2020[24]moving from product to producer support and to a more land-based approach. This is in response to the challenges facing the sector, many of which are driven by factors that are external to agriculture: economic (including food security and globalisation, a declining rate of productivity growth, price volatility, pressures on production costs due to high input prices and the deteriorating position of farmers in the food supply chain), environmental (relating to resource efficiency, soil and water quality and threats to habitats and biodiversity) and territorial (where rural areas are faced with demographic, economic and social developments including depopulation and relocation of businesses).

CAP reform 2014-2020	Thematic objectives(TO) and priorities(P) of the Programme

[22]http://ec.europa.eu/transport/themes/strategies/2011_white_paper_en.htm
[23]http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52011DC0144&from=EN
[24]http://ec.europa.eu/agriculture/cap-post-2013/

	TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
Pillar 1. Direct Payments and market - related expenditure		+			+	
Pillar 2. Rural development priorities		+			+	

1.4.17 National transport strategies

In Hungary the 'National Transport Strategy (NTS)'[25] in line with the EU guidelines, formulates major objectives and grounds project proposals via strategic aims for the EU budget period between 2014–2020. In Slovak Republic the Strategic Plan for Transport Infrastructure Development in Slovak Republic until 2020[26] contains key strategies for the 2014-2020 Programming period targeting key problems of transport infrastructure; furthermore, the 'National Strategy of Development of Cycling Transport and Cycle Touring in the Slovak Republic' addresses green ways of transporting[27]. Romania has an 'Intermodal Strategy for 2020'[28] and the new 'General Transport Master Plan' reflects the transport development strategy for 2014-2030[29]. In Ukraine the 'Transport Strategy of Ukraine for the period up to 2020'[30] aims at supporting sustainable and efficient transport sector operation to create conditions for social and economic development of the country, improving competitiveness of the national economy, and transport safety.

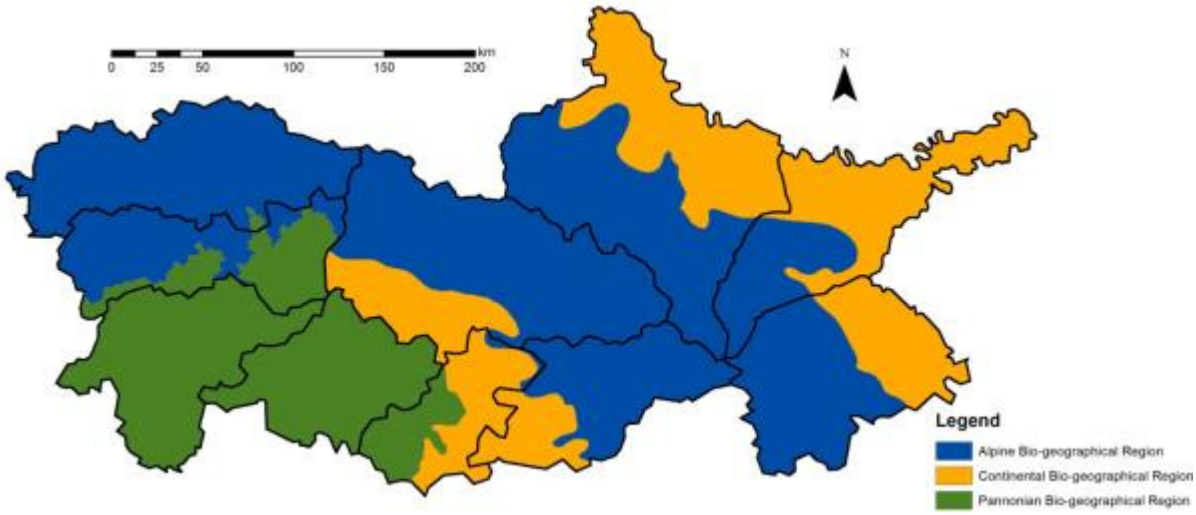
[25] http://www.3k.gov.hu/index.php/en/national-transport-strategy.html
[26] http://www.telecom.gov.sk/index/index.php?ids=165524
[27] http://www.central2013.eu/fileadmin/user_upload/Downloads/outputlib/CMB_3.2.3_National_Strategy_of_Development_of_Cycling__Transport_and_Cycle_Touring_in_the_Slovak_Republic.pdf
[28] http://www.mt.ro/web14/documente/strategie/strategii_sectoriale/strategie_de_transport_intermodal_text.pdf
[29] https://www.mzv.sk/App/wcm/media.nsf/vw_ByID/ID_A64DB470CF361148C1257D82004A2C28_SK/$File/Master_Plan_Report_EN.pdf
[30] http://www.transport-ukraine.eu/sites/default/files/images/transport_strategy_0.pdf

2 The relevant aspects of the current state of the environment and the likely evolution thereof without the implementation of the Programme

2.1 The outline of the current state of the environment of the Programme area

2.1.1 Biodiversity, flora, fauna

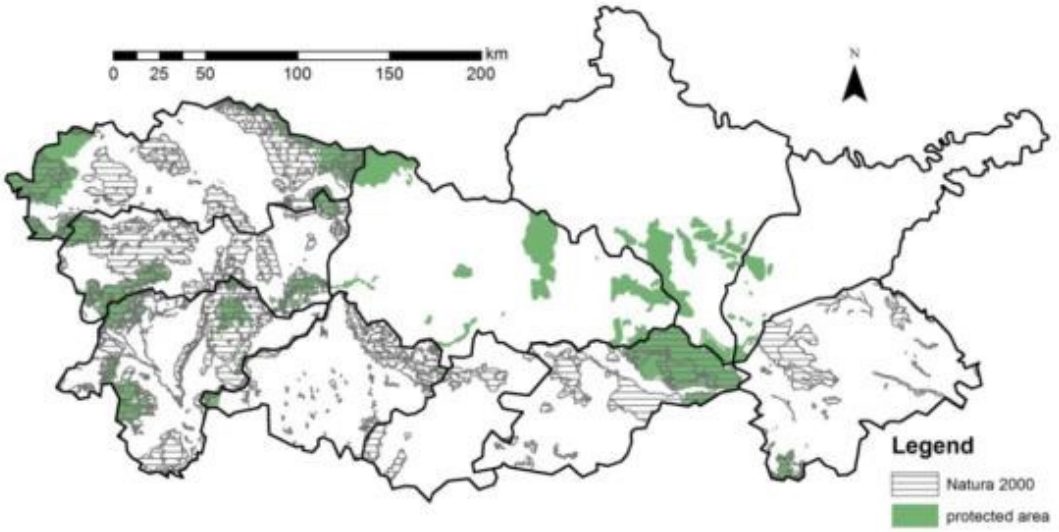
In the territory of the eligible area three bio-geographical regions are represented that ensure the rich biological diversity of the area. The plain areas of the Pannonian Basin belong to the Pannonian Bio-geographical Region on the south-western part. The Alpine Bio-geographical Region covers the highest elevations in the Carpathians. On the north-eastern parts and for Transcarpathia Continental Bio-geographical Region is characteristic.



Map 1 – Bio-geographical regions in the eligible area (data source: EEA)

The eligible area hosts biodiversity values of both European and global importance. The endemic plants and animals characteristic for the Carpathian ecosystems are essential biodiversity components in Europe. The forests of the Carpathian Mountains are still great habitats for large carnivores (brown bear (*Ursusarctos*), wolf (*Canis lupus*) and Eurasian lynx (*Lynx lynx*)). Endemic, alpine, relict habitats and species are the result of long-term evolution, migration and adaptation processes. Specific bird species of the Carpathians are the imperial eagle (*Aquila heliaca*) or the Ural owl (*Strixuralensis*). In the Pannonian Basin along the rivers fragments of riparian wetland and forest ecosystems are characteristic and protected that are influenced by temporary water inundations. These ecosystems provide feeding, resting and nesting places for many species (e.g. corncrake (*Crexcrex*), white stork (*Ciconiaciconia*), and red-backed shrike (*Laniuscollurio*)). On the alluvial fan with blown sand (Nyírség) steppe meadows, wetlands and forests are important values under protection.

There are several national parks in the eligible area, which preserve the natural, historical and traditional values of the region. Aggtelek National Park (Hungary), Slovak Karst National Park (Slovakia) and Slovak Paradise National Park (Slovakia) are preserving typical karst formations in the area. There are several caves that are of worldwide interest e.g. Baradla-Domica Cave System or the Dobšinská Ice Cave. The Poloniny National Park (Slovakia), Carpathian National Nature Park (Ukraine), Synevir National Park (Ukraine), Uzhanskyi National Park (Ukraine), ZacharovanyjKraj National Park "Enchanted Land" (Ukraine), the Maramureș Mountains Natural Park (Romania) and National Park Rodna Mountains (Romania) preserving the unique flora and fauna of the Carpathian Mountains.



Map 2 - Protected areas and NATURA 2000 sites in the eligible area (data source: EEA, national maps)

The importance of the valuable flora and fauna in the eligible area can be confirmed by the rich network of protected areas. Slovakia, Romania and Hungary are EU members and have incorporated into the European framework on nature protection and biodiversity into their national legislation. Based on the Bird Directive and Habitat Directive, NATURA 2000 sites were assigned where protection and management measures are revealed. The ratio of NATURA 2000 sites compared to the extent of the given region is high in Košický (58 %), Borsod-Abaúj-Zemplén (52.9%), Maramureş (49.6%) and Presovský (48.9%) regions, and the ratio is less in Szabolcs Szatmár-Bereg (20.7%), Satu-Mare (20.2%) and Suceava (17.9%) regions.

UNESCO World Heritages[31] are the Caves of Aggtelek Karst and Slovak Karst, and the Primeval Beech Forests of the Carpathians in the area. There are two UNESCO biosphere reserves as well: Aggtelek, The Slovak Karst and the trilateral biosphere reserve, East Carpathians.

The Caves of Aggtelek Karst and Slovak Karst are outstanding due to the large number of complex, diverse and relatively intact caves in a relatively small area. Karst processes have produced a rich diversity of structures and habitats that are important from a biological, geological and

[31] www.unesco.org

paleontological point of view. The most significant cave system is the Baradla-Domica; furthermore, Dobsina Ice Cave is one of the most beautiful caves in the world. Due to the steady temperature, the high humidity and the continuous darkness contributes to the formation of unique flora and fauna. Especially valuable endemic species are blind Hungarian beetle (Duvaliushungaricus), cave woodlice (*Mesoniscusgraniger*), niphargus from Aggtelek (*Niphargusaggtelekiensis*). Bats are important animals in the caves (lesser horseshoe bat (*Rhinolophushipposideros*), greater horseshoe bat (*Rhinolophusferrumequinum*)) to be protected.

The Primeval Beech Forests of the Carpathians represent an outstanding example of undisturbed, complex temperate forests and exhibit the most complete and comprehensive ecological patterns and processes of pure stands of European beech containing an invaluable genetic reservoir of beech and many associated species.

Aggtelek Biosphere Reserve and National Park is situated on the karst area of the southern limestone foothills of the Carpathians containing more than 700 caves. Its cave system is one of the most complex examples of karstic phenomena occurring at medium altitude in the temperate zone. The karst landscape is dominated by karst plateaus with dolines and valleys with permanent or temporary watercourses disappearing in sinkholes.

The East Carpathians is a transboundary mountain biosphere reserve with significant value for biodiversity conservation in Central Europe, with four distinct vegetation types e.g. natural and semi-natural beech forests. The mixed Carpathian forest provides suitable conditions for large mammals e.g. brown bear (*Ursusarctos*), European bison (*Bison bonasus*), lynx (*Lynx lynx*) and over 100 species of birds live in the area e.g. the black stork (*Ciconianigra*).

According to Kadlečík (2014) the Carpathian list of invasive alien species includes 77 taxa[32]. From the 37 plant species, 32 are herbs and 5 woody plants. Majority of animal species are invertebrates, 14 arthropods and 11 mollusks are listed. The most numerous group of invasive vertebrates are fishes (with 10 species on the list).

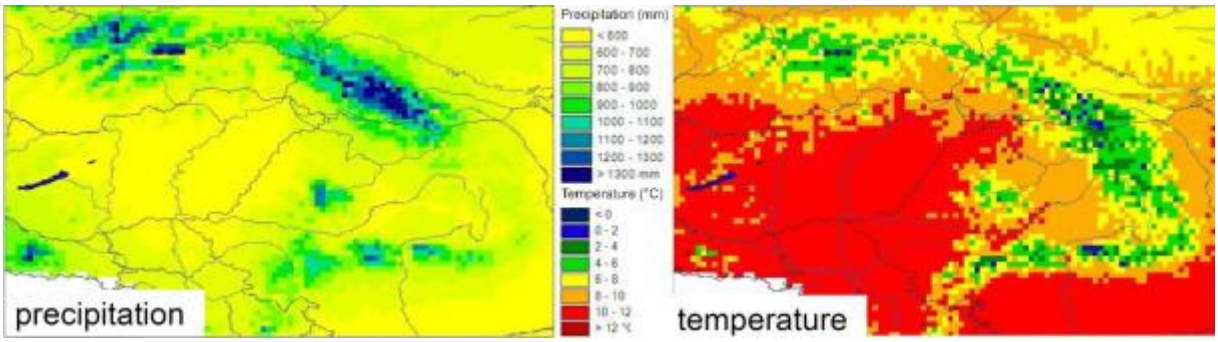
The biodiversity and natural heritage face to several threats and adverse impacts of anthropogenic and of natural origin. Land abandonment, habitat degradation, conversion and fragmentation, deforestation, the diminishing population of small settlements, industrialization, pollution, urbanization and overexploitation of natural resources, climate change and mass tourism can have adverse impacts on the landscape and on the biodiversity in the Carpathians and the migration of animals.

2.1.2 Air and climate change

The climatic characteristics of the area are highly determined by the topography. There are large differences between the regions. At lower elevation parts of the area the climate is more continental

[32]Kadlečík, J. (2014). Carpathian list of invasive alien species. State Nature Conservancy of The Slovak Republic ISBN 978-80-89310-81-4

with lower precipitation amount and higher temperature, compared to the mountains. The driest and warmest region is the Pannonnian Basin, with <600 mm annual precipitation sum and 10-12 °C annual mean temperature for the 1961-2010 period. At the Podolian Upland annual precipitation sum is slightly higher (600-700 mm) and annual mean temperature is lower (6-8 °C). The mountainous region is the most humid and coldest part of the area. The annual precipitation sum is increasing with the elevation, on the highest parts it exceeds the 1300 mm, while annual mean temperature is decreasing with the elevation, on the highest parts it is only slightly above 0 °C.

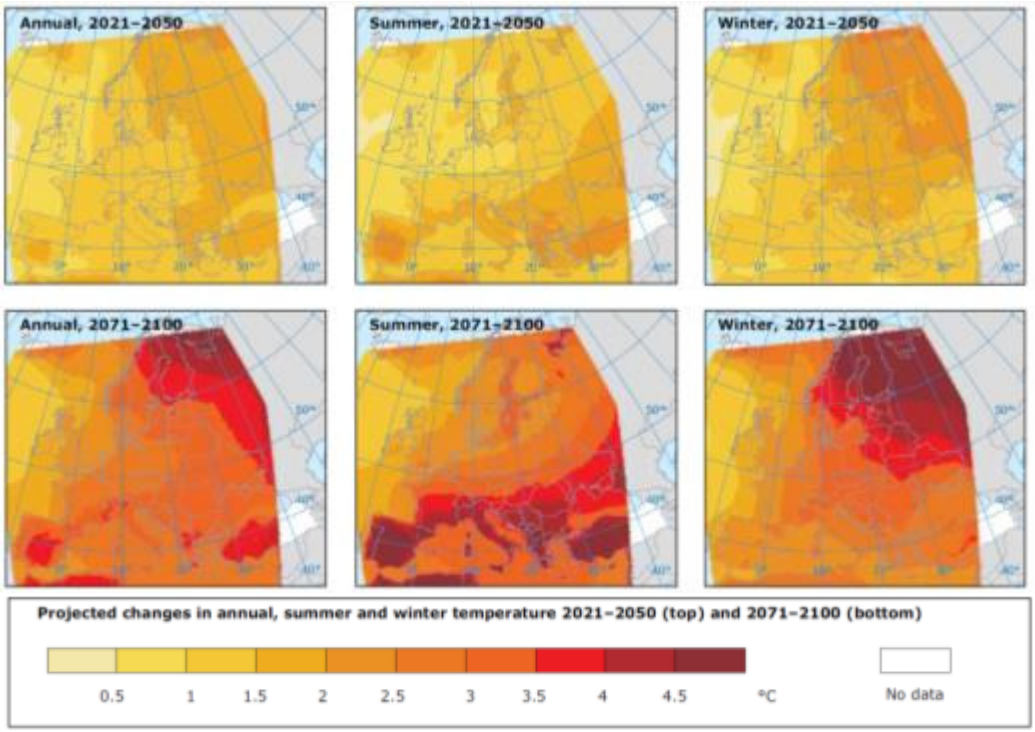


Map 3 - Averages of precipitation and temperature for the 1961-2010[33]

Due to climate change in the past 50 years (1961-2012 significant warming has been observed in the region. The rate of warming was 0.2-.25 °C/decade (overall 1-1.25°C for 50 years). Extreme high temperatures, for example number of warm days (by 6-7 days/decade) and nights and heat waves, have become more frequent in the past while extreme low temperatures, for example cool days and nights (by -3 to -4 days/decade), cold spells and frost days, have become less frequent. According to ESPON Climate change typology, most of the eligible area belongs to Southern Central Europe Climate Change region[34] except of Prešov region belonging to the Northern Central Europe Climate Change region.

According to results gained from the ENSEMBLES project these tendencies will continue in the next decades. The annual mean temperature is projected to increase by 1-1.5 °C for 2021-2050 and 3-3.5°C for 2021-2050 compared to 1961–1990. Moreover, seasonal changes could be even higher, in the summer months (June-August), annual mean temperature can increase by 3.5-4 °C. The precipitation projection indicate only slight changes in the annual precipitation sum for 2021-2050 (-5 to +5 %), however for 2071-2100 it can decrease by 10-20%. Seasonal changes are projected to be more intensive (summer precipitation decrease exceeds the annual value, while in the winter months precipitation increase is projected). The trend in changes of extreme temperature and precipitation values will also continue for the next decades[35].

[33]Lakatos, M., Bihari, Z., Szentimrey, T., Szalai S. and "CARPATCLIM participants"2013: Climate of the Carpathian Region. Digital climate atlas of the Region- Summary of the CARPATCLIM project. 11th European Conference on Applications of Meteorology (ECAM) 09 – 13 September 2013, Reading, United Kingdom
[34]ESPON Climate.Climate Change and Territorial Effects on Regions and Local Economies.ESPON& IRPUD, TU Dortmund, 2011. www.espon.eu
[35]Climate change, impacts and vulnerability in Europe 2012 An indicator-based report, EEA, Copenhagen, 2012



Map 4 -Projected changes in annual (left), summer (JJA; centre), and winter (DJF; right) near-surface air temperature (°C) for the period 2021–2050 (above) and 2071–2100 (below), compared to 1961–1990. Projections are based on the ENSEMBLES project. They have been obtained from different regional climate models (RCMs) performing at 25 km spatial resolution with boundary conditions from five global climate models (GCMs), all using the IPCC SRES A1B emission scenario.

The potential impact of climate change can be characterized by ESPON Aggregate potential impact of climate change. Hungarian and Slovak regions are facing medium or high increase; Romanian regions will have low increase[36]. The more the potential impacts increase, the more adaptation is important in order to avoid negative consequences on the economy, population, physical assets, cultural heritage and the environment.

The effects of the described climate change (increasing temperature, decreasing precipitation and more frequent extreme climate events) were observed even in the last decades, resulting in increased and more frequent flood events and low water periods on the rivers, extensive and more severe drought events and several inland excess water events (mainly in the Pannonian Basin). These have had serious socio-economic and environmental consequences e.g. for agriculture or property, infrastructure or energy production.

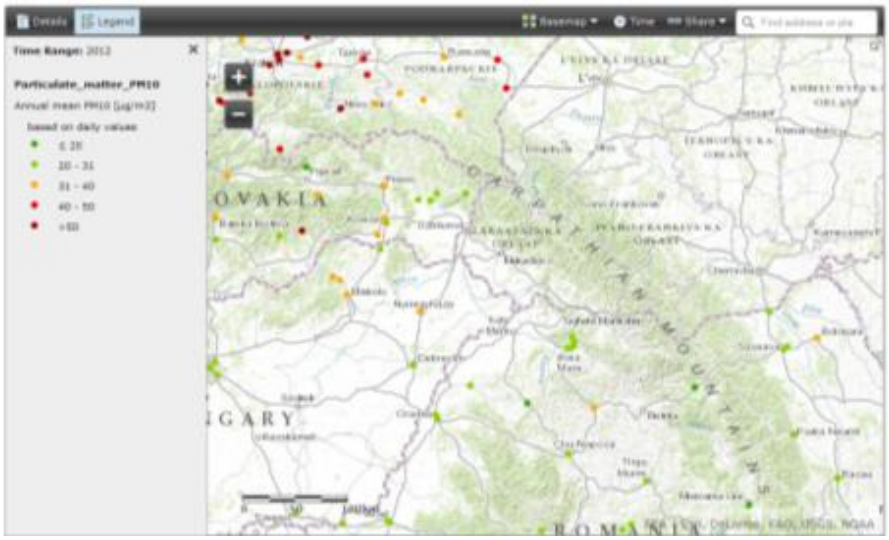
Based on the results of climate simulation the effects will be similar to those expected in the last decades, however more severe effects are expected for the next decades. An increasing flood hazard is consistently projected, the relative change in river floods with a return period of 100 years for

[36]ESPON Climate.Climate Change and Territorial Effects on Regions and Local Economies.ESPON& IRPUD, TU Dortmund, 2011. www.espon.eu

2080s increases by 10-20%, and only on the Slovakian sections of the rivers it will not increase[37]. Floods originating from snowmelt can occur earlier[38]. Low water periods on river are expected to be more frequent and more severe, having consequences also on water quality (due to less water amount and higher water temperature). The projected climate change can affect the vegetation. Changes in species composition, decrease of wetlands and increasing spread of invasive species can be expected.[39]

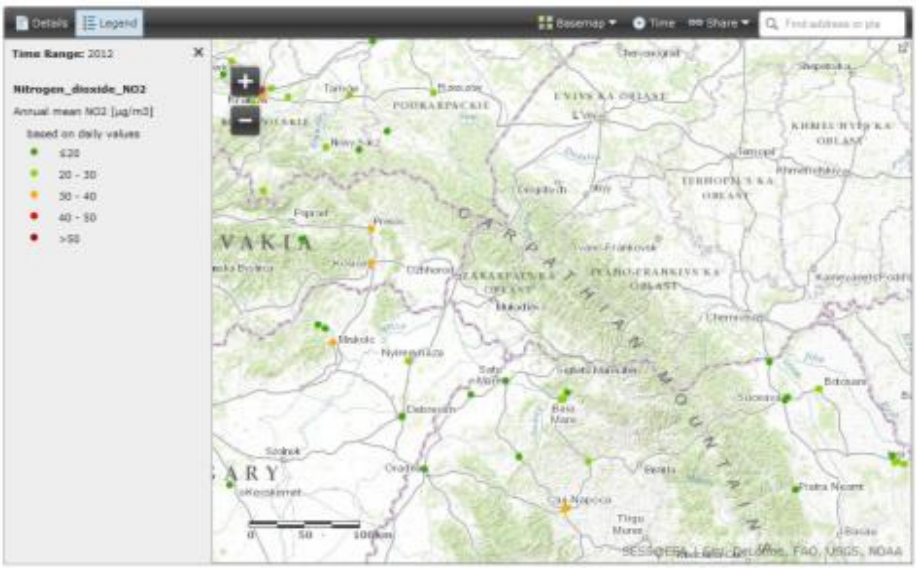
Regarding GHG emissions, regional data are not available. Based on country level data, decreasing emission trends for GHG gases are reported for all countries. The rate of decrease was 45.8% between 1985-1987 and 2012 in Hungary; 58.3% between 1989-2012 in Romania; 41.7% between 1990-2012 in Romania and 57.3% between 1990-2012 in Ukraine[40] (GHG emissions without LULUCF in CO2 equivalent). All countries are over the EU-28 average GHG emission decrease, which was 19.2% between 1990 and 2012.

In the area mainly air pollutants from anthropogenic origin influence the air quality. The sources of nitrogen and sulphur oxides are mainly from fossil fuel burnings for energy generation, transport and industry. In the past decades, significant reduction of SO2 concentrations, S deposition and the SO4/NO3 deposition ratio have been observed[41]. According to the annual average of 2012, only the cities of higher industrial production have higher load of PM10, NO2 in the eligible area (e.g. Miskolc, Košice, Prešov, and Suceava).

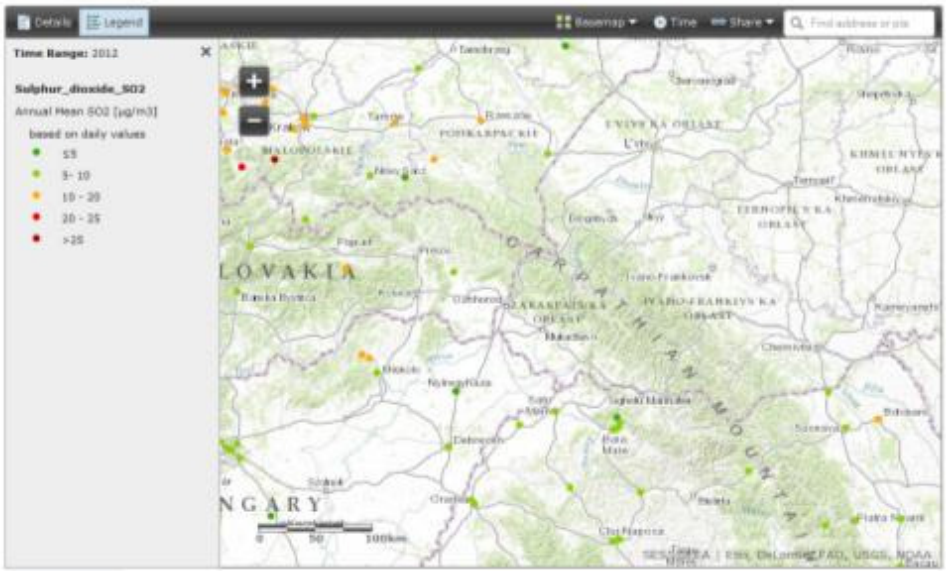


[37]Climate change, impacts and vulnerability in Europe 2012 An indicator-based report, EEA, Copenhagen, 2012
[38]Novaky, B. 2011: Azéghajlatváltozáséshatásai. In. Somlyódi, L. (ed.) Magyarországvízgazdálkodása:helyzetképésstratégiaifeladatok. MTA, Bp. 85-102.
[39]Jurek, M., Crump, J.,Maréchal, J. (2014). Futureimperfect. Climatechange and adaptationinthe Carpathians.http://www.carpathianconvention.org/tl_files/carpathiancon/Downloads/04%20Publications%20-%20Press%20-%20Gallery/Documents%20and%20Publications/FutureImperfect_lo.pdf
[40]Summary of GHG Emissions. United Nations, ClimateChangeSecretariat; http://unfcc.int
[41]Kozak J., BjörnsenGurungA. &Ostapowicz K. (eds.): Research Agenda fortheCarpathians: 2010-2015. Kraków, 2011. http://www.forumcarpaticum.org/FC-main/Download/Research_agenda_for_the_Carpathians.pdf

Map 5 -Annual mean concentrations of particulate matter (PM10) based on daily averages in 2012 with at least 75% of valid measurements, in µg/m^3 (source: EEA, AirBase v.8).



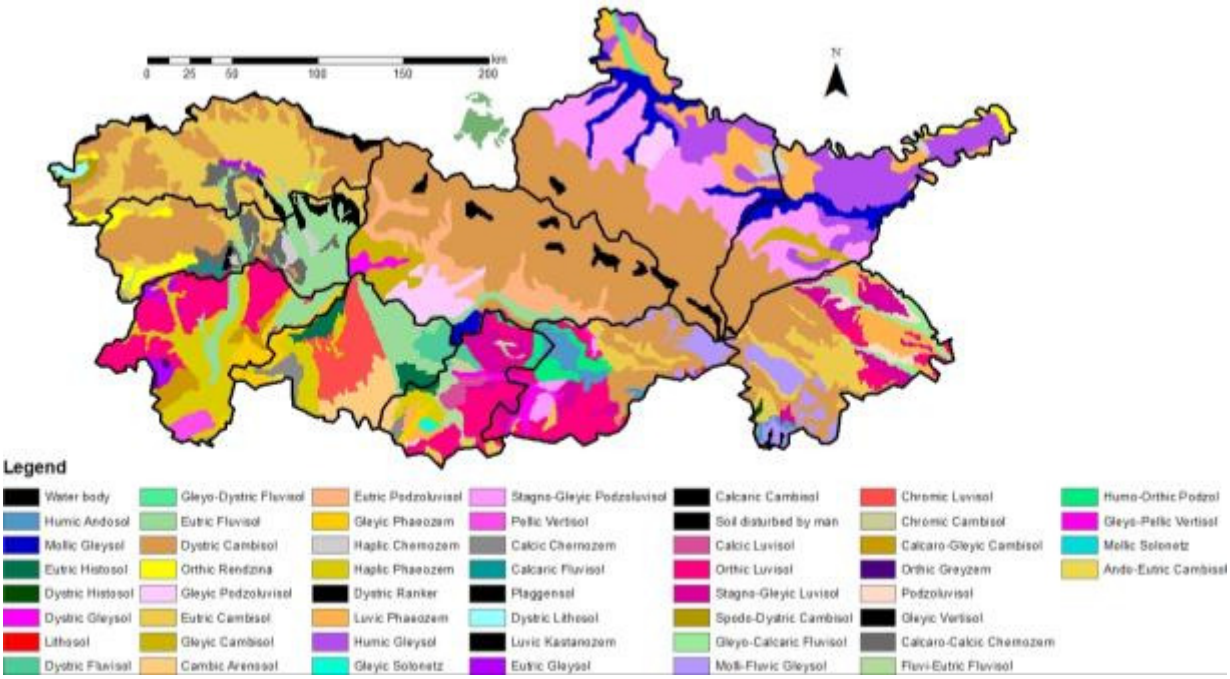
Map 6 -Annual mean concentrations of Nitrogen-dioxide (NO_2) based on daily averages in 2012 with at least 75% of valid measurements, in µg/m^3 (source: EEA, AirBase v.8).



Map 7 -Annual mean concentrations of Sulphur Dioxide (SO_2) based on daily averages in 2012 with at least 75% of valid measurements, in µg/m^3 (source: EEA, AirBase v.8).

2.1.3 Soil and land use

The eligible area has a great variety of soil types due to the different landscape types that are covered. In the Pannonian Basin several subtypes of mostly Luvisols and Fluvisols can be found. The Carpathian Mountains are mostly covered by (Dystric and Eutric) Cambisols. The soils of the northeastern parts are mainly subtypes of Gleysols. The most fertile soils of the region are located on the plain areas of the Pannonian Basin and the Podolian Uplands.



Map 8 -Soil types in the eligible area (data source: Fao85 Soil database)

Soil degradation means loss of soil or soil quality due to extreme natural events contributing to e.g. erosion, inundations, landslides, furthermore, caused by human interactions, e.g. inadequate land use, contamination. The major soil degradation processes[42] are: soil erosion, salinization, soil compaction, soil sealing, soil desertification, floods and landslides, loss of organic matter and soil contamination. Due to these threatening factors soil functions can be reduced (e.g. filter, buffer, barrier, habitat for wildlife, production function). Therefore, monitoring assessments and adequate land management need to be targeted. Soil mapping, monitoring and databases are available in EU member countries in the eligible area[43]. In Ukraine soil monitoring has also been initiated in the past decade[44].

Intensive agricultural production can result in soil degradation via the overuse of soil fertilizers or soil compaction due to the inadequate soil tillage. In soil contamination inadequate solid waste disposal, industrial waste management and industrial, transportation and agricultural contaminations play important role. Due to the high ratio of steep slopes, water erosion and possible floods and landslides are threatening factors in the area. Intensive forest management may contribute to higher soil erosion.

Waste production and waste management can highly contribute of soil quality and land management. According to statistical data of 2013[45], the generated municipal solid waste per year

[42]Tóth, G.,Montanarella,L., Rusco, E. (2008). Threats to Soil Quality in Europe. European Commission, JRC, ISBN 978-92-79-09529-0.
[43]http://eusoils.jrc.ec.europa.eu
[44]http://eng.menr.gov.ua/index.php/monitoring
[45]Hungarian Central Statistical Office 2013, Statistical Office of the Slovak Republic 2013

per capita was between 194 and 272 kg in the Hungarian and the Slovak Counties. The lowest amount of municipal waste is characteristic for Szabolcs-Szatmár-Bereg County and the highest values belong to Kosice. Regional data are not available for Romania. According to the EEA country report[46], the generated municipal solid waste was 365 kg/year/capita for Romania, which is slightly over the previously mentioned averages. Zakarpatska was characterised by 98.2 -129 kg/years/capita waste production in the past years[47] that is below the production of the other counties. For Chernivetska, 244.75 kg/year/capita municipal waste production for 2011 was reported[48] that is similar to the Hungarian and Slovakian regions. For Ivano-Frankivska, the available data (1225.8 kg/year/capita) contain industrial waste as well that makes the comparison impossible. According to the EEA state reports on environmental indicators[49], the recycling rates of municipal waste and waste treatment are increasing continuously especially in Hungary and Slovakia. These ratios are less in Romania and Ukraine[50] at present.

Sewage drainage system availability is the highest for the Hungarian and Slovak regions, varying between 59.8 and 71.3%[51]. In case of Romanian counties, it was between 52.6 and 73.3% in 2011[52]. For EU member countries in waste water management issues the Urban Waste Water Directive (UWWD, Council Directive 91/271/EEC) and the Water Framework Directive (WFD, Council Directive 2000/60/EC) are guiding principles. The target status requires further measures. The level of sewer coverage of the settlements in Ivano-Frankivska and Chernivetska Regions in 2011 is 4 and 6.2%[53] respectively, which values are the lowest among the regions (however, in the cities the canalisation is between 80 and 100%). Zakarpatska Oblast has centralised drainage system coverage of 58.7 %[54].

2.1.4 Waters (ground waters, surface waters)

The main surface water flows of the region is Tisa/Tisza River, its catchment covers the total area of the Hungarian and Romanian parts of the Program area. Most of the area of the Slovakian counties also belongs to the Tisa catchment, only a small area in NE Prešovskỳ belongs to the Dunajec catchment. The area of Zakarpatska county in Ukraine also belongs to the Tisa catchment, covering

[46] Almasi, A.M. (2013). Municipal waste management in Romania. Copenhagen Resource Institute.
[47] StatisticalYearbook of Ukraine, 2013
[48] A Pressure-Impact Analysis/Risk Assessment According to the EU WFD. Development Of Draft River Basin Management Plan For Selected Pilot Basin In Ukraine - The Prut Basin
[49] http://www.eea.europa.eu/soer/countries/
[50] StatisticalYearbook of Ukraine 2013, State Statistical Service of Ukraine
[51] Hungarian Central Statistical Office 2013, Statistical Office of the Slovak Republic 2013
[52] National Institute of Statistics 2011 (Romania)
[53] A Pressure-ImpactAnalysis/RiskAssessmentAccordingtothe EU WFD. Development Of DraftRiverBasin Management Plan forSelected Pilot Basin inUkraine - The Prut Basin
[54] TICAD TisaCatchmentAreaDevelopment, National Study, Ukraine, 2010.

12,732 km[255], while the eastern part of the area belongs to the catchments of the Prut (catchment area in Ukraine: 9168.25 km[256]) and Siret (Duna) and to the catchment of the Dnister.

Rivers in the area have high importance, they are used in many different ways e.g. for providing water for agriculture or industry, receiving waters for either urban and industrial wastewaters, mining, navigation or energy production.

Map 9 -Main water flows of the area

In the past 150 years, the increasing human influence on the catchments has caused severe environmental problems related to water quality (pollution) and quantity (floods). The rivers in the region are under the threat of pollution from municipalities and urban settlements, farming, and from industry and mining[57]. Within the region, the accidental spills of hazardous substances can severely affected the aquatic environment and water quality. Accidents are concentrated in time and space and often have severe immediate as well as localized ecological consequences[58]. The Ecological status of Surface Water Bodies in the region is mainly Moderate, on some upstream section of the rivers it is Good[59] The chemical status of the Surface Water Bodies was classified as Failing good status by DRBM Plan (2009) or Possibly at risk state in Ukraine.

Floods originating from snowmelt accompanied with rainfall typical for major rivers with headwaters in high mountains occur usually in late winter or early spring months, in February-April. Another flood hazardous period is summer due to intensive precipitation events. River engineering (river regulation and flood protection or dam building), land use change on the catchment (e.g. deforestation or urbanization) or in channel sand and gravel mining caused significant

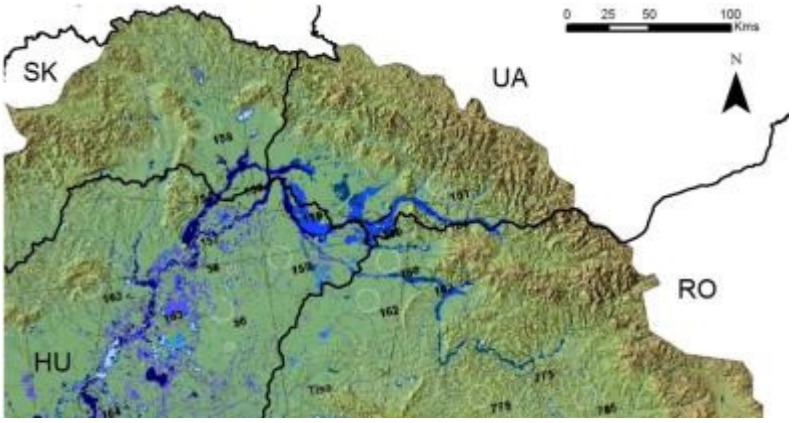
[55]vanNood, M., Kovács, P., Whalley, P., Heilmann, D., Milovanović, M., Kunikova, E., Jula, G., Iarochevitch, A. 2011: Integrated Tisza RiverBasin Management Plan. Water Research and Management, Vol. 1, No. 2 (2011) 1-12
[56]A Pressure-ImpactAnalysis/RiskAssessmentAccordingtothe EU WFD. Development Of DraftRiverBasin Management Plan forSelected Pilot Basin inUkraine - The Prut Basin

[58]Integrated Tisza RiverBasin Management Plan ICPDR / International CommissionfortheProtection of theDanubeRiver / www.icpdr.org

[59] DRBM Plan 2009

hydromorphological alteration of the channels. These changes, enhanced by climate change, caused increasing flood hazard. This increasing flood hazard has been observed during the extreme flood events of the past two decades. On the Hungarian section of the Tisa/Tisza River, the flood levels are highly determined by the flood characteristic of the Ukrainian and Romanian upstream sections. Therefore the flood hazard on the Hungarian section is even higher due to the development of Ukrainian flood protection system (the levees of the Tisa/Tisza was heightened and strengthened and the possibilities of dam failure decreased). Because of the above facts, Ukraine and Hungary heightened the level by 67-191 cm on the Hungarian section (16/2013. (III.12.) VM Regulation, HU)[60]

Flood protection systems are broadly developed, containing flood protection levees, in-channel and external water storage facilities or in-channel regulation constructions however there are problems with the physical condition and height of the levees.At some places flood protection is notavailable, therefore further flood protection constructions are necessary in the region.



Map 10 -Map of the flooded areas during flood and inland excess water events between 1998 and 2006[61]

The low water levels of the rivers continuously decreased in the past decades due to climate change and hydromorphological alteration of the channels. Low waters are typically occurring from August to October, which can increase the drought hazard of the region and can affect the energy production and water uptake.

Monitoring of water quantity and quality of main rivers is part of the cooperation in transboundary water management, coordinated and regulated by bilateral agreements between the countries: Hungary–Slovakia (valid from 1978), Hungary–Ukraine (valid from 1999), Hungary–Romania (valid from 1986), Ukraine–Romania (valid from 1999) and Ukraine–Slovakia 1994 (valid from 1995)[62]. Water quality and quantity measures are carried out jointly. The five Tisza River Basin countries Hungary, Romania, Serbia, Slovakia and Ukraine signed a management plan in 2011 to ensure good

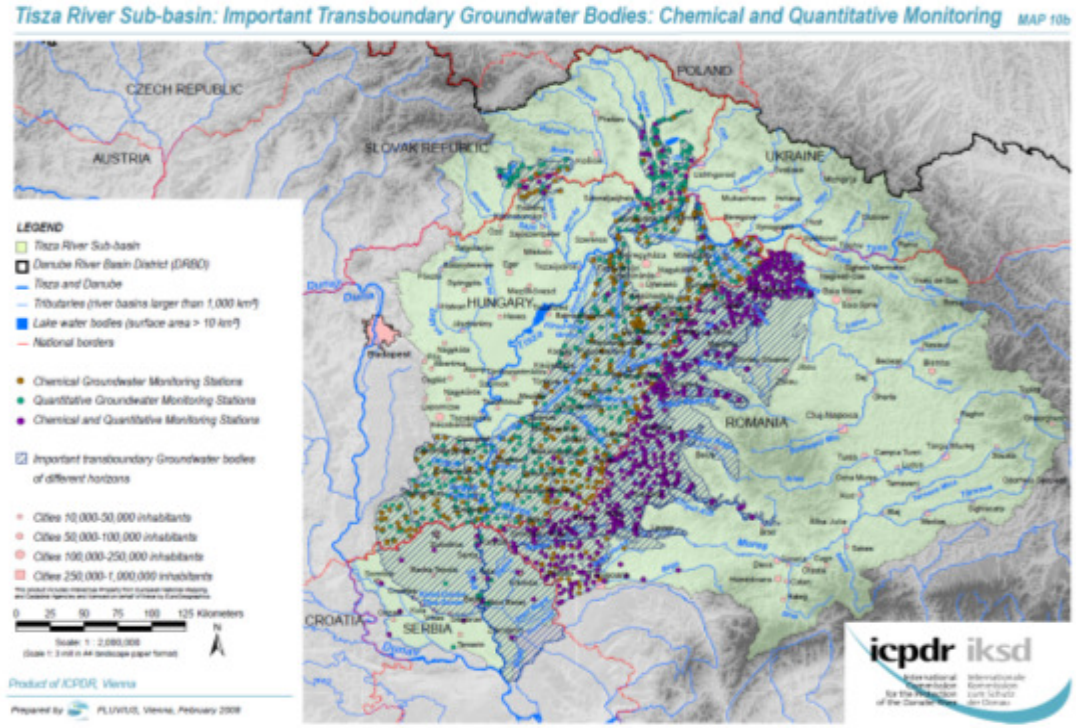
[60]Dajka István (2013): A Felső-Tisza árvízvédelmi helyzete az új mértékadó árvízszintek tükrében. XXXI. Országos Hidrológiai Vándorgyűlés Gödöllő, 2013. július 3-5.
[61]http://www.icpdr.org/main/activities-projects/tisar-2007-development-tisza-river-basin-management-plan
[62]Initial step toward the Tisza RiverBasin Management Plan – 2009(Annexes)http://iwlearn.net/iw-projects/2617/maps_graphics/Map_04_07_15-23.pdf/view

water quality and envisage further cooperation in protecting the valuable environment of the basin[63.] The currently operating monitoring system is providing a fair flood protection on the rivers, but it needs further improvement, since the flow travel time on the rivers is short, thus floods and pollutions reach the lower sections in a few days.

Consequently, steps toward building–up transboundary monitoring and early-warning systems were made and management plan was also prepared, but further developments are essential to ensure flood and environment safety of the region.

In the lowland part of area (Pannonian Basin) there is another water related problem: the inland excess water, occurring regularly and covering large areas. Inland excess water typically occurs in the late winter-early spring period and causes problems in the agriculture.

Groundwater in the Tisza River Basin is of major importance and is subject to a variety of uses, with the main focus on drinking water, agriculture and industry. Important transboundary groundwater bodies are allocated in the area, which transboundary areas > 4000 km2. These transboundary groundwater bodies are classified as vulnerable[64].



Map 11 -The important transboundary groundwater bodies and the locations of chemical and quantitative monitoring stations[65]

[63]http://www.icpdr.org/main/publications/joint-commitment-tisza-river-basin-good-water-quality-all-tisza-countries

[64]http://www.icpdr.org/main/activities-projects/danube-river-basin-management-plan-2009

[65]http://www.icpdr.org/main/activities-projects/tisar-2007-development-tisza-river-basin-management-plan

The main reasons for pollution of groundwater are the intensive agriculture and livestock breeding,the insufficient wastewater collection and treatment at the municipal level, inappropriate waste disposal sites, urban land use and insufficient wastewater treatment at industrial enterprises.

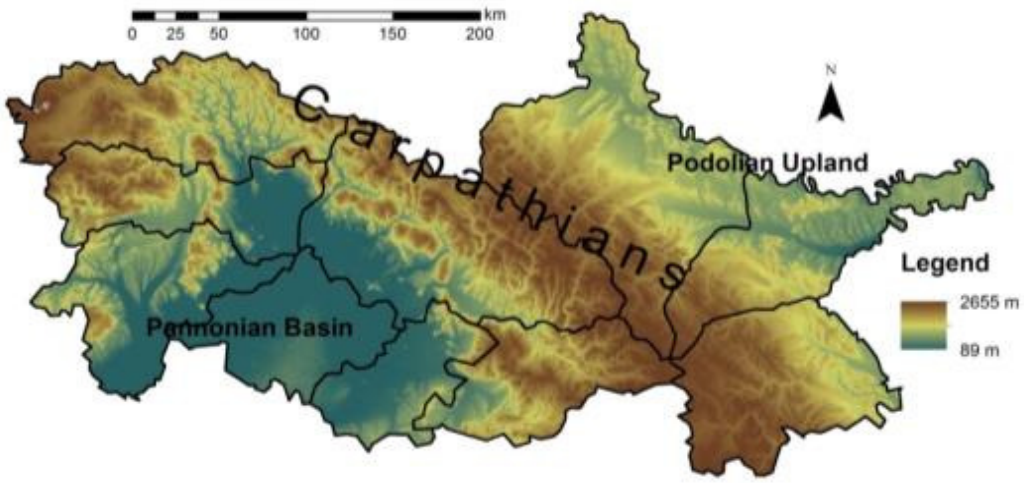
Groundwater and in some regions also surface waters are the main sources of drinking water. In the Hungarian and Slovakian counties the main source is groundwater. In the Romanian and Ukrainian counties both surface water and groundwater are important sources of drinking water (e.g. in Zakarpatska county 60% is from groundwater and 40% from surface sources[66]).

According to the statistics on public drinking water systems, the availability is the highest in the Hungarian and the Slovakian counties (79.5-93.2%). For Romanian counties the availability is lower, varies between 55.2 and 73.3%, based on data from 2011[67]. For Ukrainian regions, only data for the Zakarpatska region is available (59.7%)[68], and based on this data, the state of drinking water systems' availability is similar to the Romanian counties.

2.1.5 Landscape and land cover

The eligible area hosts several landscapes and landscape types due to its physical geographical conditions. The major physical geographical units in the eligible area are the Carpathian Mountains, the Pannonian Basin and the Podolian Upland. The counties of Ukraine, Romania and Slovakia are characterised by mostly mountainous or hilly landscape. The highest peaks in the countries of the Carpathians area are Hoverla *Peak* (Ukraine, 2061 m), PietrosulRodnei*Peak* (Romania, 2303 m), Gerlach*Peak* (Slovakia, 2655 m). The western edge of the Podolian Upland constitutes the eastern border of the eligible area, belonging to the Ukrainian regions. In the arc of the Carpathian Mountains the Pannonian Basin is situated. The Hungarian counties, furthermore partly Zakarpatska and Satu-Mare are located at such lowland conditions.

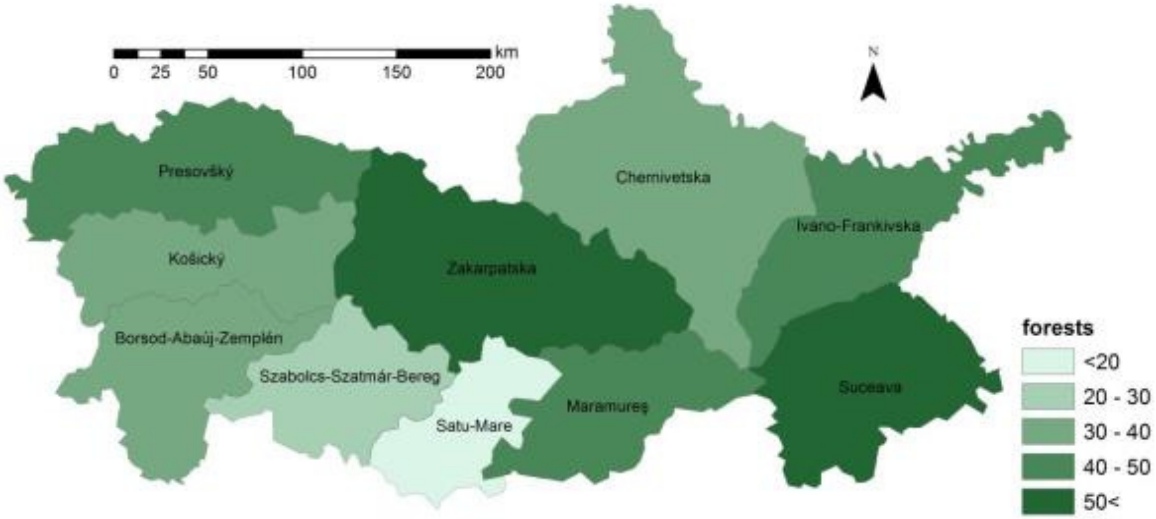
[66]TICAD, Tisa Catchment Area Development National Study, Ukraine 2010. http://www.vati.hu/files/articleUploads/21356/Ukraine_nat_analys_31.11.2010.pdf
[67]Hungarian Central Statistical Office 2013, Statistical Office of the Slovak Republic 2013, National Institute of Statistics 2011 (Romania)
[68]TICAD, Tisa Catchment Area Development National Study, Ukraine 2010.http://www.vati.hu/files/articleUploads/21356/Ukraine_nat_analys_31.11.2010.pdf



Map 12 -Relief conditions of the eligible area (data source: SRTM)

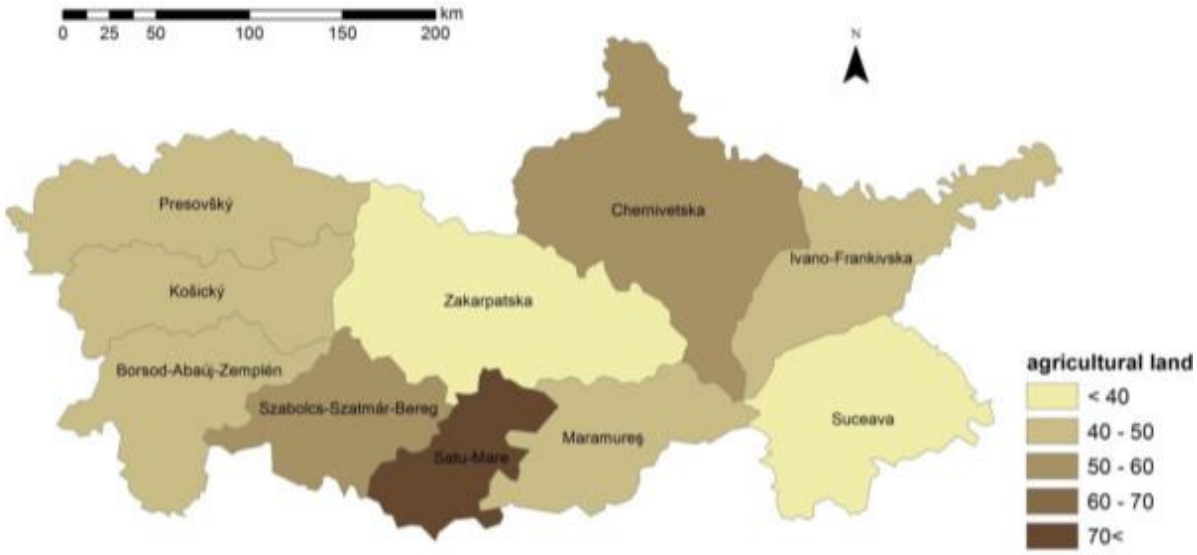
The spectacular geo-morphological forms are comingfrom the geological history resulting in diverse rock types in the area. Smoothed relief forms are characteristic on flysch rocks and deep gorges, sharp ridges and summits are typical on crystalline rocks. The traces of pleistocene icing (e.g. kars, glacial cirques, trough valleys and moraine) are also represented. The limestones and dolomites of the Trias, Jurassic and Lower Cretaceous Ages are in forms of isolated cliffs, and the karst phenomena is well marked by its underground forms (e.g. caves, pits). On the Pannonian Basin fluvial form (e.g. ox-bow lakes, remnants of paleo-channels) and eolian form (e.g. sand dunes, deflation hollows) are characteristic.

Forests are characteristic in the counties of the North-Eastern Carpathian Mountains. The forest coverage is higher than 40% in case of Presovský region, Zakarpatska and Ivano-Frankivska regions, furthermore in Sucaeva and Maramureş. The highest ratio of tree coverage is observed in Zakarpatska (51%), while the least in Satu Mare County (22%).



Map 13 -Forest cover (%) of the eligible area (data source: Hungarian Central Statistical Office 2013, Statistical Office of the Slovak Republic 2013, National Institute of Statistics 2012 (Romania), State Statistical Service of Ukraine 2013)

The north-eastern and the south-western parts of the eligible area are used more intensively by agricultural production, due to the soil and climate conditions. Agricultural production involves arable lands, orchards, vineyards and pastures as well. The highest ratio of the agricultural lands (71.9%) is in Satu-Mare country (Romania)that is followed by Chernivetska and Szabolcs-Szatmár-Bereg counties where approx. 60% of the area is used by agriculture. Zakarpatska and Suceava are the counties with the least coverage of agricultural areas.



Map 14 -Coverage of the agricultural areas (%) of the eligible area (data source: Hungarian Central Statistical Office 2013, Statistical Office of the Slovak Republic 2013, National Institute of Statistics 2012 (Romania), State Statistical Service of Ukraine 2013).

The bedrock of the diverse surface formed in the Mesozoic and mostly in the Kainozoic. The region is rich in mineral resources. In the sedimentary and volcanic zones significant ore and building material resources can be found, e.g. clay, sand, sandstone, gravel, tuff, dolomite, marble and limestone. The salt, mineral and thermal water resources are also significant.

2.1.6 Material assets, cultural heritage

The cultural heritage of the Carpathians is unique and important in Europe with its complexity in styles and impacts. This region preserves parts of the European folk art and architecture that is preserved mostlyin itsintact status. It has been recognized that natural and cultural heritage including customs and traditional technologies specific to the region constitute essential features to tourismtogether with the aesthetic value of the environment.More than 200 museums (80 in the Hungarian, 71 in Romanian, 23 in the Slovakian and 50 in the Ukrainian counties)[69] are operating in the eligible area presenting valuable historical and cultural heritage.

Winter tourism

[69] Hungarian Central Statistical Office 2013, Statistical Office of the Slovak Republic 2013, National Institute of Statistics 2011 (Romania), Statistical Yearbook of Ukraine, 2013

The best winter sport possibilities in the area are in the high Carpathian Mountains of Slovakia, Poland and Romania. The Ukrainian facilities are not yet developed, and Hungary's ones are rather poor in this respect.

Rural tourism

Rural tourism is among the most dynamic types of tourism. It provideseconomic activity and income for rural population, thus works against migration; furthermore, it brings tourists closer to the daily life and customs of the visited region. Rural accommodations are quite expanded in Slovak and Romanian counties in the eligible area. Folk culture, local products, and gastro-tours are main products of the rural tourism.

Gastro tourism

The eligible area is showing many good examples of wine tourism, where historical and traditional ways of wine production are also demonstrated. One of the most famous wine regions under UNESCO protectionis the Tokaj wine region representing a distinct viticultural tradition that has existed for at least a thousand years and which has survived intact up to the present.

Health tourism

Mofettas, salt mines, lakes, mineral springs and the climate therapy of the Carpathian Mountains are the most characteristic features of health tourisms in the region. The microclimate of karstic cave chambers has beneficiary effects on people suffering from respiratory illnesses.

Religion tourism

A very large number of pilgrimage sites, mostly churches, chapels, are located in the Carpathian area, and also in the eligible area. They are Máriapócs in Hungary; Moisei, BogdanVoda, Rozavlea, Barsana in Romania; Univ, Krekhiv, Lviv, Hrushiv in Ukraine and Košice and L'utina in Slovak Republik[70]. Wooden churches of high importance can be found in Romania, Slovakia and Ukraine as well. Many of these are under UNESCO protection, and in Ukraine many of them would require restoration.

The eligible area hosts high number of UNESCO world heritages[71]:

- Tokaj Wine Region Historic Cultural Landscape (Hungary): it demonstrates the long tradition of wine production in the region of low hills and river valleys. The vineyards, farms, villages, small towns and historic networks of wine cellars carved by hand into mostly volcanic rocks are special features of the area.
- Levoca, SpisskyHrad and the Associated Cultural Monuments (Slovakia): it is one of the largest ensembles of 13th and 14th century military, political and religious buildings in Eastern Europe. This Romanesque and Gothic architecture has remained remarkably intact.

[70]http://www.carpathianconvention.org/tl_files/carpathiancon/Downloads/03%20Meetings%20and%20Events/Working%20Groups/Spatial%20Planning/200805_Strategic%20Workshop%20on%20Spatial%20Planning/7VASICA.pdf
[71]www.unesco.org

- Bardejov Town Conservation Reserve (Slovakia): it is a well-preserved example of a fortified medieval town, containing a small Jewish quarter around a fine 18th-century synagogue.
- Wooden Churches of the Slovak part of the Carpathian Mountain Area (Slovakia): they consist of two Roman Catholic, three Protestant and three Greek Orthodox churches built between the 16th and 18th centuries.
- Wooden Churches of Maramures (Romania): The churches are outstanding examples of a range of architectural solutions from different periods and areas, contributing to the cultural landscape of the mountainous area of northern Romania.
- Churches of Moldavia (Romania): The eight churches were built from the late 15th century to the late 16th century, their external walls covered in fresco paintings, are masterpieces inspired by Byzantine art. They are authentic and particularly well preserved.
- Residence of Bukovinian and Dalmatian Metropolitans (Ukraine): it is an outstanding example of 19th-century historicist architecture, also includes a seminary and monastery and is dominated by the domed, cruciform Seminary Church with a garden and park.

A large number of castles are located in the region. In Northern Hungary castles are the main tourist attractions of the area (e.g. Castles of Diósgyőr, Boldogkő, Regéc, Füzér, Szerencs, Sárospatak or Andrássy-Kastély), but several castles need renovation. Castles are important touristic destinations also in the Slovakian area. Several castles were preserved in good state e.g. Spiš Castle, Ľubovňa Castle, Kežmarský Castle , Markušovce Manor House or the manor house Strážky. Moreover,a large number of castle ruins iscomplementing the castle-related tourism offer of the areas. Joint Hungarian-Slovakian thematic touristic routes were also established to promote the joint historical-cultural values. The ‘Castle Route’ combines the castles and mansions in Szabolcs-Szatmár-Bereg and Kosice counties. In Ukraine, there are also several castles to be promoted as tourism destinations (e.g. Halych Castle, Palanok Castle in Mukacheve, Uzhhorod Castle in Uzhhorod, but their current conditionsare mainly inappropriate. In Romania, the number of important castles is lower and they are mainly in bad condition.

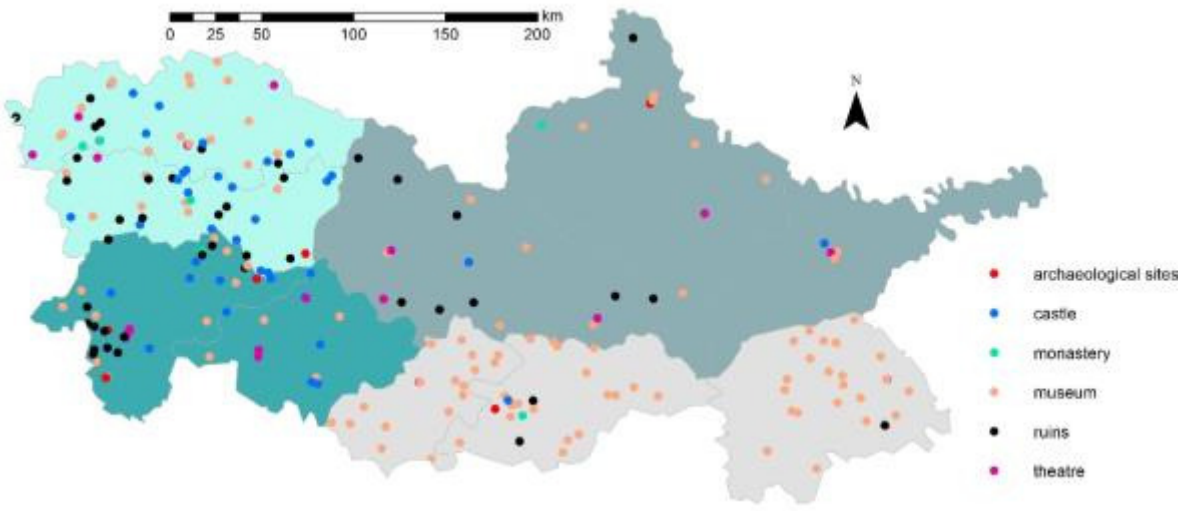
In the region several other thematic routes have been established during the past decade, guiding the tourists to discover the cultural, historical and natural heritages and features of the region. ’Plum Route’ in Satu Mare and Szabolcs-Szatmár-Bereg counties was established to present local plum, as a traditional gastronomic value of the region (plum jam, plum palinka). The ‘Route of Medieval Churches’[72]familiarizes interested tourists with the unique religious and cultural heritage of the Carpathian Basin, crossing Szabolcs-Szatmár-Bereg, Satu-Mare county and Zakarpatska regions. The medieval churches represent the eastern frontier of Western Christianity, where Gothic architecture meets the wooden churches characteristic to the Greek Orthodox denomination.

There are several winter, spring and summer festivals in the region that focuses on the promotion of historical (e.g. castles, churches), cultural (e.g. folklore, folk architecture, local craft) values of the region. The first cross border thematic cultural festival ’Carpathian Babylon’ (Uzhhorod, 2014) with the use of joint traditional, cultural and historical peculiarities of the region is an important step in

[72]http://www.temple-tour.eu/uk/churchroad

providing visibility for the joint cultural and historical heritage of the adjoining regions/counties of Romania, Hungary, Serbia and Ukraine.

On the other hand there is a general lack of a proper information system and management in tourism that would highly contribute to its development. At some regions, the inadequate state of basic tourism-related infrastructure is also a problem. Furthermore, a significant part of existing values (e.g. wooden churches, medieval castles in Ukraine) is in poor conditions and requires renovation works.



Map 15 –Locations of cultural and historical sites (data source: www.openstreatmaps.org)

2.1.7 Population and human health

The territory of the eligible area is approximately 83.000 km^2, being the cross-border area of Ukraine, Slovakia, Romania and Hungary. The 10 counties forming the areaaltogether has more than 8 million inhabitants. The proportions of the Ukrainian, Slovakian, Romanian and Hungarian nationalities within the area are 44.7%, 20.1%, 19.7% and 15.5%, respectively. The largest cities in the region are Košice in Slovakia, Miskolc in Hungary, Ivano-Franivsk and Chernivitski in Ukraine with over 150,000 inhabitants and Nyíregyháza (HU), Satu Mare and Baia Mare (RO) and Uzhgotrod (UA) with over 100,000 inhabitants.

According to the ageing index, the population over 65 years is lower than the ones below 15 in each county except Borsod-Abaúj-Zemplén County (103.9%). The lowest value belongs to Zakarpatska (58%) and Presovsky (65%), where the number of young people (under 15) is the largest compared to the over 65 people. The ageing index is ranged between 71% and 89% in the other counties[73].

[73] Hungarian Central Statistical Office 2013, Statistical Office of the Slovak Republic 2013, National Institute of Statistics 2011 (Romania), Statistical Yearbook of Ukraine, 2013

Unemployment is an important social problem of this region. The unemployment rate varies between 4.1% (Maramures) and 19.7% (Kosicky) in the cross-border area. Except for the Romanian counties the unemployment rate in the region is higher than the overall unemployment rate in the EU-28 (10.8% in 2013)[74]. In the Hungarian counties, the unemployment rate in 2013 was 12.1% (in Borsod-Abaúj-Zemplén) and 15.7% in (Szabolcs-Szatmár-Bereg), which is much higher than the country average (10.2%). In the Slovakian regions the unemployment rates are the highest (17.2-19.4%) and thus above the country-level rates (13.5%). In Ukraine, the unemployment rate was 7.2-7.4% in 2013, which is around the country average (7.2%) and in the Romanian counties it was lower (4.1-5.5%), than the country average (7.3%) The economic performance of the region is not favorable. As for GDP per capita, the Ukrainian regions show the lowest and the Slovakian regions the highest values. The GDP per capita inall regions of the eligible area is below the EU28 and the national averages as well.

Due to the unfavorable economic conditions (employment state or GDP), negative migration trend was observed in the Hungarian, Slovakian and Romanian counties. Only in the Ukrainian counties experience positive migration value.

The life expectancy is lower than the EU average (77.5 yrs) in the whole region. The lowest in Ukraine (66.1 yrs)[75], while in the other countries' figures are also quite depressing (Romania: 71 yrs, Hungary: 71.6 yrs and Slovakia: 72.5 yrs)[76].

The death rate of a population due to AIDS (HIV-disease) in 2011 was much lower than the EU28 (1.49/100 000 inhabitants). Theaverage figures in Slovakia (0.1/100 000 inhabitants), in Hungary (0.39/100 000 inhabitants) and in Romania (0.21/100 000 inhabitants) are significantly more favourable compared to the EU ones[77]. However, Ukraine takes one of the first places among European countries by the number of HIV-positive people. In Ukraine the number of AIDS-related deaths in 2012 was 8.5/100 000 inhabitants, and 7.7/100 000 inhabitants in 2013[78] . On the other hand the health status of the population is still bad and contradictory:the death rate of a population due to cancer is higher than EU 28 average in the Slovakian (290) and Hungarian (357-375) regions and in Romanian regions (259-273) it around the EU 28 average[79], whilemuch lower values were reported in the Ukrainian counties (155-180)[80]. There is a high difference in Tuberculosis in the region: the Tuberculosis death rate (per 100,000 people) in Slovakia and Hungary 0.5-0.6,while the respective figure in Romania is 5.6 and in Ukraine 13[81]

[74]http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=une_rt_a&lang=en
[75] Statistical Yearbook of Ukraine, 2013
[76] http://ec.europa.eu/eurostat/web/population-demography-migration-projections/deaths-life-expectancy-data
[77]eurostathttp://ec.europa.eu/eurostat/web/health/causes-death/data
[78] UKRAINE HARMONIZED AIDS RESPONSE PROGRESS REPORT (Reporting period: January, 2012 – December, 2013). http://www.unaids.org/sites/default/files/country/documents//UKR_narrative_report_2014.pdf
[79]eurostathttp://ec.europa.eu/eurostat/web/health/causes-death/data
[80]Statistical Yearbook of Ukraine, 2013
[81]http://databank.worldbank.org

The state of communal infrastructure system has serious deficiency in the region and also big differences are experienced among the different counties. The availability of electricity in households is good; it is approximately complete in all counties. The wastewater collection and treatment infrastructure is insufficient:in the Hungarian, Slovakian and Romanian regions and in Zakarpatska the availability of the sewage drainage system was between 52.6% and 73.3% in 2011. In the other Ukrainian counties it was only 4 and 6.2%[82].The availability of the public drinking water system is the highest in the Hungarian and the Slovakian counties (79.5-93.2%), but it is much lower in the Romanian and Ukrainian counties (55.2 and 73.3%), based on data from 2011[83].

The increasing built-up areas of municipalities together with increasing transport infrastructure contributed to increased load on human health; especially the impact of noise and the pollutant emission play important role in bigger towns and cities. Several measures for reduction and elimination of the negative impacts were implemented in EU member countries to fulfil the EU directives on pollutant emissions from road vehicles[84] and the Environmental Noise Directive (2002/49/EC)[85].

2.1.8 Energy consumption, use of renewable sources, traffic and transport

Power production of the region relies mainly on fossil fuels, followed by nuclear, hydropower and renewable energy sources. The fossil fuels used for home heating are imported oil and natural gas, furthermore wood and coal. The region has geo-strategic importance due to the traversing oil and natural gas pipelines to Western Europe.

In Ukraine, thermal power plants account for nearly 50 per cent of electricity generation, while the ratio of nuclear and hydroelectric power are 40% and 10% respectively. In Ukraine there are several hydropower stations in the Tisza Basin, with a total capacity of 31,600kWt[86]. Snyatin HPP (800kW capacity) is located on the Prut River, Yablunitsa HPP (100 kW) and Probiynovka HPP (1200 kW) operate on Prut River tributaries[87]. Increasing interest in small HPPs has been experiencedin the recent years. Number of investors seeks to rehabilitate previously operated HPPs or build new ones on both river basins; however, these important constructions highly influence the river flow and riverine ecology.

Romanian power generation is split between coal fired (40%), hydroelectric (29%), oil and gas (21%) and nuclear (10%) (2002 data) power plants. The 363 national hydropower plants use 276,832 million

[82]A Pressure-Impact Analysis / Risk Assessment According to the EU WFD. Development Of Draft River Basin Management Plan for Selected Pilot Basin in Ukraine - The Prut Basin
[83]Hungarian Central Statistical Office 2013, Statistical Office of the Slovak Republic 2013, National Institute of Statistics 2011 (Romania)
[84] http://ec.europa.eu/environment/air/transport/road.htm
[85]http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32002L0049&from=EN
[86]http://www.icpdr.org/main/danube-basin/tisza-basin
[87]A Pressure-ImpactAnalysis/RiskAssessmentAccordingtothe EU WFD. Development Of DraftRiver Basin Management Plan forSelected Pilot Basin inUkraine - The Prut Basin

m3 water/year and produce an annual 1,884,589 MWh[88]. Hydropower infrastructure often superimposed the measures undertaken against floods.

Electricity generation of Slovak Republic (27.3 TWh) is provided by nuclear 53% (Mochovce, Bohunice nuclear power plants), hydro 20%, coal 15%, gas 7%, oil 2%, biofuels and waste 2%)[89]. The hydropower potential of rivers is largely used for energy production, the Hornád River with the PalcmanskáMaša River and the Ružín hydropower plant with compensating MaláLodina reservoir, and the Ondava River (in the Bodrog sub-basin) with the VelkáDomaša hydropower plant and compensating MaláDomaša reservoir. Water for cooling purposes is used in the Vojany thermal power plant (Laborec as water source). Biomass and waste (48%), furthermore hydropower (40%) has the highest share among renewable energy sources, solar, wind and geothermal, have negligible shares.

Electricity generation of Hungary (37.4 TWh) originates from nuclear 42% (Paks nuclear power plant), natural gas 31%, coal 17%, combustible renewables and waste 7% [90]. The share of renewable energy sources more than doubled from 3.4% in 2000 to 7.9% in 2010, slightly above the IEA average (7.7%). According to data from 2010, biomass is the main renewable energy source: combustible renewables and waste, consisting of primary solid biomass, liquid biomass and industrial and municipal waste, dominate renewable energy use; furthermore, geothermal energy, biogases, wind, solar and hydropower are also accounted.

The highest overall share of energy from renewable sources belongs to Romania (22.9%) and the lowest toUkraine; however, only data from 2009 is available. The share of renewable energy in transport is similar in Slovakia, Hungary and Romania (~4%), and there are huge differences in the ratio of renewables in heating/cooling and electricity among the countries. All countries target to increase the share of renewables in the future.

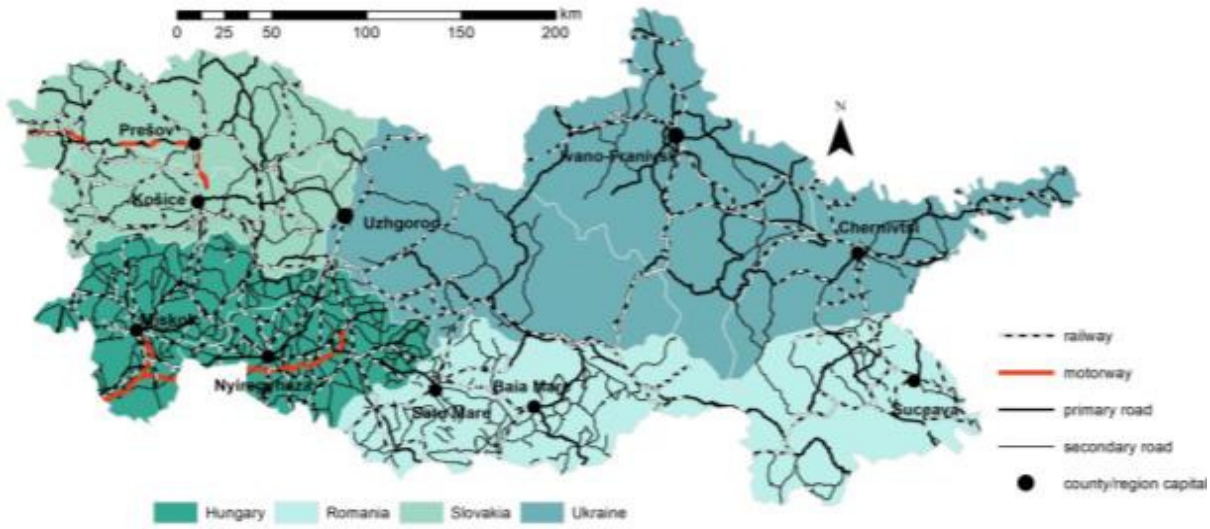
	Slovakia	Hungary	Romania	Ukraine
Share of renewable energy in heating and cooling (%)	10.5	13.54	25.74	n.d.
Share of renewable energy in electricity (%)	20.5	6.1	33.57	n.d.
Share of renewable energy in transport (%)	4.5	4.49	4.15	n.d.
Share of renewable energy in gross final energy consumption (%)	11.7	9.6	22.90	3.8 in 2009[91]

[88]http://www.icpdr.org/main/danube-basin/tisza-basin
[89]EnergyPolicies of IEA Countries. SlovakRepublikReport 2012.
http://www.iea.org/publications/freepublications/publication/Slovak2012_free.pdf
[90]EnergyPolicies of IEA Countries. Hungary Report 2011.
http://www.iea.org/publications/freepublications/publication/hungary2011_web.pdf
[91]https://www.energy-community.org/portal/page/portal/ENC_HOME/AREAS_OF_WORK/Implementation/Ukraine/Statistics

The sectorial (electricity, heating and cooling, and transport) and overall shares of energy from renewable sources in 2012[92]

Regarding the future aspects of a European more climate-friendly and less energy-consuming economy, the European Commission set out a cost-effective pathway for achieving much deeper emission cuts by the middle of the century[93]. The targeted low economy would have a much greater need for renewable sources of energy, energy-efficient building materials, hybrid and electric cars, 'smart grid' equipment, low-carbon power generation and carbon capture and storage technologies[94]. Several technologies available and applied today (e.g. low-emission buildings, electric cars) but further steps are required.

Transport infrastructure has different density and quality in the counties/regions of the eligible area. Two motorways (M3 Hungary, D1 Slovakia) reach the area from the west, but either reaches the Ukrainian and Romanian borders. The road density is the lowest in case of the counties of Ukraine and Romania, especially on the mountain areas of high elevation. There were developments in all countries in the past few years for improving infrastructure; however, further investments are necessary. The railway connections in the western part of the area are sufficient, but the facilities and linkage on the eastern regions/counties are less. The insufficient connections and quality of infrastructure affect economic, industrial sectors by less accessibility of goods and services and public by daily mobility. The number/length of bicycle pathways (even cross-border pathways) haveincreased in the eligible area in the past years, which contribute to the development of tourism and healthier lifestyle as well.



[92] BasedonMemberstatesProgressReportshttps://ec.europa.eu/energy/node/70

[93] Communication fromthe Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions . A Roadmap for moving to a competitive low carbon economy in 2050. Brussels, 2011.

[94] http://ec.europa.eu/clima/policies/roadmap/index_en.htm

Map 16 -Railways and roads in the counties/regions of the eligible area (data source: www.openstreatmaps.org)

The ICT infrastructure is less developed in the eligible area compared to the European countries, especially in the mountainous regions. According to statistical data the number of internet users is approx. three-fourth of the total number of inhabitants in Slovakia (77.9 per 100 people) and Hungary (72.6 per 100 people). In Romania in Ukraine the spread of internet using is much lower; the number of users (per 100 people) is 49.8 and 41.8, respectively[95]. Modern ICT technologies can provide common communication platform in the region.

2.2 The likely evolution of the state of the environment without the implementation of the Programme

Biodiversity, flora, fauna

Biodiversity issues are of high importance in the region due to the valuable flora and fauna confirmed by the high number of areas under protection. According to the European framework on nature protection and the national legislation, protecting ecosystems and natural habitats is likely to continue. Increasing focus is necessary on promotion and knowledge transfer. Habitat conversion, degradation and fragmentation, furthermore the spread of invasive species, and the impact of climate change are still major concerns in the future. To continue with an increased effort on maintaining biodiversity, promoting of joint management of cross-border ecosystems and habitats is necessary.

Air and climate change

Air quality has significantly improved in the past decades; significant emission reduction has been achieved. This trend is likely to continue or stagnates in the near future; however, sources of air pollutants mainly from fossil fuel burnings for energy generation, transport and industry have impact on the environment and human health. Increased traffic volume can contribute to an increase of NOx emissions. By further decreasing GHG emissions, efforts can be made to mitigate the effects of climate change. The changes of climate parameters, increasing extremities contribute to increasing possibilities of natural hazards. Joint efforts can increase efficiency in all these issues to fulfil 2020 targets.

Soil and land use

Soil degradation due to improper land use is likely to be a risk factor of soil resources. Agriculture, industry and transport are the main factors that influences land use. The development of transport network will have trade-offs with arable lands. Decreasing and preventing soil contamination is a common objective that continues in the future. A decreasing trend of waste generation was observed in the past decade that is likely to continue with the increasing awareness of people, furthermore increasing ratio of reducing-reusing-recycling wastes can be expected, promoted by the

[95] http://databank.worldbank.org

application of green technologies. Proper waste and waste water management are still one of the major problems the region faces.

Waters (ground waters, surface waters)

Improving ecological and chemical status of surface and ground water, furthermore the promotion of sustainability in water use, are common targets that are likely to continue in the future. The rivers in the region are under the threat of pollution from municipalities and urban settlements, farming, and from industry and mining. Reducing or preventing pollution of surface and groundwater resources (point sources, accidental pollution) remains a common goal in the eligible area. Accidental spills of hazardous substances can affect the aquatic environment and water quality, thus joint management and risk assessments are necessary. Flood protection system is broadly constructed, however due to climate change and alterations on the catchment and the channels, thus flood hazard remains an important issue in the future as well. Ground water resources of the region face quality and quantity problems due to contaminations and overuse of resources. Improvement of waste water treatment is likely to continue, but water quality remains an important issue in the future as well.

Landscape and land cover

Landscape protection and management is promoted in the eligible area confirmed by the high number of protected ecosystems. This trend is likely to continue in the future. The cross-border area has common landscapes and water bodies, thus preparedness and management for environmental havaria cases and hazards remains an important issue. In case of soils under agricultural production, soil degradation mostly due to inappropriate land management needs to be tackled. There were some attempts to increase awareness of people towards landscapes, ecosystems, their role and the threatening factors; however, it is necessary to continue with increased efforts.

Material assets, cultural heritage

Several values of the cultural heritage were acknowledged and a large number of sites are under protection. However, many of the historical buildings, that represent high values in the region, face worsening conditions; they can be important sources of tourism and heritage preservation. The importance of local values and traditions came up to the front in the past years that is likely to continue in case of advocate support. The status of protected cultural heritage is maintained by protection measures that requires strengthened awareness of local people. New constructions can have conflicts with site protection interests.

Population and human health

Due to the economic, technological, social and political changes of the past decades, the region faces many negative social effects (poverty, migration, bad health state of the population and difficulties in infrastructural development) that influence also human well-being and health. Although continuous efforts are done on tackling these issues, further emphasis is necessary in the future. The improving air quality is likely to continue in the future, depending on new constructions and investments or an increasing traffic load. There was a trend of improving accessibility to the essential public

infrastructures (e.g. waste water treatment, waste management), however, further efforts are necessary.

Energy consumption, use of renewable sources, traffic and transport

Several investments were done for improving energy efficiency in the past few years. Increase in use of renewables is observed, but the potentials of the region are still not exploited. These improving trends are likely to continue in the future to fulfil 20-20% up to 2020. Traffic and transport provides insufficient accessibility of certain regions, thus higher ratio and sufficient quality of public transport has to be addressed. Decreasing carbon emissions from transport and promoting more sustainable ways of transport are depending on investments on green ways of transportation. ICT technologies, providing suitable info-communication interconnectivity and knowledge transfer, are underdeveloped at certain areas, which can be addressed in the future.

3 The environmental characteristics of the areas likely to be significantly affected

Since the Programme area has many natural values of national and international interest under protection (See current state of the environment, chapter 2), furthermore, it has cross-border surface and subsurface waters sensitive to contamination, such areas may be likely to be affected by the future projects. Since the programme objectives and the priorities and the implementation areas are not clear at this phase, the presumably considerable impacts in the environment are elaborated, that calls the attention on those factors that has to be encountered during planning and implementation phase.

3.1 Landscapes and areas of recognized international protection status

There are 10 Ramsar Sites in the Programme area. In Ukraine, Lake Synevyr is the largest natural water body in the Ukrainian Carpathians. Upper-Tisza site covers the entire active floodplain along a 215 km section of the river Tisza in north-eastern Hungary, adjacent to the BodrogzugRamsar site (floodplain area including several lakes at the confluence of two rivers). The Upper-Tisza site is part of a TransboundaryRamsar Site designated in conjunction with "Tisa River" in the Slovak Republic. Baradla-Domica Cave System is also a TransboundaryRamsar site, being a typical and the largest subterranean hydrological system of the karst plateau in the territory of Hungary and Slovakia. BorsodiMezőség in Hungary is the largest alkaline marshland complex on the right bank of the river Tisza. The floodplain of River Latorica is also among the Ramsar sites in Slovakia and the site borders Ukraine. The Senné Fish-ponds site in Slovakia is located in a formerly seasonally-inundated large flat depression. In Romania PoianaStampei Peat Bog is considered the largest oligotrophic peat bog in Romania. The Ramsar sites in the Programme area are:

Region	Name of Ramsar Site	Area of Ramsar site
Zakarpatska (UA)	Lake Synevir	29 ha
Szabolcs Szatmár-Bereg (HU)	Upper-Tisza	22311 ha
Borsod-Abaúj-Zemplén (HU)	Bodrogzug	3782 ha
Borsod-Abaúj-Zemplén (HU)	Baradla Cave System and related wetlands	2075 ha
Borsod-Abaúj-Zemplén (HU)	BorsodiMezőség	17932 ha
Košický (SK)	Tisa River	735 ha
Košický (SK)	Latorica	4405 ha

Košický (SK)	Domica	622 ha
Košický (SK)	Senné Fish-ponds	425 ha
Suceava (RO)	PoianaStampei Peat Bog	640 ha

There are two Natural World Heritage sites, and 7 Cultural Heritage Sites assigned as UNESCO world heritages. Biosphere Reserves of the region are Aggtelek and the East Carpathians. Their detailed description can be found in Chapter 2.1.1. The World Heritage sites in the Programme area are:

Region	Name of World Heritage	Natural/Cultural Heritage
Košický (SK) Borsod-Abaúj-Zemplén (HU)	Caves of Aggtelek Karst and Slovak Karst	Natural Heritage 56651 ha
Borsod-Abaúj-Zemplén (HU)	Tokaj Wine Region Historic Cultural Landscape	Cultural Heritage 13255 ha
Presovský (SK) Zakarpatska (UA)	Primeval Beech Forests of the Carpathians	Natural Heritage 33670 ha
Presovský (SK)	Levoca, SpisskyHrad and the Associated Cultural Monuments	Cultural Heritage 1351 ha
Presovský (SK)	Bardejov Town Conservation Reserve	Cultural Heritage
Presovský (SK) Košický (SK)	Wooden Churches of the Slovak part of the Carpathian Mountain Area	Cultural Heritage 2.56 ha
Maramures (RO)	Wooden Churches of Maramures	Cultural Heritage
Satu-Mare (RO)	Churches of Moldavia	Cultural Heritage
Chernivetska (UA)	Residence of Bukovinian and Dalmatian Metropolitans	Cultural Heritage 8 ha

3.2 Landscapes and areas of Community interest

Areas of community interest are Natura 2000 sites assigned in Hungarian, Slovakian and Romanian counties of the Programme area. By this ecological network the EU aims at conserving natural habitats and wild fauna and flora. The setup of this network created interlink among components like .monitoring and maintenance, research and education as well. The area hosts significant extent of areas of community interest, their high biodiversity is described in chapter 2.1.1. The NATURA 2000 sites are:

Region	Ratio of NATURA 2000 sites (%)	Area of NATURA 2000 sites (km^2)
Borsod-Abaúj-Zemplén (HU)	52.9%	3823
Szabolcs Szatmár-Bereg (HU)	20.7%	1223
Košický (SK)	58 %	3919
Presovský (SK)	48.9%	4407
Maramures (RO)	49.6%	3145
Satu-Mare (RO)	20.2%	887
Suceava (RO)	17.9%	1535
Zakarpatska (UA)	–	–
Ivano-Frankivska (UA)	–	–
Chernivetska (UA)	–	–

3.3 Landscapes and areas of National interest

There are several areas under national protection in each country due to their recognised natural, ecological and/or cultural values. There are more types/ levels of protections depending on the laws of each country. Their high biodiversity is described in chapter 2.1.1.Areas of national interest are National Parks in the Programme area, that are the follows:

Region	Ratio of Protected areas (%)	Area of Protected areas (km^2)
Borsod-Abaúj-Zemplén (HU)	12.5	906.9
Szabolcs Szatmár-Bereg (HU)	1.0	60.8

Košický (SK)	15.3	1033.3
Presovský (SK)	19.8	1787.5
Maramures (RO)	22.1	1402
Satu-Mare (RO)	0	0
Suceava (RO)	1.7	141.6
Zakarpatska (UA)	13.1	1689.9
Ivano-Frankivska (UA)	14.0	1104.1
Chernivetska (UA)	1.7	246.7

3.4 Areas designated for extraction of water intended for human consumption

Consideration must be given to the specific provisions regarding protection zones for water abstraction sites, whether surface or underground.

In Hungary the definition is given under GD no. 67/1998 on restrictions and prohibitions on protected and strictly protected aquatic communities.

Under the law, protection zones are established on site, with various degrees of pollution risks:

a) strict regime sanitary protection zone;

b) sanitary protection zone with restriction regime;

c) hydro-geological protection site.

In order to prevent water contamination or pollution risks from human activities, the protection zones require bans on certain activities and land use restrictions. It is also important with special regard to environmental permission. The implementation of a project should not affect the protection zones of drinking water - e.g. road construction cannot be implemented in the strict sanitary protection zones - , or only under special conditions, e.g. in case of the hydro geological protection zone.

Every Water River Basin Administration holds a Register of protection zones for the river basin, which includes the following information under the heading “Protection Zones for Drinking Water Abstractions”:

- The general characteristics of the protected zone;
- A map of the protection zones for drinking water abstractions;

- A chart of the abstraction flow rate development (surface and groundwater);
- A chart of the served population development;
- A table of the adjoining protection zones for each surface or ground water abstraction.

In Slovakia

Act 364/2004 on waters and on amendments to the Slovak National Council Act 372/1990 on offences as amended by later regulations and by the Act 384/2009 (Water Act).

Act 442/2002 on public drinking water supply and sewerage amending Act 276/2001 on regulation in network industries, as amended.

Development Plan for Public Drinking Water and Waste Water Collecting Systems, approved by the Government Decree 119/2006.

Definition of drinking water public supply in the Slovak Republic: minimum 50 inhabitants or 10m3 water per day.

Areas of drinking water supply are divided into:

a) 2 big area categories: 5000-50 000 inhabitants and more than50000 inhabitants

b) 3 small area categories: population:50-500; 500–2000; 2000–5000.

Protection zones of water supply resources are designed by the state water authorities with the aim to protect their yield, quality, quantity and safety.

Protection zones of water supply resources are divided into the protected zone of the:

1st degree serving for its protection in direct vicinity of water abstraction points or capture devices,

2nd degree protection zone serves for protection of water supply resource against risks coming from more distant site,

3rd degree protection zone for enhanced protection, established by the water authority (catchments areas).

If conditions in the locality of the 1st degree protection zone provide sufficient protection of water resource, further degrees of protection are not designed.

In Romania, the definition of the protection zones was provided under the Water Law and GD no 930/2005 approving Special Norms for the nature and size of sanitary and hydro-geological protection zones.

In Ukraine the Ministry of Environmental Protection is the principal body within the central executive authorities on the management, restoration and protection of water resources. Ministry of Natural Resources is responsible for implementing government policy regarding the management, restoration and protection of surface and groundwater.

The Law of Ukraine "On Drinking Water and Drinking Water Supply" (№2918-III adopted 10th of January,2002) determines the legal, economic and institutional frameworks for the drinking water system to guarantee the provision of high quality and safe for human health drinking water.

Water Code of Ukraine (adopted 6th of June, 1995) regulates the legal relations in order to ensure the conservation, and

rational use of water for the needs of the population and industry, restoration of water resources, water protection from pollution, contamination and depletion, preventing harmful influences and recovery and improvement of water bodies as well as protection of enterprises, institutions, organizations and citizens' rights on water use.

3.5 Areas of nutrient-sensitive waters, including vulnerable areas to nitrates

Due to the Urban Wastewater Treatment Directive (Council Directive 91/271/EEC on urban waste-water treatment), significant progress was achieved to protect the environment from the adverse effects of waste water from settlement areas and the agrarian sector. The compliances to the UWWD articles, highlighting the countries of the eligible area, are the followings according to the 7th Implementation Report (2012)[96]:

Implementation of waste water collecting systems (Article 3 of UWWD): Most EU Member States collect their waste waters at very high levels. In Hungary and Slovakia the compliance is 100%, Romania has a pending transitional period. The countries either maintained or improved on the previous results.

Secondary treatment (Article 4 of UWWD): In 2009/2010, a total of 82% of the waste waters in the EU received secondary treatment complying with the provisions of the Directive. Four Member States reached 100% compliance and another six Member States had levels of compliance of 97% and higher. Hungary and Slovakia achieved compliance results of 90-100%. Romania has a pending transitional period.

More stringent treatment in sensitive areas and their catchment areas (Article 5 of the UWWD): It targets at the elimination of nutrients to combat eutrophication or reduce bacteriological pollution that might affect human health. In this issue only a few countries reached the 100% compliance, in other cases there were particular delays in implementation. Hungary has a compliance rate of 48%. Slovakia and Romania has a pending transitional period.

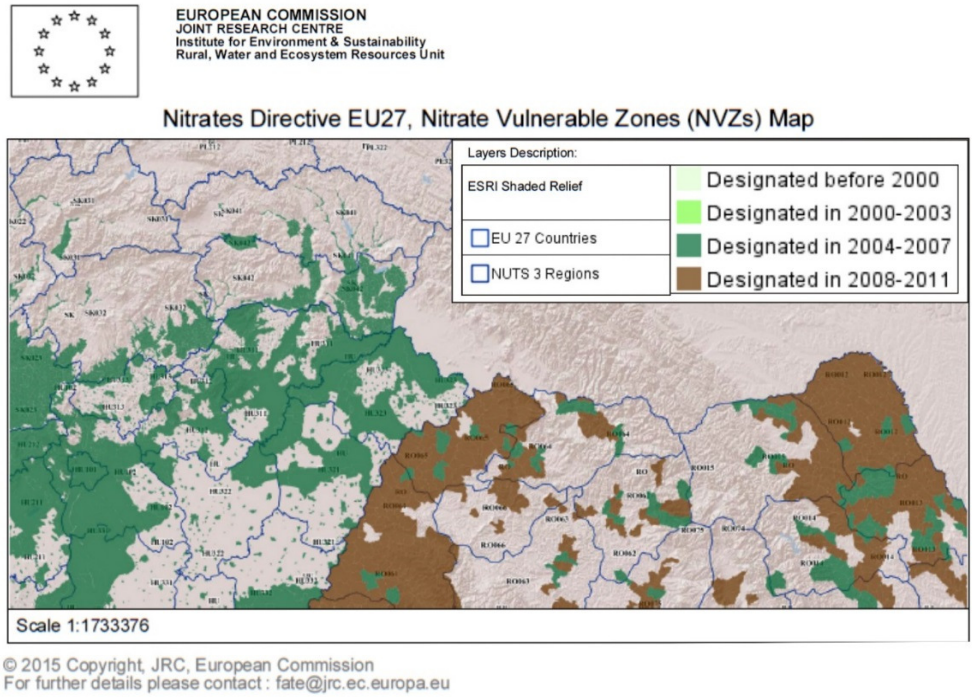
The final deadlines of transitional periods are 31 Dec 2015 for Hungary and Slovakia, and 31 Dec 2018 for Romania according to the annex table of the 7th Implementation Report.

[96] http://ec.europa.eu/environment/water/water-urbanwaste/implementation/pdf/Annex%20to%207th%20Implementation%20Report.pdf

The Nitrates Directive (Council Directive 91/676/EEC) aims the reduction of water pollution caused by nitrates and prevention measures that has to be implemented by EU members. The following steps are targeted, that are also encountered by the EU member countries of the Programme area:

- water monitoring of all water body types (with regard to nitrate concentration and trophic status);
- identification of waters that are polluted or at risk of pollution and designation of nitrate vulnerable zones, their review at every 4 years
- the establishment of good agricultural practices and action programmes to reduce water pollution

The eligible area has a high ratio of nitrate vulnerable areas. Satu Mare is characterised by the highest ratio. Significant areas are affected in the Hungarian counties and Kosice region in Slovakia. The other counties are determined by less extent of vulnerable areas. During planning and implementation of projects consideration must be given to these nitrate vulnerable areas avoiding or preserving their contamination.



Map 17.Nitrate vulnerable areas (JRC database[97])

There were attempts in the past years to increase waste water management in Ukraine, however, it is still a major problem especially in rural areas. The main legislative acts of water related legislation in Ukraine are the Water Code of Ukraine (6/6/95), the Regulation on Protection of Surface Water (1/3/91) and the Regulation on Protection of Surface Waters from Pollution by Wastewater (draft, 3/4/97)

[97] https://ec.europa.eu/jrc/

3.6 Landscape-conserving farming of High Natural Value

The High Nature Value farmland (HNVf) concept is a part of the EU environmental and rural policies to prevent European landscapes where high natural or conservation value is dependent on the intensity of farming systems. EEA definitions of the three types of HNV farmlands are the followings[98]. Type 1: Farmland with a high proportion of semi-natural vegetation; Type 2: Farmland with a mosaic of low intensity agriculture and natural and structural elements, such as field margins, hedgerows, stone walls, patches of woodland or scrub, small rivers etc.; Type 3: Farmland supporting rare species or a high proportion of European or World populations. HNV farming maintains some of the most important habitats for biodiversity in Europe, among which there are scarce or declining habitats and species in the focus of conservation measures under the EU Birds and Habitats Directives.

The concept is relevant for Hungary, Romania and Slovakia where these areas are assigned[99]. In the programme area several HNVf areas can be found, especially in the Romanian counties. According to an EU report from 2014[100], there have been several years of work in Hungary, and concrete outputs in terms of indicators and/or targeting mechanisms. In Romania, HNVf maps were produced primarily for the purpose of targeting policy instruments such as agro-environment payments, but refinements to the methods are needed which have not yet been addressed. In Slovakia, there has been limited or no progress until recently in identifying HNVf, but have consulted experts on how to take forward the HNVf challenge. This concept is not relevant in Ukraine, since HNVf areas were not assigned, only in the Member States. The estimated extent of HNVf areas in the affected countries of the Programme area:

Member State	Estimated extent of HNV farmland		Source of estimates
	high (ha)	low (ha)	
RO	5,221,251	3,320,000	The higher estimate is from JRC/EEA and the lower is from the RDP.
SK	772,454	364,454	The higher estimate is author's estimate based on semi-natural grassland, mosaics, abandoned grassland and NATURA 2000 arable land. The lower is estimate is that of consulted national experts, based on semi-natural grassland and mosaics.
HU	1,935,454	900,000	The higher estimate is from JRC/EEA and the lower is from

[98] http://ec.europa.eu/environment/agriculture/pdf/High%20Nature%20Value%20farming.pdf
[99] http://www.eea.europa.eu/data-and-maps/figures/estimated-high-nature-hnv-presence/21208-map/image_original
[100] Keenleyside, C, Beaufoy, G, Tucker, G, and Jones, G (2014) High Nature Value farming throughout EU-27 and its financial support under the CAP. Report Prepared for DG Environment, Contract No ENV B.1/ETU/2012/0035, Institute for European Environmental Policy, London

			designated HNV areas from the RDP.

In Hungary HNVF grassland sites are typically of low or medium productive capacity, where extensive management is characteristic. Half of them are designated as NATURA 2000 sites. Large-scale extensive fields are important HNV habitats for bird species. Small-scale HNV arable fields are found in areas of farmland with complex cultivation patterns, scattered grasslands and areas of natural vegetation. Tanya is a traditional Hungarian small-scale mixed farming system contributing to the characteristic landscape and its diversity of habitats. On flood plains and the Balaton Highlands traditional orchards are locally important.

In Romania extensively managed semi-natural pastures in the uplands are used by extensive dairy sheep systems. Just under half of the permanent grassland in Romania is common grazing land, around 2 million hectares of mostly semi-natural habitats. Permanent crops dominant HNVf in Romania is characterised by small-scale mosaic farmed landscapes, with permanent pastures and meadows, grass leys, patches of arable, wooded pasture and scrub, and traditional orchards. The most important HNV orchards are in the hilly areas. Arable dominant HNVf is found on more intensively farmed arable areas of southern and eastern Romania, important for migrating birds.

Slovakia has large areas of many different HNV semi-natural grassland habitats, particularly in mountain, sub-mountain and floodplain areas. Cattle and sheep production are the main farming systems, with regional difference in farming practices. HNV mosaic landscapes are made up of small arable fields, grassland, possibly orchards and (in southern Slovakia) old vineyards, plus buildings and other landscape elements. These are mostly small-scale farms or family farms. Potential HNVF areas include arable land within NATURA 2000 areas, which may support important bird species; and the 100,000 hectares of abandoned grasslands.

3.7 Areas of nutrient-sensitive waters, including vulnerable areas

Nutrient pollution, especially nitrogen and phosphorus, highly contribute to eutrophication of surface waters. Natural and chemical products in agriculture and the effluents of agro-industrial units are the major source of pollutants. Pollution from both point source and diffuse sources may occur that are influenced by natural factors e.g. climate or soil properties. The Urban WasteWaterTreatment Directive (Council Directive 91/271/EEC on urban waste-water treatment) consider also the nutrients dimension of water protection and defines sensitive areas from nutrient point of view (i.e. catchment of waters where waste water from treatment plants above 10000 p.e. has to undergo nutrient removal):

- natural freshwater lakes, other freshwater bodies, which are found to be eutrophic or which in the near future may become eutrophic if protective action is not taken;

- surface waters intended for the abstraction of drinking water which could contain more than 50 mg/l concentration of nitrate, if action is not taken;
- areas where advanced treatment is necessary to fulfil European Union Directives.

According to the nutrient pollution maps for the reference situation of DRMBP phosphor[101] and nitrogen[102] data are available. Higher phosphor load is characteristic for Latorica and some sub-catchments of Prut and Tysa in Ukraine, Hernad and Bodrog catchments in Hungary, Hornad catchment in Slovakia and Somes in Romania. Higher nitrogen load is characteristic for the higher-elevated part of the Carpathians. During planning and implementation of projects consideration must be given to these vulnerable catchments preserving or improving their status.

3.8 Water bodies designated for recreation, including areas designated as bathing waters

Good bathing water quality is of great importance to tourism and recreation in the EU. According to the Bathing Water Directive of the EU (Directive 2006/7/EC) member states has to monitor and assess the bathing water for at least two parameters of (faecal) bacteria and has to inform the public about bathing water quality.

According to the EEA database of bathing water quality in 2014[103], in eastern-Slovakia 3 bathing waters from the 14 were classified as good or sufficient, the others had excellent quality. For Romania no available data exist. For the Hungarian counties 1 bathing water from the 10 was classified as poor, the others had good or excellent water quality. For Ukraine no data is available. To sum up, bathing water quality is good or excellent in most cases in the programme area. During planning and implementation of projects consideration must be given to their preservation or improving status.

[101] http://www.icpdr.org/main/sites/default/files/DRBMPmap23_RS_P.pdf
[102] http://www.icpdr.org/main/sites/default/files/DRBMPmap22_RS_N.pdf
[103] http://ec.europa.eu/environment/water/water-bathing/index_en.html

4 The existing environmental problems which are relevant to the Programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to the Directives 79/409/EEC and 92/43/EEC

The key problems and focus points derive from the current state of the environment of the eligible Programme area.

Biodiversity, flora, fauna

Likely environmental conflicts in the area are due to adverse impacts of anthropogenic and natural origin. Biodiversity is threatened by habitat conversion, degradation and fragmentation due to industrialization, pollution, urbanization, deforestation, land abandonment. Thus, sustainable use of resources and the joint management of natural resources are essential to preserve the natural values of the area. Mass tourism can also have negative impacts, because there is a lack of a proper green infrastructure to/at tourist destinations. Furthermore, climate changes may also contribute to alterations in the landscape.

Important stress points

- land use changes (e.g. deforestation, urbanization), agricultural impacts,
- mass tourism
- climate change
- overexploitation of natural resources
- inadequate green infrastructure
- lack of joint protection of natural values

Air and climate change

The air quality of the area has significantly improved in the past decades. However further decrease in GHG emissions needs to be targeted, because it contributes to the mitigation of climate change besides improving air quality. The sources of air pollutants are mainly from fossil fuel burnings for energy generation, transport and industry at present. Development and harmonization of monitoring systems of environmental parameters are essential to minimize the effects of disasters affecting citizens and the ecosystem as well.

Important stress points

- changes of climate parameters, increasing extremities causing increasing probability of natural hazards (floods, landslides, inland excess water, drought etc.)
- air pollution of industry, transport and fossil fuel burning for energy generation
- lack of joint disaster management

Soil and land use

Waste management is still one of the major problems the region faces referring to waste collection, transport, treatment, recycling and disposal. The past practices of waste management have led to a great number of non-compliant landfills. Proper management and an increasing ratio of recycling rates, furthermore the developments of the sewage systems need to be targeted. Since the sites of waste collections can have negative impact on the environment (soil, water, air and ecosystems), the improvement of the monitoring is also an important challenge.

Important stress points

- insufficient waste water management
- insufficient solid waste management
- soil pollution
- intensive agricultural production
- soil degradation
- lack of infrastructure for solid waste and sewage collection and treatment in UA
- insufficient knowledge of people on sustainability and waste management

Waters (ground waters, surface waters)

The rivers pose environmental risks to population and nature due to pollution and floods. Floodwater inundations have several side effects e.g. floodwater mosquitos that require harmonized management. The rivers in the region are threatened of pollution from municipalities and urban settlements, farming, and from industry and mining. Accidental spills of hazardous substances can severely affect the aquatic environment and water quality. Drought and low water can influence energy production and water uptake. The main reasons for groundwater pollution are water pollution caused by intensive agriculture and livestock breeding, insufficient wastewater collection and treatment at the municipal level, inappropriate waste disposal sites, urban land use and insufficient wastewater treatment at industrial enterprises. Overuse of groundwater resources can result in quantity problems. Thus the qualitative and quantitative monitoring and management of surface and ground waters are joint necessity.

Important stress points

- pollution of surface and groundwater (organic, nutrient, Hazardous Substances)
- hydromorphological alterations (Interruption of river and habitat continuity, disconnection of adjacent floodplains/wetlands, hydrological alteration)
- climate change
- cross-border cooperation
- protection of the territory related to the zones of hygienic protection of water resources which used for mass supplying of drinking water

Landscape and land cover

In case of soils under agricultural production, soil degradation can be the reason of environmental conflicts caused by inappropriate land management. In the Carpathians mostly natural ecosystems can be found and environmental conflicts of land management, water erosion and landslides are

characteristic. The area hosts large areas of adjoining forests in the Carpathian Mountains, the management of which is a joint challenge. Education on biodiversity and sustainability is of high importance that would strengthen the preservation of values. Furthermore, the improvement of eco-tourism would help to attract people getting familiar with the ecosystems of the Carpathians and the Pannonian Basin. Since the cross-border area has common landscapes and water bodies, preparedness and management for environmental hazard cases and disasters has to be considered.

Important stress points

- land use changes
- climate change
- fragmentation effect of transportation infrastructure
- overexploitation of natural resources by industry, forestry and agriculture
- lack of information transfer and education on ecosystems and values
- the environmental *hazard cases* in the point of industry and mining

Material assets, cultural heritage

Likely conflicts arisen from the worsening conditions of historical buildings, since they represent high values in the region, and they could be important sources of tourism and heritage preservation. Knowledge transfer and improving management facilities could highly promote the tourist activity in the region. The tourism should be promoted avoiding the conflicts between tourism and nature conservation e.g. bicycle roads, tourist trails, ICT based information materials. Since several values go beyond the borders, cross-border integrated Programmes should be also targeted to enhance the valuable common feature of the area and ecosystems.

Important stress points

- degradation of values
- insufficient infrastructure and management
- lack of knowledge transfer to inhabitants, tourists
- degrading ecosystem

Population and human health

Due to the bad financial and infrastructural condition of the area the spread of energy-efficient technologies, usage of renewable energies and environmental friendly technics (e.g. selective waste collection or waste water treatment) is limited. The insufficient health and social infrastructure hinder socio-economic development and contributes to the spread of health care problems and diseases thus, future sustainable development of the region. The usage of ICT technologies has low level in the Ukrainian and Romanian regions, however it has important role in knowledge transfer in underdeveloped areas. The widespread and effective usage of internet can help to decrease inequalities of people and public societies by providing information (e.g. about labor market, education, funds, energy efficiency, developments) and possibilities to increase participation and

administrative and social issues. It can be good to use more media for effective efficient prevention and education programs about healthy life and sustainable environment.

Important stress points

- Deficient communal and ICT infrastructure
- lack of health and social infrastructure
- poverty
- lack of efficient prevention and education programs about healthy life and sustainable environment

Energy consumption, use of renewable sources, traffic and transport

Likely environmental conflicts can arise between transport and environment, since construction works can cause environmental pollution and the destruction and fragmentation of landscape elements. When implementing investments special focus on natural and historical elements, furthermore sustainability and environmentally friendly ways have to betaken into consideration. Conflicts of energy and air pollution arise from combustion of fossil fuels. The higher ratio of renewable energy resources has to be promoted in line with the potentials of the area. Energy efficiency should be targeted on local and regional levels as well. Transport in urban areas poses direct human health risk due to pollution of air and soil and noise load. The higher ratio and sufficient quality of public transport is necessary for ensuring more sustainable transport facilities for public. The usage of ICT technologies has important role in info-communication interconnectivity. ICT technologies can ensure sustainable knowledge transfer in underdeveloped areas. The development of ICT infrastructure could provide a common communication platform of the inhabitants and it provides new opportunities in social, economic and industrial sectors. The better information access could contribute to the attractiveness of the regionthrough developing tourism.

Important stress points

- insufficient ratio of renewables in energetics
- low accessibility and availability of the region due to infrastructural deficiency
- deficiencies in public transport
- pollution of transport
- high ratio of nuclear energy

5 The environmental protection objectives, established at international, Community or Member State level, which are relevant to the Programme and the way those and any environmental considerations have been taken into account during its presentation

5.1 Environmental policy framework established at international or Community level, which are relevant to the Programme

The SEA analysis has identified the key environmental policies and legislations in terms of the environment linkages with the HUSKROUA ENI CBC Programme 2014-2020. This policy framework may potentially influence the choice of environmental issues and corresponding objectives.

The list of relevant international legal and policy frameworks, by which the HUSKROUA ENI CBC Programme 2014-2020 may be influenced, is presented in the following table.

Biodiversity, flora, fauna
Habitats Directive (92/43/EC)
Birds Directive (2009/147/EC)
78/659/EEC on the quality of fresh waters needing protection or improvement in order to support fish life
COM(2006) 302 (on an EU Forest Action Plan 2007-2011);
Convention on Biological Diversity (CBD) (1993)
EU 2020 Biodiversity Strategy
Carpathian Convention - Protocol on Conservation and Sustainable Use of Biological and Landscape Diversity
Carpathian Convention - Protocol on Sustainable Forest Management
Common Fisheries Policy (CFP)
UN Convention on Biological Diversity
Ramsar Convention
IUCN Global Species Programme
2006/44/EC Fish 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)
Bern Convention
Bonn Convention
The Convention on Trade in Endangered Species of Wild Flora and Fauna (CITES, 1973)
Regulation (EU) No1143/2014 of the European Parliament and of the Council of 22October 2014 on the prevention and management of the introduction and spread of invasive alien species
Air and climate change
Emission Ceilings (2001/81/EC)

Directive 2010/75/EC on industrial emissions (IPPC, LCP)
Fuels (98/70/EC, 99/32/EC)
VOC (94/63/EC, 99/12/EC)
Non-Road Mobile Machinery (97/68/EC)
Directive 2008/50/EC on ambient air quality and cleaner air for Europe
Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air
Stockholm Convention on POPs
Gothenburg Protocol 1999
European Climate Change Programme
Decision No. 93/389/EEC for a Monitoring Mechanism of Community CO2 and other Greenhouse Gas Emissions
Proposal of the Taxation of Energy Products Directive
Emission Trading Directive and Linking directive
UNFCCC and Kyoto Protocol - Climate Energy Legislative Package adopted in 2009
Thematic Strategy on Air Pollution (COM (2005) 446)
EU Strategy on Climate Change" Winning the battle against global climate change" (COM (2005) 35)
ICPDR Strategy on Adaptation to Climate Change(2013)
Convention on Long-range Transboundary Air Pollution (CLRTAP)
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.)
COM/2009/0147 - White Paper on adapting to climate change
Vienna Convention for the Protection of the Ozone Layer
Geneva Convention on Long-range Transboundary Air Pollution
Montreal Protocol

Soil and land use

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
Mining Waste Directive (2006/21/EC)
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 2003/33Framework Directive on Waste (75/442/EEC)
Landfill of waste (99/31/EC)
Packaging and packaging waste), as amended by Directive 2004/12/EC

Hazardous Waste (91/689/EEC)
Incineration of waste (2000/76/EC)
Prepared Mining Waste Directive
Stockholm Convention on POPs
Regulation No. 259/93 (EC)
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)
UNCCD (United Nations Convention to Combat Desertification)
Common Agricultural Policy (CAP)
2078/92/EEC on agricultural production methods compatible with the requirements of the protection of the environment and the maintenance of the countryside.
Basel Convention

Waters (surface waters, ground waters)

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
The Framework Convention on the Protection and Sustainable Development of the Carpathians (Carpathian Convention)
Nitrates Directive (91/676/EEC),
Urban Waste Water Treatment Directive (91/271/EEC),
Thematic Strategy on the Sustainable Use of Natural Resources (COM (2005) 670)
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)
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)
Directive 98/83/EC on the quality of water intended for human consumption
Directive2013/39/EU amending Directives 2000/60/EC and 2008/105/EC as regards priority substances in the field of water policy
Common implementation strategy CIS 2012-2015
Directive 2006/118/EC on the protection of groundwater against pollution and deterioration
Directive 2010/75/EC on industrial emissions (IPPC)
Stockholm Convention on POPs
2007/60/EC on the assessment and management of flood risks

75/440/EEC of 16 June 1975 concerning the quality required of surface water intended for the abstraction of drinking water
76/160/EEC concerning the quality of bathing water
76/464/EEC on pollution caused by certain dangerous substances discharged into the aquatic environment
80/68/EEC on the protection of groundwater against pollution caused by certain dangerous substances
IUCN Water Programme

Landscape and land cover

European Landscape Convention
Carpathian Convention - Protocol on Conservation and Sustainable Use of Biological and Landscape Diversity
Carpathian Convention - Protocol on Sustainable Tourism
Green Infrastructure - Enhancing Europe's Natural Capital (GI) (COM(2013) 249 final

Material assets, cultural heritage

UNESCO World Cultural and Natural Heritage Convention 1972
EU Thematic Strategy on the Urban Environment (COM (2005) 718)
Creative Europe Programme (2014 to 2020) Regulation No 1295/2013 (EU)
Europe Convention for the Protection of the Architectural Heritage of Europe 1985
Europe Convention for the Protection of the Archaeological Heritage 1992

Population and health

Environmental Noise Directive (END) (2002/49/EC)
WHO Night Noise Guidelines for Europe (2009)
EU Health for Growth Programme (2014-2020) (COM (2011) 709)
EU Health Strategy "Together for Health" (2008-2013)*
WHO Parma Declaration on Environment and Health 2010
7th Environmental Action Programme
Quality of water intended for human consumption (98/83/EC)
Protection of ground water against pollution caused by certain dangerous substances (80/68/EEC)
Landfill of waste (99/31/EC)
Waste regime (75/442/EEC)
Noise (2000/14/EC)
The action plan of the EU Community Public Health Programme for 2003-2008, which was adopted by Decision No. 1786/2002 of the European Parliament and Council
WHO (1998) The "Health for All in 21st Century" Strategy;
European Sustainable Cities
European Regional/Spatial Planning Charter ('Torremolinos Charter'), adopted in 1983 by the European Conference of Ministers responsible for Regional Planning (CEMAT)
The European Commission Green Book for the future policy on noise, (1996)
Aalborg Charter
Environmental Liability Directive 2004/35/EC
CLP-Regulation (EC) No 1272/2008
Cartagena Convention
2012/18/EU Seveso Directive

Helsinki Convention, Trans-boundary watercourses and international lakes
Treaty of Lisbon
Bonn Convention
Energy consumption, use of renewable sources, traffic and transport
Energy Efficiency Directive (2012/27/EU)
Renewable Energy Directive (RED) (2009/28/EC)
Energy Efficiency Action Plan (2011)
EU Climate and Energy Package 2020
7th Environmental Action Programme
"Guiding Principles on Sustainable Hydropower, 2013" (http://www.icpdr.org/main/activities-projects/hydropower)
Climate and Energy Package 2020
White paper 2011 - Roadmap to a Single European Transport Area
Carpathian Convention - Protocol on Sustainable Tourism
Carpathian Convention - Protocol on Sustainable Transport
"Joint Statement on Inland Navigation and Environment, 2007" (http://www.icpdr.org/main/activities-projects/joint-statement-navigation-environment)
COM/2005/670 Thematic Strategy on the sustainable use of natural resources
-COM/2013/0249 Green Infrastructure

5.2 Environmental protection objectives established on the basis of the environmental policy framework and derived guiding questions

Based on the identified environmental policy framework, the relevant environmental objectives have been set up for each environmental issue in the frame of the Scoping of the Assessment and have been presented in the Scoping Report. The preliminary set environmental objectives have been revised and finalized on the basis of the priorities and foreseen activities of the Programme. The guiding questions for each environmental issue are derived from the environmental protection objectives – which are based on the EU level policies.

The environmental objectives have been set up on the basis of the following principles:

- SEA objectives have been formulated taking into consideration the requirement of environmental protection objectives identified in environmental policy framework.
- An objective is used to ensure that the right level of consideration is achieved.
- An objective is a statement of what is intended, specifying a desired direction of change.
- SEA objectives should follow from the environmental problems
- 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 are devised to test the environmental effects of the Programme or to compare the effects of alternatives.
- Objectives can be expressed so that they are measurable.

- The achievement of the objectives is to be measured by using a set of environmental indicators.

The HUSKROUA ENI CBC Programme 2014-2020 has been assessed by the environmental objectives and the derived guiding questions.

The table below represents the relevant and finalized environmental objectives derived from the presented framework. The table presents also the guiding questions for each environmental issue which represent the environmental consideration to be taken into account during the environmental assessment of the Programme.

Biodiversity, flora, fauna
Possible SEA objectives
Protection and promotion of natural habitats (e.g. within the NATURA 2000 network) and protected species and the sustainable use of biodiversity components 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. Promotion of common management off cross-border ecosystems and habitats
Guiding questions
Will the Programme have an effect on promotion and protection of natural habitats (e.g. within the NATURA 2000 network) and protected species? Will the Programme affect the decrease of habitat and species fragmentation? Will the Programme promote the common management off cross-border ecosystems and habitats?
Air and climate change
Possible SEA objectives
Reduction of air pollution (e.g. to prevent acidification, eutrophication and ground-level ozone pollution) and GHG emissions (min. 18 % below 1990 in the period 2014-2020). Improving common risk assessment and management system for natural and industrial risk sites connected to climate change. Promotion of policies and measures to adapt to climate change. (e.g. sustainable water resource management, green infrastructures, flooding, use of drought tolerant plants)
Guiding questions
Will the Programme have an effect on the reduction of the air pollution and GHG emissions? Will the Programme effect the improvement of common risk assessment and management system for natural and industrial risk sites connected to climate change? Will the Programme supports actions contribute to the implementation of policies and measures to adapt to climate change?
Soil and land use
Possible SEA objectives
Prevention and reduction of soil contamination, maintenance of soil functions on the highest possible level (according to Thematic Strategy for Soil Protection (EC 2006a,b) Promoting sustainable land-use (e.g. supporting of High Nature Value (HNV) farming, revitalization of brownfields, recultivation of old landfills) Reduce waste generation, increase waste recovery and recycling.
Guiding questions

Will the Programme promote sustainable land use?

Will the Programme help to maintain soil functions on highest possible levels?

Will the Programme reduce waste generation, increase waste recovery and recycling?

Waters (surface waters, ground waters)

Possible SEA objectives

Promoting sustainable use of water resources including the identification and protection of potential sources of freshwater supply, that integrates technological, socio-economic, environmental and human health considerations; appropriate controls over the abstraction of fresh surface water and groundwater; water reuse and recycling (e.g. industrial, agricultural purposes)

Prevention from and reduction of flood risks (Common approach in assessment and mapping of flood-risk)

Improvement of the ecological and chemical status of surface waters and groundwater by reducing pollutions and improving waste water treatment

Guiding questions

Will the Programme have effect on the increasing of ecological and chemical status of surface waters and groundwater?

Will the Programme help flood risk mitigation?

Will the Programme help the sustainable water resource management regarding water quantity, quality, groundwater vulnerability and surface – water sensitivity?

Landscape and land cover

Possible SEA objectives

Cooperate towards the protection, management and planning for quality and diversity of European landscapes

Ensure protection of natural and cultural landscape (e.g. by revitalization of brownfields), with focus on the most important factors of landscapes during planning.

Increasing awareness of the value of landscapes, their role and changes to them promoting training and education in landscape policy, protection, management and planning.

Guiding questions

Will the Programme protect or increase the quality and diversity of European landscapes?

Will the Programme increase awareness of the value and role of landscapes?

Will waste/landfill recovery, land recycling be supported?

Material assets, cultural heritage

Possible SEA objectives

Protection and preservation as well as sustainable management and planning of European cultural and natural landscape

Promoting of sustainable use of material resources

Preserving historic buildings, archaeological sites and other culturally important features

Guiding questions

Will the Programme promote the sustainable management and planning of European cultural and natural landscape?

Will the Programme promote the sustainable use of material resources?

Will the Programme aim at the protection of national heritage be supported?

Population and human health
Possible SEA objectives
Creating conditions to improve health and reduce health inequalities 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) and increase drinking water quality.
Guiding questions
Will human health be improved due to actions supported? Will the Programme affect the prevention and reduction of diseases and negative health impacts caused by environment-related threats? Will the Programme reduce existing disparities in accessibility to the essential public infrastructures and services and increase drinking water quality?
Energy consumption, use of renewable, traffic and transport
Possible SEA objectives
Improvement of energy efficiency (by 20% by 2020) Increase of use of renewables (20 % of renewable energy by 2020) Reduction of carbon emissions deriving from transport (by 60 % by 2050) by promotion of environmentally sustainable transport
Guiding questions
Will the Programme have an effect on improvement of energy efficiency (by 20% by 2020)? Will the Programme have an effect Increase of use of renewables (20 % of renewable energy by 2020)? Will the Programme have an effect on reduction of carbon emissions deriving from transport (by 60 % by 2050)?

6 The likely significance of effects on the environment, including issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archeological heritage, landscape and interrelationship between the above factors

6.1 The likely significance of effects on the environment of the Programme area

The effects of the Joint OperationalProgrammefor the HUSKROUA ENI CBC Programme2014-2020 have been determined by the specificity of the programme and the types of actions planned as likely significant, having cumulative nature according to the criteria of the European Directive 2001/42/EC on the assessment of effects of certain plans and programmes on the environment –ANNEX II.

Characteristics of the HUSKROUA ENI CBC Programme 2014-2020

The thematic objectives and priorities outline the challenges the region faces, providing a considerable framework for projects and other activities related to cultural heritage, environmental protection, climate change mitigation and adaptation, improving accessibility, safety and security. This will lead to a more intense cooperation between regions of Ukraine and regions of Member States sharing common border.

The programme is consistent with other plans and programmes including those in a hierarchy. The detailed description of the relationship with other relevant plans and programmes can be found in Chapter 1.4.

Environmental sustainability was taken into account as a horizontal principle during the programme preparation. The principle of sustainability was integrated into several thematic objectives (e.g. sustainable waste and wastewater management, use of natural resources, sustainable and climate-proof transport), furthermore, many objectives are also facilitated by awareness raising and information transfer. These actions can contribute to the requirements of environmental protection, climate change mitigation and resource efficiency.

Wide range of environmental problems and challenges are targeted by the programme. The current status and its likely evolution are evaluated in detail in Chapter 4. according to biodiversity, flora and fauna, water, soil and land use, air and climate, landscape and landcover, material assets and cultural heritage, population and human health, energy consumption, use of renewable sources, traffic and transport.

The proposed programme facilitates the implementation of Community legislation on the environment. The objectives contribute to e.g. the fulfilment of EU 2020 targets (concerning the

decrease of GHG emission or resource efficiency) or EU biodiversity strategy 2020 and Natura 2000 (concerning the protection of landscape, biodiversity and ecosystems).

Characteristics of the effects and of the area likely to be affected

The planned objectives probably affect water, soil, flora and fauna, air and climate, population (in quality of life, health status) or cultural heritage. However, these impacts are dominantly positive, thus they can contribute to the positive changes in the current state of environment. The positive effects of the actions and interventions are expected to be realised mainly in medium and long-term time-scale (e.g. GHG emission decrease, biodiversity maintenance), however, short-term results are also probable (e.g. decreased traffic emissions result in better air quality). Negative effects can occur only in case of infrastructural developments. Some of these effects are temporary, occurring only during the construction phase, but long term effects (e.g. air pollution) may also occur due to the increased traffic volume on the newly built, modernised and upgraded roads. However, the planned improvements (e.g. construction or modernisation of transboundary roads and bicycle paths; development of touristic destinations or flood prevention infrastructure) can contribute to the improvement of life quality or reduction of GHG emissions, thus they can have tangible positive effects in longer term. Moreover, these negative impacts can be reduced or avoid by the use of appropriate conditions in actions.

The synergistic and cumulative positive impacts of the Programme activities contribute to the improvement of the environmental condition of the region and result in other intended and not intended positive economic and social effects, which also facilitate the improvement of life quality. Such synergistic and cumulative effect could be achieved by e.g. the water management issues (cooperation on flood prevention, monitoring), which could have significant and direct positive impacts on the broader environment.

Risks to human health or the environment (e.g. due to accidents) may exist during the construction of infrastructure developments; however these risks can be reduced to minimum or can be avoided by appropriate planning and management of the implementation. Indirect risks can occur due to the increased traffic volume on the newly built, modernised and upgraded roads.

The magnitude and spatial extent of the effects vary according to the objectives, priorities and actions affecting different size of geographical area and the population. E.g. GHG emission decrease, awareness raising actions have positive effect for the whole eligible area, while flood interventions and infrastructure development is of regional interest. Certain actions (e.g. restoration of cultural heritage, pilot projects for waste management) have a local interest; however, their improvement contributes to regional objectives as well.

Interventions e.g. linear infrastructural and flood prevention infrastructure development, may affect protected areas which have national, community or international protection status. These actions require increased attention during planning and project implementation.

Territorially, the Programme may affect valuable and also vulnerable areas in the cross-border region. Special emphasis is given for cultural heritage sites involved into development of the eligible area as a joint tourism destination based on its cultural, historical, religious values through the preservation of historical buildings. Valuable natural areas are also targeted in the Programme, related to the priority, focusing on development of natural parks and forestry management systems, protection of landscapes and biodiversity. Large areas are used by intensive agriculture, thus the increase of energy efficiency of agricultural production may have effect on wide areas. These actions will likely have mostly positive impacts on environment.

Likely evolution of the state of the environment with the implementation of the programme

Biodiversity, flora, fauna

The interventions of TO6 Priority 1 (Sustainable use of the environment in the cross border area - preservation of natural resources, actions to reduce GHG emission and pollution of rivers) highly contribute to the preservation of biodiversity and the protection of natural values, landscape and natural resources. The planned interventions in realising sustainable use of natural resources in Priority 1 have also positive impact on the environment and increase resources' efficiency. Indirect impacts in use of renewable energy resources under TO6 Priority 1 also positively influence the natural resources by decreased load on environment. The planning of hydropower plants has to consider ecological impacts, also avoiding barrier effect. Interventions of TO8 Priority 1 (Support to joint activities for the prevention of natural and man-made disasters as well as joint action during emergency situations) also affect natural resources in the point of man-made and natural risks and hazard and their impact. The programme promotes the prevention and handling of these issues, thus, contributing to the joint preservation of natural values in case of a disaster. Infrastructural developments of TO7 Priority 1 (Development of transport infrastructure to improve the mobility of persons and goods) and TO3 Priority 1 (Promoting local culture and history along with tourism functions) can have negative impact on the environment, thus, environmental impact assessment of future projects to be carried out have to have a special care of the areas under national or international protection to preserve biodiversity.

Air and climate change

The interventions in TO7 Priority 1 (Development of transport infrastructure to improve the mobility of persons and goods) have mainly positive effects on air and climate change. An improved mobility can contribute to a decrease in energy consumption and pollutant emission. Due to the planned environment-friendly transport systems, the reduction of fossil energy consumption is likely. Special attention has to be paid to emission loads during planning and realisation of infrastructural investments. However an increased traffic may result in increased pollutant emission.

The harmonising activities in the field of flood prevention, development of flood prevention infrastructure, the setting up of joint early warning systems for disaster in TO8Priority 1 (Support to

joint activities for the prevention of natural and man-made disasters as well as joint action during emergency situations) promote the adaptation to and decrease the vulnerability from the impacts of climate change. Within this priority, the prevention and mitigation to the impacts of climate change is supported by measures towards increasing awareness and knowledge, furthermore the gaining skills to develop local and regional strategies for handling this issue.

The TO6 Priority 1 (Sustainable use of the environment in the cross border area - preservation of natural resources, actions to reduce GHG emission and pollution of rivers)aims at increasing energy efficiency of buildings, industrial and agricultural production in the border region and increasing competences in the use of renewable energy sources, thus, it results in positive effect on air and climate change on the long run by GHG emission reduction.

Soil and land use

The interventions of TO 6 Priority 1 (Sustainable use of the environment in the cross border area - preservation of natural resources, actions to reduce GHG emission and pollution of rivers)support the improvement of soil quality related to wastewater and solid waste caused environmental damages with cross border effect considering the risk of contamination. The development of landfills that are suitable for recycling and fulfil environmental requirements contribute to the mitigation of soil contamination.The risk management is also included in TO8Priority 1 (Support to joint activities for the prevention of natural and man-made disasters as well as joint action during emergency situations) supporting joint activities for the prevention and handling of natural and man-made disasters. All measures that have positive effect on natural water bodies, improve soil quality by maintaining its functions. TO3 Priority 1 promotes local culture and history along with tourism functions, also influences soil, especially its fertility, since traditional methods facilitate the sustainable use of land. However, the increasing rate of tourism may result in higher environmental loads.

Infrastructural investments in TO7 Priority 1 (Development of transport infrastructure to improve the mobility of persons and goods) highly affect land use and landscape, thus, planning and management require the consideration of natural resources and the environmental effects (e.g. fragmentation, waste disposal etc.). Interventions of TO6 Priority 1 (Sustainable use of the environment in the cross border area - preservation of natural resources, actions to reduce GHG emission and pollution of rivers) include thermal water and biomass production measures, the inappropriate planning and management of which can result soil quality degradation.

Waters (ground waters, surface waters)

The interventions of TO8 Priority 1 (Support to joint activities for the prevention of natural and man-made disasters as well as joint action during emergency situations) aim at actions for harmonising activities in the field of flood prevention, development of flood prevention infrastructure, furthermore monitoring and risk prevention, that clearly improve water quality and ecological status of waters in the long run. The joint management and awareness raising can increase efficiency. In

this priority the development of inland water prevention infrastructure supports water drainage avoiding agricultural and public damages of water inundations. However, channels may have negative consequences as well during drought periods; thus, their multipurpose application may require concern.

The actions of TO6 Priority 1 (Sustainable use of the environment in the cross border area - preservation of natural resources, actions to reduce GHG emission and pollution of rivers) also contributes to better water quality, as it supports the solution of wastewater and solid waste caused environmental damages with cross border effect. The developments of landfills that are suitable for recycling and fulfil environmental requirements contribute to the mitigation of soil and groundwater contamination.The TO6 Priority 1 also contributes to the better conditions of natural waters, since it supports the protection of biodiversity and water resources; furthermore, it is supplemented by joint education programmes for awareness raising. The objective of TO6 Priority 1 involves thermal water resources where special consideration will be required during planning of projects to avoid overexploitation and the contamination of natural reservoirs and habitats. Strategy harmonization involves hydropower stations that can have runoff control effect.

The interventions of TO3 Priority 1 (Promoting local culture and history along with tourism functions) can result in growing intensity of tourism that can increase the environmental loads on waters.

Landscape and land cover

The interventions of TO6 Priority 1 (Sustainable use of the environment in the cross border area - preservation of natural resources, actions to reduce GHG emission and pollution of rivers) highly contribute to the preservation of landscape and natural resources. The joint programmes and cooperation projects targeting the sustainable use of natural resources have positive impact on the environment and increases efficiency. The increased use of renewable energy resources is also promoted by TO6 Priority 1 results in decreased load on environment. The TO8 Priority 1 (Support to joint activities for the prevention of natural and man-made disasters as well as joint action during emergency situations) highlights the importance of risks and hazards and the necessity of joint management of cross-border landscapes and catchments. Flood management and risk assessments are quite important issues, and the harmonising activities in the field of flood prevention, development of flood prevention infrastructure are highly contributing to environmental safety.

The TO3 Priority 1 (Promoting local culture and history along with tourism functions) promotes traditional use of landscape through producing local organic agricultural products. Cultural heritage is in focus of this priority that is strongly connected to landscape issues. Its maintenance is an important task and contributes to sustainability on the long run, supplemented by awareness-raising. The TO6 Priority 1 (Sustainable use of the environment in the cross border area - preservation of natural resources, actions to reduce GHG emission and pollution of rivers) promotes more effective waste water and solid waste management that will improve the quality of environment and the landscape as well.

Infrastructural developments of TO7 Priority 1 Development of transport infrastructure to improve the mobility of persons and goods) may cause higher environmental load. These interventions have to be planned to avoid disturbance or fragmentation of protected areas or important landscape to preserve biodiversity.

Material assets, cultural heritage

The objective of TO3 promotes local culture and preservation of historical heritage by several interventions. The objective considers the region as a joint tourism destination based on its cultural, historical, religious values to be revalorized trough preservation of historical buildings. It strongly contributes to the sustainability of the region on the long run. The construction works can have higher environmental loads temporary. The cross-border added value of preservation, thematic routes and information sharing will increase co-operation of cross-border organisations. The TO7 Priority 2 (Development of ICT infrastructure and information sharing) also contributes to better information access of local people and tourists as well.

The TO7 Priority 1 (Development of transport infrastructure to improve the mobility of persons and goods) enhances mobility and availability related to material assets and cultural heritage due to the development of transport infrastructure.

Population and human health

The TO8 Priority 2 (Support to the development of health) directly affects human health via improvement of health care and prevention infrastructure and equipment related to cross border service provision, joint capacity development. Social care and patient care will be strongly improved by this objective.

More objectives of the programme contribute to improving environmental quality affecting human health positively (e.g. TO6Priority 1 better waste and waste water management, higher use of renewables Priority, energy efficiency). Risk prevention measures (TO8 Priority 1 Support to joint activities for the prevention of natural and man-made disasters as well as joint action during emergency situations) indirectly have positive effect on well-being due to higher environmental safety. The improving tourism and availability (TO7 Priority 1, Development of transport infrastructure to improve the mobility of persons and goods) can also contribute to the well-being of population. Infrastructural investments and building constructions may cause increasing noise load temporary. Increased traffic can also have negative impacts on human health.

Energy consumption, use of renewable sources, traffic and transport

The environment-friendly transport system (targeted in TO7 Priority 1 Development of transport infrastructure to improve the mobility of persons and goods), energy efficiency, energy savings and recycling, higher use of renewables (aimed at TO6 Priority 1 (Sustainable use of the environment in the cross border area - preservation of natural resources, actions to reduce GHG emission and

pollution of rivers)) contributes to the decrease of fossil fuel use, thus, the reduction of GHG emissions on the long run.

Traffic and transport is highly affected by the TO7 Priority 1 (Development of transport infrastructure to improve the mobility of persons and goods), aiming improvement of mobility and availability in the region. The infrastructural investments can result in higher environmental load. The green infrastructural investments have less effect on environment; furthermore they also promote tourism. Awareness-raising activity is planned regarding the importance of environment-friendly transport system (low emission and low noise forms of cross-border transport), that supports the sustainability of the region..

Impact assessment matrix

The environmental impact of the Programme has been assessed in case of each identified environmental issue and related to the selected thematic objectives and priorities as presented above. The findings have been presented in the following impact matrix also to represent the indications showing the direction and strength of the relationships between the selected thematic objectives and priorities and the environmental objectives.

In the impact matrix the environmental objectives determined in the 1st step of the impact assessment process mean the lines of the table. The columns are created on the basis of the thematic objectives of the JOP (for easier interpretation of the matrix the thematic objectives and priorities have been presented under the matrix). Each matrix field shows if a certain priority impacts on any of the environmental issues and objectives and the intensity and direction of their relationship.

		Thematic objectives and priorities					
		TO3 P1	TO6 P1	TO7 P1	TO7 P2	TO8 P1	TO8 P2
Biodiversity, flora, fauna	Protection and promotion of natural habitats (e.g. within the NATURA 2000 network) and protected species and the sustainable use of biodiversity components	0	L++	L-	K+	K+	0
	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	L+	L-	0	0	0
	Promotion of common management off cross-border ecosystems and habitats	0	L++	L-	K+	K+	0
Air and climat	Reduction of air pollution (e.g. to prevent acidification, ground-level ozone pollution) and GHG emissions (min. 18 % below 1990 in the period 2014-2020).	0	L++	L+/-	K+	0	0

	Improving common risk assessment and management system for natural and industrial risk sites connected to climate change.	0	L++	0	0	L+	0
	Promotion of policies and measures to adapt to climate change. (e.g. sustainable water resource management, green infrastructures, flooding, use of drought tolerant plants)	0	L++	K+/-	K+	L+	0
Soil and land use	Prevention and reduction of soil contamination, maintenance of soil functions on the highest possible level (according to Thematic Strategy for Soil Protection (EC 2006a,b)	K+/-	L+	K-	K+	L+	0
	Promoting sustainable land-use (e.g. supporting of High Nature Value (HNV) farming, revitalization of brownfields, recultivation of old landfills)	0	L+	0	K+	0	0
	Reduce waste generation, increase waste recovery and recycling.	0	L++	0	K+	0	0
Waters (surface waters, ground waters)	Promoting sustainable use of water resources including the identification and protection of potential sources of freshwater supply, that integrates technological, socio-economic, environmental and human health considerations; appropriate controls over the abstraction of fresh surface water and groundwater; water reuse and recycling (e.g. industrial, agricultural purposes)	0	L++	0	K+	0	0
	Prevention from and reduction of flood risks (Common approach in assessment and mapping of flood-risk)	0	K+	0	0	L++	0
	Improvement of the ecological and chemical status of surface waters and groundwater by reducing pollutions and improving waste water treatment	0	L++	0	0	L++	0

Landscape and land cover	Cooperate towards the protection, management and planning for quality and diversity of European landscapes	L+	L+	0	0	K+	0
	Ensure protection of natural and cultural landscape (e.g. by revitalization of brownfields), with focus on the most important factors of landscapes during planning.	L+	L+	0	0	K+	0
	Increasing awareness of the value of landscapes, their role and changes to them promoting training and education in landscape policy, protection, management and planning.	L+	L++	0	L+	K+	0
Material assets, cultural heritage	Protection and preservation as well as sustainable management and planning of European cultural and natural landscape	L++	K+	L+/-	0	L+	0
	Promoting of sustainable use of material resources	L+	L+	K+/-	K+	0	0
	Preserving historic buildings, archaeological sites and other culturally important features	L++	0	0	0	K+	0
Population and human health	Creating conditions to improve health and reduce health inequalities	0	K+	0	0	0	L++
	Prevention and reduction of diseases and negative health impacts caused by environment-related threats.	0	L+	K+/-	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) and increase drinking water quality.	0	L++	0	0	0	0
Energy cons	Improvement of energy efficiency (by 20% by 2020)	0	L++	K	K+	0	0

	Increase of use of renewables (20 % of renewable energy by 2020)	0	L++	0	0	0	0
	Reduction of carbon emissions deriving from transport (by 60 % by 2050) by promotion of environmentally sustainable transport	0	L++	L+/-	0	0	0

Legend for the assessment:

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

0 – 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

TOs and priorities

TO3 Promotion of local culture and preservation of historical heritage **Priority 1:** Promoting local culture and history along with tourism functions

TO 6 Environmental protection, climate change mitigation and adaptation **Priority 1:**Sustainable use of the environment in the cross border area - preservation of natural resources, actions to reduce GHG emission and pollution of rivers

TO 7 Improvement of accessibility to the regions, development of sustainable and climate-proof transport and communication networks and systems **Priority 1:** Development of transport infrastructure to improve the mobility of persons and goods

TO 7 Improvement of accessibility to the regions, development of sustainable and climate-proof transport and communication networks and systems **Priority 2:** Development of ICT infrastructure and information sharing

TO8 Common challenges in the field of safety and security **Priority 1:** Support to joint activities for the prevention of natural and man-made disasters as well as joint action during emergency situations

TO8 Common challenges in the field of safety and security **Priority 2:** Support to the development of health

The comparison between the thematic objectives and environmental priorities is the vital task of the SEA. This task can be efficiently performed by the analysis of the impact matrix. Referring to the indication keys of the matrix, the relationships presented are marked by L, while those not presented in the

text (depending whether they do or do not exist in reality, or it would be desirable to establish them) are marked by 0 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.

Increased attention has been pay to specific activities involved in investments, construction projects, which - due to their nature- in almost all cases damage the environment, although their expected positive results considerably outweigh the one-off negative impacts. When analyzing the environmental impacts of specific measures chapter 7. outline the alternatives that can be applied to strengthen positive investment impacts and to mitigate potential negative environmental impacts.

6.2 Transboundary effects - The likely significance of effects on the environment of the area of third countries

According to Art.7 of the SEA Directive the likely significant effects of the Joint Operational Programme must be taken into consideration in relation to those third countries which territories will be affected by the implementation of the HUSKROUA ENI CBC Programme 2014-2020.

The planned thematic objectives and priorities in relation to the foreseeable negative effects on third countries, as well as the expected cross-border impacts of the implementation of activities under the investment priorities have been investigated. Regarding the territory of Hungary, Romania and Ukraine the neighboring territories of the eligible regions are also located in the same country. Regarding Slovakia the neighboring territories of the eligible Slovakian regions are part of Poland. Therefore in relation to the territory of the HUSKROUA ENI CBC Programme 2014-2020 the effects on third countries haveto be examined related to Poland.

The transboundary effects of the Joint Operational Programme will be analyzed according to the criteria of the European Directive 2001/42/EC on the assessment of effects of certain plans and Programmes on the environment and Annex III of the Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context.

Criteria for determining of the likely significant environmental, including health, effects by the specificity of the Programme and the type of actions planned as likely significant, and have cumulative nature (referred to in the Protocol on SEA to the Convention on Environmental Impact Assessment in a Transboundary Context) 1	Analysis and assessment of the transboundary impacts of the Programme on Poland in view of the particular criteria
1. The relevance of the plan or Programme to the integration of environmental, including health, considerations in particular with a view to promoting sustainable development.	Environmental sustainability was taken into account as a horizontal principle during the Programme preparation. The environmental objectives for the Programme have been formulated on the basis of national and European legislative and policy framework. The actions of the Programmecan contribute to the requirements of environmental protection, climate change mitigation and resource efficiency. Most of these issues will likely have positive impacts on environment. Thus, significant adverse transboundary environmental impacts in third countries would not be evolved.
2. The degree to which the plan or Programme sets a framework for projects and other activities, either with regard to location, nature, size and operating conditions or by allocating resources.	It is expected that all projects implemented under TO6 or TO7 will require environmental permit. The potential transboundary impact of the proposed activities might be reduced or eliminated by the suggested measures. The Programme provides a considerable framework for projects and other activities, without adverse transboundary impact in third countries.
3. The degree to which the plan or Programme influences other plans	The Environmental Report takes into account the requirements of the national and European legislative, strategic, planning and

and Programmes including those in a hierarchy.	programming documents. The Programme is consistent with other plans and Programmes including those in a hierarchy, as it has been presented in Chapter 1.4. The proposed Programme facilitates the implementation of Community legislation on the environment (e.g. EU2020). The contribution to the fulfilment of Community environmental targets likely has indirect positive impacts in the third county.
4. Environmental, including health, problems relevant to the plan or Programme.	The key environmental problems of the area affected by the Programme and key focus points regarding the targeted territory have been identified for each environmental issue and had been presented in Chapter 4. Wide range of environmental problems and challenges are targeted by the Programme. The issues and actions related to climate change and indirectly energy efficiency have positive transboundary effects via improving air quality and decreasing GHG emissions.
5. The nature of the environmental, including health, effects such as probability, duration, frequency, reversibility, magnitude and extent (such as geographical 6. The risks to the environment, including health.	The environmental impacts of the planned objectives are dominantly positive, negative effects can occur only in case of infrastructural developments. However, the flood protection interventions effect only the Tisa catchment which doesn't affect the territory of Poland and infrastructure developments are planned mainly in the internal areas of the eligible area, thus significant adverse transboundary environmental impacts and impacts in third countries would not be evolved.No significant risks were forecasted concerning the environment and human health as a result of the implementation of the Programme.
7. The transboundary nature of effects.	Several environmental issues are of transboundary nature, thus they can be addressed effectively only by cross-border co-operations. Most of these issues however will likely have positive impacts on environment (e.g. flood management or disaster risk management). Significant adverse transboundary environmental impacts and impacts in third countries would not be evolved. The potential adverse transboundary impact of the proposed activities might be reduced or avoid by appropriate planning and measures.
8. The degree to which the plan or Programme will affect valuable or vulnerable areas including landscapes with a recognized national or international protection status.	There are transboundary protected areas in the Carpathians. However the program activities aim to develop natural parks and forestry management systems and to protect landscape, biodiversity and eco-systems. The supported measures might positively contribute to the protection of natural heritage, thus indirect positive impacts in the third county are expected.

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, and therefore no interventions are needed with regard to third countries:

- The objectives that will need transnational cooperation will likely have positive impacts on environmental issues.
- The Programme does not have significant effect on Poland due to the situation of employment and labour force of the cross-border region.
- 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 or local impact (typically transport projects) the possible adverse transboundary impacts are neutral or could be minimized with effective consideration of environmental and possibly other sustainability aspects.
- Projects planned under the HUSKROUA ENI CBC Programme 2014-2020 do not affect Poland as they comply with the provisions of the EU strategy on climate change adaptation, which aims to develop policies and regional beneficial measures.
- 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.

7 The measures envisaged to prevent, reduce and fully as possible offset any significant adverse effects on the environment of implementing the plan or Programme

The HUSKROUA ENI CBC Programme 2014-2020 supports EU2020 targets by its objectives on environmental protection, climate change mitigation and adaptation, the development of sustainable and climate proof transport and disaster management. Among its priorities, sustainable waste and waste water management, sustainable use of natural resources, energy efficiency and prevention of disasters are of high importance. Sustainability is reinforced by several interventions in the fields of e.g. landscape protection, climate change adaptation, environmental monitoring, environment-friendly transport systems and awareness raising actions. By all of these objectives and priorities, an integrated sustainable development of the area is aimed by joint co-operation. The overall assessment of the HUSKROUA ENI CBC Programme 2014-2020 is positive and an improving environmental status is possible.

Concerning the environmental effect of the projects under the HUSKROUA ENI CBC Programme 2014-2020, some general approaches on environmental sustainability have to be taken into consideration during planning and implementation:

- environmental risk minimisation
- attempt on the possible least environmental load (pollutant emission, noise generation)
- the application of environmentally friendly methods
- sustainable use of resources
- integration of energy efficiency
- conservation of biodiversity and preservation of areas and species under protection
- involvement of awareness raising to enhance efficiency
- joint effort that increases efficiency
- harmonisation of actions to national and international legislation
- long-term sustainability
- co-operation with authorities in special issues

The following detailed recommendations, incorporating also the suggestions during the consultation process of the Scoping Report preparation, refer mainly to mitigation and prevention of the potential environmental impacts occurring with the implementation of the Programme:

- Such projects should be preferred that have no significant adverse impact on the landscape or the environment or that even may result in an improving environmental quality or human health.
- Any project not directly connected with or necessary to the management of the NATURA 2000 site but likely to have a significant effect thereon, either individually or in combination

with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives.

- Special attention must be paid to complying with legislation related to environment and nature protection as well as preservation of legally not protected environmental elements, species and biomes.
- Protection of natural resources by newly constructed facilities, with the application of BAT (Best Available Technologies) tools (e.g. mandatory usage of BREF documents) and the application of renewable energy sources are to be preferred.
- In case of constructions/renovations the less impact on environment and human health has to be addressed.
- During strategic planning, environmental, socio- and economic impacts, furthermore cost-effectiveness has to be realistically considered.
- In planning strategies or projects, the overexploitation of any natural resources has to be avoided, furthermore proper waste water disposal and the environmental impacts also require concern.
- Planning and implementation of investments or developments has to take special care on avoiding fragmentation of habitats or the damages of cultural heritage and any additional impact through air and noise pollution, furthermore waste generation and waste management issues, as well as potential adverse effects on hydrology/hydro-morphology and water pollution has to be also considered.
- Joint training Programmes and workshops should consider the reduction of health impacts of disasters.
- During prevention measures health impact assessment of risks has to be considered and even integrated into local plans and strategies.
- Sharing information in the activities has to be a priority to increase efficiency of project development.
- Beside environmental sustainability, other sustainability aspects needto be consideredin Programme implementation to support maintenance and positive impacts on the long run.
- The proposed actions under the priorities of the Programme must be in line with national and international legislations on the environment and conservation measures.
- According to the Scoping Report,in the Programme the land is only potentially affected, a significant environmental impact on arable land cannot be assumed in advance. However, in case of activities relating to agricultural land, compliance with safety rules in force and obtaining permission from the competent regional authorities for land management before prior to commencement of the activities is essential in all cases.
- Prevention, education and awareness raising Programmes on the environment, human health or conservation issues should support sustainability on all levels of the communities.
- Proper planning and implementation of Programmes related to the protection of water resources used for drinking water mass supplying is important.

The presumably considerable impacts on the environment have been elaborated at the level of the priorities of the Programme. The tables present the considerable impacts on the environment using the same legend as in case of the impact matrix in Chapter 6.1. and under this, based on the legend, the impacts have been justified also. As a result of this, the proposed measures have been presented in the last part of the tables, which are suggested in order to prevent, to reduce and to compensate – as much as possible – the considerably harmful environmental impacts, specifically in case of each priorities.

TO3 Promotion of local culture and preservation of historical heritage Priority 1: Promoting local culture and history along with tourism functions		
Biodiversity, flora, fauna: 0	Air and climate change: 0	Soil and land use: K+/-
Waters (ground waters, surface waters): 0	Landscape and land cover: L+	Material assets, cultural heritage: L++
Population and human health: 0	Energy consumption, use of renewable, traffic and transport: 0	
Description of the likely considerable impacts on the environment:		

The priority promotes local culture and preservation of historical heritage by several interventions. The objective aims at the region as a joint tourism destination based on its cultural, historical, religious values with the preservation of historical buildings. It strongly contributes to the sustainability of the region on the long run. The priority also promotes traditional use of landscape and is strongly connected to other landscape related issues (e.g. improvement of the landscape around the heritage sites). Theaims of this priority not directly focus on the soil or land use however they promote the production of traditional local (handicraft, (organic) agricultural) products, which can positively influence soil, especially its fertility, since traditional methods facilitate the sustainable use of land. However, an increasing production may have indirect negative impacts as well.

The construction works can have higher environmental loads temporarily. The growing intensity of tourism can cause increased load on the environment (e.g. increased pollution of traffic, increased waste and waste water generation, disturbance of wildlife).

Recommendations - measures to reduce and/or to compensate the considerably harmful environmental impacts:

- Projects related to the promotion of local culture and preservation of historical heritage should be supported which have no significant impact on the landscape or the environment.
- In case of constructions related to renovation works of cultural heritage, the less impact on environment and human health has to be addressed.
- In case of intervention that affects soil layers the elaboration of soil conservation plans should be a precondition.
- The development of thematic routes connecting historical cultural or religious heritage sites should be planned concerning landscape and natural values avoiding disturbance or

degradation.

- When new tourist destinations will be available or an already existing destination will be developed, they should be supplemented by environmentally friendly transport modes.
- During planning and operation of the touristic sites, special attention should be placed on avoiding or minimizing adverse effects of growing intensity of tourism.
- Development of the "Green accommodation – green tourism", ecotourism pattern is to be preferred.
- Facilitating integrated approach practices, e.g. infrastructure development combined with environmentally friendly tools, climate friendly architectural solutions are preferred if possible.
- Promoting the utilization of "brownfields" by new infrastructure developments, in order to utilize existing land instead of agricultural land is to be preferred.
- Promoting action / processes of selective waste collection in offices (e.g. paper reuse, selective waste collection and waste recycling) or in the frame of joint events according to the national legislations in force is to be preferred.
- Supporting civil activities related to local environmental development Programmes is to be preferred.

TO 6 Environmental protection, climate change mitigation and adaptation Priority 1: Sustainable use of the environment in the cross border area - preservation of natural resources, actions to reduce GHG emission and pollution of rivers		
Biodiversity, flora, fauna: L++	Air and climate change: L++	Soil and land use: L+
Waters (ground waters, surface waters): L++ / K+	Landscape and land cover: L+	Material assets, cultural heritage:K+ / L+
Population and human health: L+ / K+	Energy consumption, use of renewable, traffic and transport: L++	
Description of the likely considerable impacts on the environment:		

Direct positive impacts on biodiversity, flora and fauna are likely, as the Priority will support the development of natural parks and forestry management systems and the protection of landscape, biodiversity and eco-systems. The interventions highly contribute to the preservation of landscape and natural resources. This Priority also contributes to the better conditions of natural waters, since it supports the protection of water resources. The joint Programmes and co-operation in realising sustainable use of natural resources will have positive impact on the preservation of e.g. soil productivity or material assets. The described positive effects on the environment will have clear influence in a positive way on the wellbeing of human population as well.Basically no negative environmental impacts and risks are expected at prevention and sustainable use of common natural values apart from those temporary impacts that could arise during the implementation (construction) of the specific projects. The higher effectiveness of environmental measures may indirectly positively influence material assets or cultural heritage as well.

The Priority also promotes the adaptation to climate change by supporting the use of renewable energy resources and the decrease of fossil fuel use. The promoted increasing energy efficiency of buildings, industrial and agricultural production and the increasing competences and skills in the fields of eco-innovation and for low-carbon solutions will have positive impact on the air and climate change. These actions support climate change adaptation in the long run by GHG emission reduction.

Indirect impacts in use of renewable energy resources and decrease of fossil fuel use positively influence the protected natural values, flora and fauna and also on cultural heritage by decreased load on environment (e.g. decreased air pollution). More objectives of the Programme (energy efficiency, energy savings and recycling, higher use of renewables) contribute to improving environmental quality affecting human health positively.Interventions can result in soil quality degradation due to the inappropriate planning and management of the use of thermal water and biomass. Hydropower plants may have adverse ecological impacts (barrier effect) due to the inappropriate planning and management.

The actions contributeto better water and soil quality, as they support the better management of wastewater and solid waste, resulted in a decreased load on soil and surface and subsurface waters. The better management will likely decrease the risk of accidental pollution incidents causing environmental damages. This can have positive environmental effect on all elements of the environment (e.g. water, soil, flora and fauna) and also on built environment (e.g. heritage sites) or human health. The actions promoting more effective waste water and solid waste management will improve the quality of the landscape as well. The decreased load on soil and surface and subsurface waters have indirect positive effect on human health (better drinking water quality, healthier agricultural products). The planned surveys on water quality problems of river basins crossing the border and the monitoring system can contribute to a better knowledge on the possible environmental hazards and can contribute to future action plans to minimize these hazards.The development of landfills that are suitable for recycling and fulfil environmental requirements contribute to the mitigation of soil and groundwater contamination.

Recommendations - measures to reduce and/or to compensate the considerably harmful environmental impacts:

- In case of intervention that affects soil layers the elaboration of soil conservation plans should be a precondition.
- The proposed actions under the priorities of the Programme must be in line with national legislations on soil protection.
- 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 and nature conservation issues.
- Ecological education Programmes should have special focus on the sustainability approach and the possibilities of the local people in sustainable use of the natural resources (e.g. agricultural technics, water use, protection of wildlife).
- When harmonising local renewable energy production strategies, environmental, socio- and economic impacts, furthermore cost-effectiveness has to be realistically considered.

- In energy planning the overexploitation of thermal water resources has to be avoided, furthermore proper waste water disposal also requires concern.
- When considering renewable energy production strategies, waste disposal and environmental impacts has to be addressed.
- Negative side-effects of growing green energy utilization (e.g. one-sided biomass production, adverse effects on hydromorphology and ecological corridors, noise, negative impact on landscape) should be avoided.
- In case of activities relating to agricultural land compliance with safety rules in force and obtaining permission from the competent regional authorities for land management before the commencement of the activities is essential in all cases.
- The protection of water resources which used for mass supplying of drinking water should be ensured during planning and implementing any projects in the frame of the Programme.
- The safe disposal of waste water needs to be ensured.
- Sustainable development approach (e.g. recycling/reuse) should be promoted during planning and operating waste and wastewater management systems.
- Facilitating integrated approach practices, e.g. infrastructure development combined with environmentally friendly tools, climate friendly architectural solutions are preferred if possible.

TO 7 Improvement of accessibility to the regions, development of sustainable and climate-proof transport and communication networks and systems Priority 1: Development of transport infrastructure to improve the mobility of persons and goods		
Biodiversity, flora, fauna: L-	Air and climate change: L+/- 0 K+/-	Soil and land use: K-/ 0
Waters (ground waters, surface waters): 0	Landscape and land cover: 0	Material assets, cultural heritage: L+/- K+/-
Population and human health: K+/- 0	Energy consumption, use of renewable, traffic and transport: K+ / 0	
Description of the likely considerable impacts on the environment:		

The promoted building, modernisation and upgrading of transportation infrastructure contribute to a better connectivity and more effective regional transport. The planned actions can have indirect positive impacts on the health and well-being of the population due to the resulted decrease in energy consumption and emissions. Due to the planned environment-friendly transport systems, the reduction of fossil energy consumption is likely, which will have positive effect on air quality and climate change. The environment-friendly transport systems can also promoting the sustainable use of material resources; however the overuse of biomass energy can have adverse effects.The planned actions enhance the availability of material assets and cultural heritage sites.

The newly built transport infrastructure will necessarily have adverse effects on the environment and population. They will necessarily affect the soil, land use and landscape due to land consumption.

Effects on biodiversity, flora and fauna are also inevitable, because of the increased fragmentation of natural areas and ecological corridors. Growing traffic intensity is also likely, causing increase of noise level and air pollution load with likely negative impacts on human health. The constructions works of infrastructural developments also have temporary negative effects on the environment and human health due to the increased noise and air pollution and increased disturbance of wildlife.

Recommendations - measures to reduce and/or to compensate the considerably harmful environmental impacts:

- The infrastructural developments have to be planned and implemented with special care to landscape and the natural values under protection avoiding fragmentation of habitats and any additional impact through air and noise pollution, furthermore waste generation and waste management issues, as well as potential adverse effects on hydrology/hydro-morphology and water pollution has to be also considered.
- The infrastructural developments have to be planned and implemented with special care to cultural heritage avoiding their damage.
- In case of constructions related to infrastructural developments the less impact on environment and human health has to be addressed.
- In case of intervention that affects soil layers the elaboration of soil conservation plans should be a precondition.
- The proposed actions under the priorities of the Programme must be in line with national legislations on soil protection.
- In case of activities relating to agricultural land compliance with safety rules in force and obtaining permission from the competent regional authorities for land management before the commencement of the activities is essential in all cases.
- Noise protection measures should be enforced.
- Air pollution, waste generation and waste management measures should be included, applying environmentally friendly construction methods (e.g. application of silent road surface) and those should be included among the eligible activities is to be preferred.
- Promoting environmentally friendly transport alternatives (bicycle routes, e-car rental) and combined transport orientated projects (P+R, B+R) is to be preferred.

TO 7 Improvement of accessibility to the regions, development of sustainable and climate-proof transport and communication networks and systems Priority 2: Development of ICT infrastructure and information sharing		
Biodiversity, flora, fauna: K+ / 0	Air and climate change: K+ / 0	Soil and land use: K+
Waters (ground waters, surface waters): K+ / 0	Landscape and land cover: L+ / 0	Material assets, cultural heritage: 0 / K+
Population and human health: 0 / K+	Energy consumption, use of renewable, traffic and transport: K+ / 0	
Description of the likely considerable impacts on the environment:		

The Priority will likely have no significant direct effects on the environmental issues, however ICT and local media have important role in knowledge transfer in underdeveloped areas. The widespread and effective usage of internet and local media content can help to decrease inequalities of people and public societies by providing information and possibilities to increase participation. They can be very efficient ways for prevention and education programs about healthy life and sustainable environment, which could have long term positive effects on the environmental elements, population and human health.

The ICT infrastructure and local mediacan have important role in protection of cultural heritage by creating communication channel between local people and tourists, or by sharing information about the heritage sites using ICT based information materials.

Recommendations - measures to reduce and/or to compensate the considerably harmful environmental impacts:

- Raising awareness about healthy lifestyle, climate and environmental-conscious behaviour and resource efficiency should be promoted.
- The proposed actions under the priorities of the Programme must be in line with national legislations on soil protection.
- Promoting action / processes of selective waste collection (e.g. paper reuse, selective waste collection and waste recycling) or in the frame of joint events according to the national legislations in force is to be preferred.

TO8 Common challenges in the field of safety and security Priority 1: Support to joint activities for the prevention of natural and man-made disasters as well as joint action during emergency situations		
Biodiversity, flora, fauna: K+ / 0	Air and climate change: 0 / L+	Soil and land use: L+ / 0
Waters (ground waters, surface waters): 0 / L++	Landscape and land cover: K+	Material assets, cultural heritage: L+ / 0 / K+
Population and human health: 0 / L+	Energy consumption, use of renewable, traffic and transport: 0	

Description of the likely considerable impacts on the environment:

The measures of this priority have positive effect on water quality, hydrology and natural water bodies, and improve soil quality by maintaining its functions. Flood prevention infrastructure, furthermore monitoring and risk prevention clearly improve water quality and ecological status of waters in the long run. They also reduce material and economic damages caused by floods and other disasters on human population, on cultural heritage sites or on agricultural and industrial areas. However, some negative effects could also occur in case of inappropriate installation measures on flood protection on natural habitats, wildlife and landscape.The development of inland water prevention infrastructure supports water drainage avoiding agricultural and public damages of water inundations. However, channels may have negative consequences as well, during drought periods.

Disaster prevention and reduction aims of this priority have positive effect on human health and well-being and also on soil, landscape and natural flora and fauna by decreasing the risk and the adverse environmental impacts of natural disaster incidents.

The actions support policies and measures to adapt to climate change by increasing awareness and knowledge and developing skills to develop local and regional strategies in the field of climate change related disasters (e.g. flood, fire, avalanches).

Recommendations - measures to reduce and/or to compensate the considerably harmful environmental impacts:

- The negative impact of the development of flood and inland water prevention infrastructure (installation measures on flood protection) has to be minimised on natural habitats, wildlife and landscape.
- Multipurpose application of inland water drainage channels requires concern to minimise the negative effects during drought periods.
- Joint training Programmes and workshops should consider the reduction of environmental and health impacts of disasters.
- During prevention measures of disasters health and environmental impact assessment of disaster-related risks has to be incorporated into local plans and strategies (e.g. land use, building, infrastructure and economic development plans).
- Sharing information in harmonising activities, monitoring and awareness raising has to be a priority to increase efficiency of project development.
- Beside environmental sustainability, other sustainability aspects have to be encountered in Programme implementation to support maintenance and positive impacts on the long run.
- Harmonized management shall be subject to project in case of floods having several side effects e.g. floodwater mosquitos.
- The damage mitigation tools and drought mitigation tools should be applied wherever possible.
- Raising awareness about climate-conscious behaviour to be included as eligible activity implementation of the specific project

TO8 Common challenges in the field of safety and security Priority 2: Support to the development of health		
Biodiversity, flora, fauna: 0	Air and climate change: 0	Soil and land use: 0
Waters (ground waters, surface waters): 0	Landscape and land cover: 0	Material assets, cultural heritage: 0
Population and human health: L++ / 0	Energy consumption, use of renewable, traffic and transport: 0	

Description of the likely considerable impacts on the environment:

The actions of this Priority directly affect human health via improvement of health and social care and prevention infrastructure and equipment related to cross border service provision, joint capacity development. Social care and patient care will be strongly improved by this objective.

Recommendations - measures to reduce and/or to compensate the considerably harmful environmental impacts:

- Efficient prevention and education Programmes about healthy life and sustainable environment shall be subject of projects with special attention.
- Specific attention should be placed on construction projects of health and social care infrastructure during planning and implementation to avoid or minimize the adverse environmental effects.

8 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

The SEA Directive 2001/42/EC, Art.5.requires the reasonable alternatives of the Programme to be considered within the environmental assessment. Where strategic environmental assessment is required by Directive 2001/42/EC, an Environmental Report should be prepared containing reasonable alternatives taking into account the objectives and the geographical scope of the plan or Programme identified, described and evaluated.

Reasons for the choice of the alternatives need to be justified and the alternatives need to be assessed. Basically the alternatives comprise the gradually elaborated draft of the Programme and the "zero option" (non-implementation of the Programme). Therefore the state of the environment in the Programme area is to be analysed 'with and without' the implementation of the Programme. Besides the implementation and the non-implementation of the Programme an intermediary Programme strategy is also to be analysed.

The planning process that resulted in the Joint Operational Programme[104]

The selected thematic objectives and the content of the priorities of the Joint Operational Programmeare based on the joint planning process in which all the four participating countriesmadegreat efforts. An initial need analyse was implemented to establish the planning process. As the first step of the planning process the focus areas have been preliminary selected. The fundamental principle was to handle regional disparities is to be reached with the selected focus areas. The participating countries and stakeholders have already been involved when selecting focus areas. The preliminary planning tasks resulted in the preparation of the situation analysis of the Programme area in which the possible areas, scale and potential networks suitable for future cross border cooperation have been assessed also. All the participating countries have been involved in a discussion on key findings, problems and potentials.

The Programme strategy has been elaborated as next process step. The strategy addresses joint problems of the cross-border area and has been built on common potentials. The formulation of the Joint Operational Programme contained participatory, interactive methods. A workshop was also organised with ex ante and SEA evaluators to discuss their first findings and suggestion. The selected Programme strategy contains TO3, TO6, TO7 and TO8. Relevant and wide range of stakeholders have been involved and provided valuable contribution during the programming process, among those stakeholders relevant from the environmental point of view (national, regional and local authorities; regional development agencies; chambers of commerce; nature parks and protected areas

[104] The description of the planning process is based on the Joint Operational ProgrammeProgramme document for the HUSKROUA ENI CBC Programme 2014-2020, chapter 1: Introduction.

management bodies; cultural institutions; educational institutions; tourism associations; scientific institutes/research centres/universities; local business associations; civil society organisations).

Potential alternatives

Two potential alternatives have been raised during the environmental assessment.

(1)[105] The planning process took into consideration numerous outcomes, findings and standpoints. As a result of the aspects arose 4 possible versions of the possible structure of the thematic objectives took shape and have been presented for the participating countries at the 3rd Joint Task Force Meeting.

Version 1 - as amuch focused Programme version: TO3, TO6, TO8.

Version 2: TO3, TO6, TO8 ,and max. 2 selected from TO1 or TO2 or TO4 or TO7.

Version 3 – social focus: TO2, TO3, TO4, TO6, TO8.

Version 4: TO1, TO3, TO6, TO7, TO8

On the 3rd Joint Task Force Meeting the participating countries selected TO3, TO6, and TO7 and decided that regarding TO8 and TO10 further analysis and investigation is needed to clarify the necessity of TO8 and TO10.

A version of TOs TO3, TO6, TO7 and TO10 has been considered as a potential intermediary alternative.

(2) As the first main step of the Strategic Environmental Assessment process the Scope of the Assessment has been elaborated and presented for consultation with stakeholders considered relevant from environmental point of view. Some of the consulted stakeholders formed suggestions to the content of the Programme strategy and to the content of the priorities. The formulated suggestions might be a potential alternative Programme strategy version.

The elaboration and assessment of further alternatives would only be reasonable, if they were a relevant basis for decisions. Through the programming process wide range of stakeholders has been involved and the possibility has been given for them to formulate their standpoint on the Programme strategy. The Joint Task Force of the HUSKROUA ENI CBC Programme 2014-2020 has taken into consideration the received contribution from stakeholders when deciding on the selected thematic objectives. The version of TOs TO3, TO6, TO7 and TO10 were subject of further discussions and decision of the JTF and therefore considered as the most justified intermediary version. The most justified intermediary version of the selection of priorities and related specific objectives should form a basis for an environmental assessment as a reasonable alternative to be evaluated.

In case of the Joint Operation Programmeand for the above mentioned reasons the examined alternatives of the SEA process are the following. The three alternatives are compared against environmental factors.

[105]Based on the Information material for the 4th JTF Meeting held on 25th November 2014

- The „Zero option" – without the implementation of the Programme.
- The „Intermediary alternative" is based on an alternative Programme strategy (The alternative Programme strategy consists of TO3, TO6, TO7 and TO10.).
- The „Best alternative" is the implementation of the Joint Operation Programme for HUSKROUA ENI CBC Programme 2014-2020 (The Programme strategy of TO3, TO6, TO7 and TO8.)

In case of the "Intermediary alternative" compared to the "Best alternative" less attention was given to mainly human health, risk monitoring and flood prevention, furthermore development of natural parks and forestry management systems, recycling and renewables based on the Information material for the 4th JTF Meeting.

The core of the assessment process is the following question: "How does the situation of the relevant protected goods in the cooperation area improve or deteriorate in comparison to the non-implementation of the Programme (zero option), if the measures of the Programme are implemented?" The trend in the improvement of the environmental situation of the Programme area has been described in case of the protected environmental aspects and the possible progress based on the proposed actions under each specific objective could be the following:

"Zero option" – without the implementation of the Programme

Biodiversity, flora, fauna

Biodiversity issues and nature conservation is an important issue in the region due to the high number of values, however, habitat conversion, degradation and fragmentation, furthermore the spread of invasive species, and the impact of climate change remain still major concerns.

Air and climate change

Air quality has significantly improved in the past decades; however, sources of air pollutants mainly from fossil fuel burnings for energy generation, transport and industry have impact on the environment. Increasing extremities due to climate change can contribute to increasing possibilities of natural hazards.

Soil and land use

Soil degradation due to improper land use is a risk factor of soil resources. Agriculture, industry and transport are main factors that influences land use. Proper waste and waste water management are still one of the major problems the region faces.

Waters (ground waters, surface waters)

The rivers in the region are under the threat of pollution from municipalities and urban settlements, farming, industry and mining. The region also faces considerable flood hazard problems along the rivers. Ground water resources of the region face quality and quantity problems due to

contaminations and overuse of resources. Water quality remains an important issue in the future, and it is indistinct to which extent the aims of the water framework directive can be met.

Landscape and land cover

The Carpathian Mountains host large areas of protected ecosystems, the adequate management of which is a future challenge. The cross-border area has common landscapes and water bodies, thus preparedness and management for environmental havaria cases and hazards remains an important issue.

Material assets, cultural heritage

Several values of the cultural heritage were acknowledged and a large number of sites are under protection. However, many of the historical buildings, that represent high values in the region, face worsening conditions; they can be important sources of tourism and heritage preservation, thus awareness raising in this issue remains inevitable role.

Population and human health

Due to the economic, technological, social and political changes of the past decades, the region faces many negative social effects (poverty, migration, bad health state of the population and difficulties in infrastructural development) that influence also human well-being and health. Although continuous efforts are done on tackling these issues, further emphasis is necessary.

Energy consumption, use of renewable sources, traffic and transport

Several investments for improving energy efficiency and an increase in use of renewables were observed in the past years, but the potentials of the region are still not exploited. Traffic and transport provides insufficient accessibility of certain regions, furthermore info-communication interconnectivity and knowledge transfer is underdeveloped at certain areas.

"Intermediary alternative"

Biodiversity, flora, fauna

The preservation of the biodiversity and the natural heritage is supported by the interventions in protecting landscape, biodiversity and water resources, furthermore the joint Programmes and co-operations in these issues in the region. Supporting ecological and traditional agriculture can help to preserve biodiversity. However, the development of natural parks and forestry management systems, especially with cross border effect is also a key issue in the protection of landscape and biodiversity, which should be targeted. Infrastructural developments can have negative impacts on the environment, thus, their appropriate environmental impact assessment is of high importance.

Air and climate change

Several thematic objectives support improving air quality and climate change is also promoted through the interventions aiming at improved mobility, environment-friendly transport systems, energy efficiency, increasing competences in the use of renewable energy sources. All these

contribute to the further reduction of GHG emission. The lack of harmonised activities in hazard protection and joint early warning systems remains a future challenge promoting decreased vulnerability.

Soil and land use

The improvement of soil quality and fertility is promoted by more objectives; furthermore, risk reduction of contamination is also aimed. By sustainable waste and wastewater management, environmentally friendly infrastructures, sustainable use of resources, risk prevention, soil quality is also concerned by maintaining the soil's functions. In case of waste management, further challenges in promotion of measures to increase recycling could be beneficial. Infrastructural investments can have negative impacts on land use and soil quality that require concern during planning.

Waters (ground waters, surface waters)

Water quality issues and the ecological status of natural water bodies are affected positively by many interventions. Early warning system and the development of monitoring system of water resources clearly improve water quality and ecological status of waters in the long run, however, activities on flood prevention measures, development of flood prevention infrastructure, furthermore risk prevention should also be targeted. Increasing tourism can contribute to higher environmental loads on waters, thus, sustainability and appropriate management has to be considered during even planning phases of interventions.

Landscape and land cover

Preservation, management and awareness raising issues on biodiversity, sustainability and values of built environment are in focus of more objectives and actions planned that will have positive impact on landscape and cultural heritage prevention in the region. Increased environmental load can be expected during realisation of construction works.

Material assets, cultural heritage

Several actions support local culture and historical heritage. Joint activities, programs, co-operations exchange of experiences are in focus that contributes to enhanced tourism and by the awareness raising Programmes the future sustainability is also aimed. However, further challenges in the preservation and restoration of historical buildings are expected.

Population and human health

Some interventions contribute to improving environmental quality affecting human health positively (e.g. better waste and waste water management, higher use of renewables, energy efficiency). However, further challenges in health care and health infrastructure are expected. The lack of the improvement in risk monitoring and management has indirect impacts also on human health.

Energy consumption, use of renewable sources, traffic and transport

Several interventions (e.g. environment-friendly transport systems, energy efficiency) contribute to decreasing fossil energy consumption, thus, higher environmental quality via decreasing GHG emissions in the Programme. The green infrastructural investments contribute to improving environmental quality; furthermore it helps the improvement of tourism. Infrastructural investments can result in higher environmental load. However, more clear focus on the use of renewable energy and harmonisation of local renewable energy production strategies could improve the positive effects of the Programme.

"Best alternative" – development with the implementation of the Programme

Biodiversity, flora, fauna

The interventions of protecting landscape, biodiversity and water resources, furthermore the joint Programme and co-operations in these issues highly contribute to the preservation of the biodiversity and the natural heritage in the region. Infrastructural developments can have negative impacts on the environment, thus, their appropriate environmental impact assessment is of high importance.

Air and climate change

Air quality and climate change is promoted by most of the thematic objectives through the interventions aiming at improved mobility, environment-friendly transport systems, energy efficiency, increasing competences in the use of renewable energy sources. All these contribute to the further reduction of GHG emission. The harmonised activities in hazard protection and joint early warning systems promote adaptation and decrease vulnerability to climate change

Soil and land use

More objectives concern the improvement of soil quality and fertility, furthermore contamination risk reduction. The promotion of sustainable waste and wastewater management, environmentally friendly infrastructures, sustainable use of resources, risk prevention can improve soil quality by maintaining the soil's functions. Negative impacts of infrastructural investments on land use and soil quality require concern during planning.

Waters (ground waters, surface waters)

Many interventions affect water quality and the ecological status of natural water bodies positively. Flood prevention measures, development of flood prevention infrastructure, furthermore monitoring and risk prevention clearly improve water quality and ecological status of waters in the long run. Increasing tourism can increase environmental loads on waters, thus, sustainability and appropriate management has to be considered during even planning phases of interventions.

Landscape and land cover

More objectives and priorities include preservation, management and awareness raising issues on biodiversity, sustainability and values of built environment that will have positive impact on

landscape and cultural heritage prevention in the region. Increased environmental load can be expected during realisation of construction works.

Material assets, cultural heritage

Local culture and preservation of historical heritage is supported by several interventions in the Programme. The maintenance of values of built environment and the awareness of people will be improved, furthermore, the higher availability will enhance tourism as well.

Population and human health

More objective of the Programme contributes to improving environmental quality affecting human health positively (e.g. better waste and waste water management, higher use of renewables, energy efficiency). Risk prevention measures indirectly have positive effect on well-being due to higher environmental safety. The improving tourism and availability can also contribute to the well-being of population. An increased traffic can have negative impacts on human health.

Energy consumption, use of renewable sources, traffic and transport

The interventions of more objectives in the fields of environment-friendly transport systems, energy efficiency, and use of renewables contribute to decreasing fossil energy consumption, thus, higher environmental quality via decreasing GHG emissions. Infrastructural investments can result in higher environmental load. The green infrastructural investments has less effect on environment, furthermore it helps the improvement of tourism.

Comparison of trend in "zero option", "intermediary alternative" and Programme impact

The description of the status quo ante and the development trend results from a comparison of the zero option, the intermediary alternative and the Programme impact.

The legend for representing trends:

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

Protected good	Trend in „Zero option" – without the implementation of the Programme	Trend in „intermediary alternative"	Development with the Programme
Biodiversity, flora and fauna	0	+	++
Air and climate change	+/-	+	+
Soil and land use	+/-	+	+
Waters (ground waters, surface	+/-	+	++

waters)			
Landscape and land cover	0	+	+
Material assets, cultural heritage	+/-	+	++
Population and human health	+/-	+	++
Energy consumption, use of renewable sources, traffic and transport	+/-	++	++

9 A description of the measures envisaged concerning monitoring in accordance with Article 10

According to Article 10 of the SEA Directive, the significant environmental effects of the implementation of plans and Programmes shall be monitored in order to identify at an early stage unforeseen adverse effects, and to be able to undertake appropriate remedial action.

The proposed monitoring system is based on the relevant environmental objectives specified in Chapter 5.2. In general, the purpose of environmental objectives is to improve environmental indicators. More specifically, the environmental objectives are determined by international regulatory standards. These objectives represent those environmental topics, which can be influenced by the implementation of the Joint Operational Programme. The guiding questions for each environmental issue are derived from the environmental protection objectives derived from environmental policies at EU and national level.

The analysis of the impacts of Programme implementation on the respective environmental issues should be one of the goals of the evaluation system. In the framework of the SEA appropriate indicators have to be proposed, which can depict the development of the concerned protected good in a clear and comprehensible way. Tracking the achievement of environmental goals should be implemented via various indicators. The use of result indicators is suggested at strategic planning level, while during the fulfilment of legal regulations (including compliance with EU directives), the use of outcome indicators is recommended.

As a general rule and with the purpose to avoid confusion and duplication the indicators proposed for the programming document has been analysed first from environmental point of view, whether they are relevant for the environmental issues, environmental objectives and guiding questions. The Environmental Report proposes additional environmental indicators in case of those environmental objectives that are not covered by Programme indicators. The environmental indicators are suggested in the frame of the environmental report and the results of monitoring the indicators are suggested to be published on the Programme's website.

The table belowpresents the SEA indicator system: (1) the concerned protected goods, (2) the relevant environmental objectives, (3) the derived guiding questions, (4) the proposed monitoring indicator, (5) the type of the indicator – weather it is a Programme indicator with environmental relevance or it has been proposed by the SEA, (6) information for monitoring the indicator with the following details, as measurement unit, frequency of reporting, baseline, target, source of data.

Protected good the indicator is relevant for	Relevant environmental objectives	Derived guiding questions	Monitoring indicator	Type of the indicator Legend: R – JOP Result indicator O – JOP Output indicator I – Indicator proposed by the SEA	Implementing information
Biodiversity, flora, fauna	Protection and promotion of natural habitats (e.g. within the NATURA 2000 network) and protected species and the sustainable use of biodiversity components	Will the Programme have an effect on promotion and protection of natural habitats (e.g. within the NATURA 2000 network) and protected species?	Surface area protected in order to attain a better conservation status (ha)	O (TO6 P1)	Information is available in the JOP
	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.	Will the Programme affect the decrease of habitat and species fragmentation?	Increase in average size of non-fragmented land parcels	I	Measurement unit: km^2 Frequency of reporting: once 2022 Baseline: RO: 350, SK: 110, HU: 110, UA: – (km^2, 2002) Target: all the actions must have positive impact on the habitats Source of data: (SEBI 013)/EEA/May 2010 http://www.eea.europa.eu/data-and-maps/indicators/fragmentation-of-natural-and-semi/fragmentation-of-natural-and-semi

	Promotion of common management off cross-border ecosystems and habitats	Will the Programme promote the common management off cross-border ecosystems and habitats?	Increased capacity in environmental protection and climate change mitigation (Based on surveys (baseline, mid-term, final) among key stakeholders e.g. water directorates. relevant NGOs institutions, authorities)	R (TO6 P1)	Information is available in the JOP
			Number of active participants in best practice sharing events, awareness campaigns and education Programmes	O (TO6 P1)	Information is available in the JOP
Air and climate change	Reduction of air pollution (e.g. to prevent acidification, eutrophication and ground-level ozone pollution) and GHG emissions (min. 18 % below 1990 in the period 2014-2020).	Will the Programme have an effect on the reduction of the air pollution and GHG emissions?	Number of public transport lines with increased service level as direct consequence of the support (lines)	O (TO7 P1)	Information is available in the JOP
	Promotion of policies and measures to adapt to climate change. (e.g. sustainable water resource management, green infrastructures, flooding, use of drought tolerant plants)	Will the programme support actions contributing to the implementation of policies and measures to adapt to climate change?	Increased capacity in environmental protection and climate change mitigation (Based on surveys (baseline, mid-term, final) among key stakeholders e.g. water directorates. relevant NGOs institutions, authorities)	R (TO6 P1)	Information is available in the JOP
			Number of co-operating organisations in disaster management	O (TO8 P1)	Information is available in the JOP

	Improving common risk assessment and management system for natural and industrial risk sites connected to climate change.	Will the Programme effect the improvement of common risk assessment and management system for natural and industrial risk sites connected to climate change?	Size of population served by improved prevention system (number of citizens served)	R (TO8 P1)	Information is available in the JOP
Soil and land use	Prevention and reduction of soil contamination, maintenance of soil functions on the highest possible level (according to Thematic Strategy for Soil Protection (EC 2006a,b)	Will the Programme promote sustainable land use?	Progress in management of contaminated sites (expressed per management step and against established targets where relevant)	I	Measurement unit: management step Frequency of reporting: once 2022 Baseline: no baseline Target: the highest number of actions as possible Source of data: (CSI 015/LSI 003)/EEA/May 2014 http://www.eea.europa.eu/data-and-maps/indicators/progress-in-management-of-contaminated-sites-3/assessment
	Promoting sustainable land-use (e.g. supporting of High Nature Value (HNV) farming, revitalization of brownfields, recultivation of old landfills)	Will the Programme help to maintain soil functions on highest possible levels?	Number of revitalized brownfield or recultivated old landfill sites or projects promoting the development of HNV farming	I	Measurement unit: number, Frequency of reporting: once 2022 Baseline: no baseline Target: waste management and development related projects should target the improvement of the state landfill sites and brownfield Source of data: Project level progress reports, Monitoring data at JTS

	Reduce waste generation, increase waste recovery and recycling.	Will the Programme reduce waste generation, increase waste recovery and recycling?	Municipal waste generation (Municipal Solid Waste (MSW) kg/capita)	I	Measurement unit: kg/capita Frequency of reporting: once 2022 Baseline: HU: 402, SK: 324, RO: 271, UA: – (kg/capita) Target: projects should target the decrease of municipal waste generation Source of data: (CSI 016/WST001)/EEA/Dec 2011 http://www.eea.europa.eu/data-and-maps/indicators/municipal-waste-generation/municipal-waste-generation-assessment-published-4
			The rate of recycled municipal waste (The recycled municipal waste stated in percentage of the generated amount)		Measurement unit: % Frequency of reporting: once 2022 Baseline: RO: 3%, SK: 13%, HU: 25%, UA: – (2012) Target: projects should target the increase of waste recycling rates Source of data: EEA Report No 2/2013 http://www.eea.europa.eu/publications/managing-municipal-solidwaste

Waters (surface waters, ground waters)	Promoting sustainable use of water resources including the identification and protection of potential sources of freshwater supply, that integrates technological, socio-economic, environmental and human health considerations; appropriate controls over the abstraction of fresh surface water and groundwater; water reuse and recycling (e.g. industrial, agricultural purposes)	Will the Programme have effect on the improvementof ecological and chemical status of surface waters and groundwater?	Water exploitation index (WEI)	I	Measurement unit: % Frequency of reporting: once 2022 Baseline: RO: 2.7% (2007), HU: 5.6% (2002), SK: 0.9% (2007), UA: – Target: projects should target the decrease of water exploitation Source of data:(CSI 018/WAT 001)/EEA/Dec 2010 http://www.eea.europa.eu/data-and-maps/indicators/use-of-freshwater-resources/use-of-freshwater-resources-assessment-2
	Improvement of the ecological and chemical status of surface waters and groundwater by reducing pollutions and improving waste water treatment	Will the Programme help the sustainable water resource management regarding water quantity, quality, groundwater vulnerability and surface – water sensitivity?	Number of waste, wastewater, energy efficiency or renewable energy production interventions	O (TO6 P1)	Information is available in the JOP
	Prevention from and reduction of flood risks (Common approach in assessment and mapping of flood-risk)	Will the Programme help flood risk mitigation?	Size of population served by improved prevention system (number of citizens served)	R (TO8 P1)	Information is available in the JOP

Landscape and land cover	Cooperate towards the protection, management and planning for quality and diversity of European landscapes	Will the Programme protect or increase the quality and diversity of European landscapes?	Number of projects targeting cooperation in landscape protection, management and planning	I	Measurement unit: number, Frequency of reporting: yearly (if there are any projects) Baseline: no baseline Target: all the projects should target cooperation in landscape protection Source of data: Project level progress reports, Monitoring data at JTS
	Ensure protection of natural and cultural landscape (e.g. by revitalization of brownfields), with focus on the most important factors of landscapes during planning.	Will the Programme increase awareness aboutthe value and role of landscapes?	Number of awareness raising actions on the protection of natural and cultural landscape	I	Measurement unit: number, Frequency of reporting: yearly (if there are any projects) Baseline: no baseline Target: the highest number of actions as possible Source of data: Project level progress reports, Monitoring data at JTS
	Increasing awareness of the value of landscapes, their role, promoting training and education in landscape policy, protection, management and planning.	Will waste/landfill recovery, land recycling be supported?	Number of actions promoting waste/landfill recovery or land recycling	I	Measurement unit: number, Frequency of reporting: yearly (if there are any projects) Baseline: no baseline Target: the highest number of actions as possible Source of data: Project level progress reports, Monitoring data at JTS

			Rate of selectively collected waste by the population	I	Measurement unit: %, Frequency of reporting: yearly (if there are any projects) Baseline: Hu: 21, SK: 9, RO:1, UA: – (%, 2010) Target: projects should target the increase of selectively collected waste Source of data: Project level progress reports, Monitoring data at JTS
Material assets, cultural heritage	Protection and preservation as well as sustainable management and planning of European cultural and natural landscape	Will the Programme promote the sustainable management and planning of European cultural and natural landscape?	Increased capacity in environmental protection and climate change mitigation (Based on surveys (baseline, mid-term, final) among key stakeholders e.g. water directorates. relevant NGOs institutions, authorities)	R (TO6 P1)	Information is available in the JOP
	Promoting of sustainable use of material resources	Will the Programme promote the sustainable use of material resources?	Number of organisations using Programme support for promoting local culture and preserving historical heritage	O (TO3 P1)	Information is available in the JOP
	Preserving historic buildings, archaeological sites and other culturally important features	Will the programme aim at supporting the protection of national heritage ?	Number of improved cultural and historical sites as a direct consequence of Programme support	O (TO3 P1)	Information is available in the JOP
Population and human	Creating conditions to improve health and reduce health inequalities	Will human health be improved due to actions supported?	Size of population served by improved health and health related social services (number of citizens served)	R (TO8 P2)	Information is available in the JOP

	Prevention and reduction of diseases and negative health impacts caused by environment-related threats.	Will the Programme affect the prevention and reduction of diseases and negative health impacts caused by environment-related threats?	Improved healthcare related services with cross border effect (services)	O (TO8 P2)	Information is available in the JOP
	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) and increase drinking water quality.	Will the Programme reduce existing disparities in accessibility to the essential public infrastructures and services and increase drinking water quality?	Number of actions targeting the increasein rate of population connected to wastewater treatment plants.	I	Measurement unit: % of population connected to waste water collection Frequency of reporting: once 2022 Baseline: no baseline Target: the highest number of actions as possible Source of data: Project level progress reports, Monitoring data at JTS
			Number of actions serving the improvement of drinking water quality	I	Measurement unit: % Frequency of reporting: yearly (if there are any projects) Baseline: no baseline Target: the highest number of actions as possible Source of data: Project level progress reports, Monitoring data at JTS

Energy consumption, use of renewable, traffic and transport	Improvement of energy efficiency (by 20% by 2020)	Will the Programme have an effect on improvement of energy efficiency (by 20% by 2020)?	Energy consumption ofhouseholds per square meter	I	Measurement unit: toe/dwelling Frequency of reporting: once 2022 Baseline: RO: 1.1, SK: 1.24, HU: 1.48, UA: – (toe/dwelling, 2012) Target: projects should target the decrease of energy consumption ofhouseholds Source of data: (ENER 037)/EEA/Dec 2014 http://www.eea.europa.eu/data-and-maps/indicators/progress-on-energy-efficiency-in-europe-2/assessment
	Increase inuse of renewables (20 % of renewable energy by 2020)	Will the Programme have an effect on the increase inuse of renewables (20 % of renewable energy by 2020)?	Share of renewable energy to totalenergy consumption (%)	I	Measurement unit: % Frequency of reporting: once 2022 Baseline: SK: 11.7%, HU: 9.6%, RO: 22.90% (2012); UA: 3.8% (2009) Target: projects should target the increase of the rate of renewable energy in energy consumption Source of data: (ENER 028)/EEA/Oct 2014 http://www.eea.europa.eu/data-and-maps/indicators/renewable-gross-final-energy-consumption-3/assessment
	Reduction of carbon emissions deriving from transport (by 60 % by 2050) by promotion of environmentally sustainable transport	Will the Programme have an effect on reduction of carbon emissions deriving from transport (by 60 % by 2050)?	Number of public transport lines with increased service level as direct consequence of the support (lines)	O (TO7 P1)	Information is available in the JOP

Non-technical Summary

Introduction

In the new programming period of the European Union (2014-2020) the role of ex ante evaluation and strategic environmental assessment is reinforced. The Strategic Environmental Assessment based on the SEA Directive EU/2001/42 aims at assessing the impact on the environment of the Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020.

The SEA had 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 and to contribute to the integration of environmental aspects into the preparation and adoption of the HUSKROUA ENI CBC Programme 2014-2020 with special regard to the promotion of sustainable development. The SEA process of the HUSKROUA ENI CBC 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.

The assessment object of the SEA is the Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020. The Participating Countries of the HUSKROUA ENI CBC Programme 2014-2020 are Hungary, Slovakia, Romania and Ukraine. The Programme area covers core regions and adjoining regions. The time frame for the Strategic Environmental Assessment was determined by the description of the development trend related to the expected state of the environment, and the possible impacts on the environmental issues. The time frame for the 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.

The SEA of the Joint Operational Programme is planned and carried out in line with the relevant EC Directive (listed above) and the relevant national legislations.

The strategic environmental assessment process included the following:

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. Integration of recommendations from the consultation process
7. Monitoring of the significant environmental impacts
8. Information about the Decision
9. Approval of the document

The Scoping Reportof the Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020 determined the environmental issues considered relevant for the strategic environmental

assessment. The following environmental issues are considered relevant for the strategic environmental assessment and therefore have been chosen and thematically grouped:

- Biodiversity, flora, fauna
- Air and climate change
- Soil and land use
- Waters (surface waters, ground waters)
- Landscape and land cover
- Material assets, cultural heritage (including architectural and archaeological heritage)
- Population and human health
- Energy consumption, use of renewable sources, traffic and transport

Outline of the Programme content

The Programme strategy involves the following thematic objectives and priorities:

- **TO 3** Promotion of local culture and preservation of historical heritage **Priority 1**: Promoting local culture and history along with tourism functions
- **TO 6** Environmental protection, climate change mitigation and adaptation **Priority 1**: Sustainable use of the environment in the cross border area - preservation of natural resources, actions to reduce GHG emission and pollution of rivers
- **TO 7** Improvement of accessibility to the regions, development of sustainable and climate-proof transport and communication networks and systems **Priority 1**: Development of transport infrastructure to improve the mobility of persons and goods, **Priority 2**: Development of ICT infrastructure and information sharing
- **TO 8** Common challenges in the field of safety and security **Priority 1**: Support to joint activities for the prevention of natural and man-made disasters as well as joint action during emergency situations, **Priority 2**: Support to the development of health

Relevant aspects of the current state of the environment and existing environmental problems

Biodiversity, flora, fauna

In the territory of the eligible area three bio-geographical regions are represented that ensure the rich biological diversity of the area. The eligible area hosts biodiversity values of both European and global importance. The endemic plants and animals characteristic for the Carpathian ecosystems are essential biodiversity components in Europe. There are several national parks in the eligible area, which preserve the natural, historical and traditional values of the region. The importance of the valuable flora and fauna in the eligible area can be confirmed by the rich network of protected areas. Slovakia, Romania and Hungary are EU members and have incorporated into the European framework on nature protection and biodiversity into their national legislation. The biodiversity and natural heritage face to several threats and adverse impacts of anthropogenic and of natural origin. Land abandonment, habitat degradation, conversion and fragmentation, deforestation, the diminishing population of small settlements, industrialization, pollution, urbanization and overexploitation of natural resources, climate change and mass tourism can have adverse impacts on the landscape and on the biodiversity in the Carpathians and the migration of animals.

Likely environmental conflicts in the area are due to adverse impacts of anthropogenic and natural origin. Biodiversity is threatened by habitat conversion, degradation and fragmentation due to industrialization, pollution, urbanization, deforestation, land abandonment. Mass tourism can also have negative impacts; climate changes may also contribute to alterations in the landscape.

Air and climate change

The climatic characteristics of the area are highly determined by the topography. There are large differences between the regions. At lower elevation parts of the area the climate is more continental with lower precipitation amount and higher temperature, compared to the mountains. Due to climate change in the past 50 years (1961-2012 significant warming has been observed in the region. The trend in changes of extreme temperature and precipitation values will continue for the next decades. Regarding the potential impact of climate change Hungarian and Slovak regions are facing medium or high increase; Romanian regions will have low increase. The more the potential impacts increase, the more adaptation is important in order to avoid negative consequences on the economy, population, physical assets, cultural heritage and the environment. Regarding GHG emissions decreasing emission trends for GHG gases are reported for all countries. In the area mainly air pollutants from anthropogenic origin influence the air quality. Development and harmonization of monitoring systems of environmental parameters are essential to minimize the effects of disasters affecting citizens and the ecosystem as well.

Soil and land use

The eligible area has a great variety of soil types due to the different landscape types that are covered. The most fertile soils of the region are located on the plain areas of the Pannonian Basin and the Podolian Uplands. Soil degradation means loss of soil or soil quality due to extreme natural events contributing to e.g. erosion, inundations, landslides, furthermore, caused by human interactions, e.g. inadequate land use, contamination. The major soil degradation processes are: soil erosion, salinization, soil compaction, soil sealing, soil desertification, floods and landslides, loss of organic matter and soil contamination. Due to these threatening factors soil functions can be reduced (e.g. filter, buffer, barrier, habitat for wildlife, production function). Therefore, monitoring assessments and adequate land management need to be targeted. Intensive agricultural production can result in soil degradation via the overuse of soil fertilizers or soil compaction due to the inadequate soil tillage. Waste management is still one of the major problems the region faces referring to waste collection, transport, treatment, recycling and disposal. In soil contamination inadequate solid waste disposal, industrial waste management and industrial, transportation and agricultural contaminations play important role.

Waters (ground waters, surface waters)

The main surface water flows of the region is Tisa/Tisza River, its catchment covers the total area of the Hungarian and Romanian parts of the Program area. Most of the area of the Slovakian counties also belongs to the Tisa catchment. Rivers in the area have high importance, they are used in many different ways e.g. for providing water for agriculture or industry, receiving waters for either urban and industrial wastewaters, mining, navigation or energy production. The rivers pose environmental

risks to population and nature due to pollution and floods. In the past 150 years, the increasing human influence on the catchments has caused severe environmental problems related to water quality (pollution) and quantity (floods). The rivers in the region are under the threat of pollution from municipalities and urban settlements, farming, and from industry and mining[106]. Flood protection systems are broadly developed, containing flood protection levees, in-channel and external water storage facilities or in-channel regulation constructions however there are problems with the physical condition and height of the levees. Consequently, steps toward building–up transboundary monitoring and early-warning systems were made and management plan was also prepared, but further developments are essential to ensure flood and environment safety of the region. The main reasons for pollution of groundwater are the intensive agriculture and livestock breeding, the insufficient wastewater collection and treatment at the municipal level, inappropriate waste disposal sites, urban land use and insufficient wastewater treatment at industrial enterprises.

Landscape and land cover

The eligible area hosts several landscapes and landscape types due to its physical geographical conditions. The region is rich in mineral resources. In case of soils under agricultural production, soil degradation can be the reason of environmental conflicts caused by inappropriate land management. Since the cross-border area has common landscapes and water bodies, preparedness and management for environmental hazard cases and disasters has to be considered.

Material assets, cultural heritage

The cultural heritage of the Carpathians is unique and important in Europe with its complexity in styles and impacts. This region preserves parts of the European folk art and architecture that is preserved mostly in its intact status. It has been recognized that natural and cultural heritage including customs and traditional technologies specific to the region constitute essential features to tourism together with the aesthetic value of the environment. Likely conflicts have arisen from the worsening conditions of historical buildings, since they represent high values in the region, and they could be important sources of tourism and heritage preservation.

Population and human health

The territory of the eligible area is approximately 83.000 km^2, being the cross-border area of Ukraine, Slovakia, Romania and Hungary. The 10 counties forming the area altogether havemore than 8 million inhabitants. Unemployment is an important social problem of this region. The insufficient health and social infrastructure hinder socio-economic development and contributes to the spread of health care problems and diseases thus, future sustainable development of the region. Due to the unfavourable economic conditions (employment state or GDP), negative migration trend was observed in the Hungarian, Slovakian and Romanian counties. Only in the Ukrainian counties experience positive migration value. The state of communal infrastructure system has serious deficiency in the region and also big differences are experienced among the different counties. The growingbuilt-up areas of municipalities together with increasing transport infrastructure contributed

to increased load on human health; especially the impact of noise and the pollutant emission play important role in bigger towns and cities.

Energy consumption, use of renewable sources, traffic and transport

Power production of the region relies mainly on fossil fuels, followed by nuclear, hydropower and renewable energy sources. The fossil fuels used for home heating are imported oil and natural gas, furthermore wood and coal. The region has geo-strategic importance due to the traversing oil and natural gas pipelines to Western Europe. Due to the bad financial and infrastructural condition of the area the spread of energy-efficient technologies, usage of renewable energies and environmental friendly technics (e.g. selective waste collection or waste water treatment) is limited. The highest overall share of energy from renewable sources belongs to Romania and the lowest to Ukraine. Transport infrastructure has different density and quality in the counties/regions of the eligible area. There were developments in all countries in the past few years for improving infrastructure; however, further investments are necessary. The ICT infrastructure is less developed in the eligible area compared to the European countries, especially in the mountainous regions.

Environmental characteristics of areas likely to be significantly affected

Since the Programme area has many natural values of national and international interest under protection, furthermore, it has cross-border surface and subsurface waters sensitive to contamination, such areas may be likely to be affected by the future projects. Since the Programme outlines objectives and the priorities and the implementation areas are not clear at this phase, the presumably considerable impacts in the environment are elaborated, that calls the attention on those factors that has to be encountered during planning and implementation phase.

The environmental protection objectives and the likely significance of effects on the environment of the Programme area

The SEA analysis has identified the key environmental policies and legislations in terms of the environment linkages with the HUSKROUA ENI CBC Programme 2014-2020. The policy framework may potentially influence the choice of environmental issues and corresponding objectives. Based on the identified environmental policy framework, the relevant environmental objectives have been set up for each environmental issue. The HUSKROUA ENI CBC Programme 2014-2020 has been assessed by the environmental objectives and the derived guiding questions.

The effects of the Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020 have been determined by the specificity of the Programme and the types of actions planned as likely significant, having cumulative nature according to the criteria of the European Directive 2001/42/EC on the assessment of effects of certain plans and Programmes on the environment –ANNEX II. The thematic objectives and priorities outlines the challenges the region faces, providing a considerable framework for projects and other activities related to cultural heritage, environmental protection, climate change mitigation and adaptation, improving accessibility, safety and security. The Programme is consistent with other plans and Programmes including those in a hierarchy. Environmental sustainability was taken into account as a horizontal principle during the Programme preparation.

Wide range of environmental problems and challenges are targeted by the Programme. The planned objectives probably affect water, soil, flora and fauna, air and climate, population (in quality of life, health status) or cultural heritage. However, these impacts are dominantly positive, thus they can contribute to the positive changes in current state of environment. The positive effects of the actions and interventions are expected to be realised mainly in medium and long-term time-scale (e.g. GHG emission decrease, biodiversity maintenance), however, short-term results are also probable (e.g. decreased traffic emissions result in better air quality). Negative effects can occur only in case of infrastructural developments. The planned improvements (e.g. construction or modernisation of transboundary roads and bicycle paths; development of touristic destinations or flood prevention infrastructure) can contribute to the improvement of life quality or reduction of GHG emissions, they can have positive effects in longer term. The synergistic and cumulative positive impacts of the Programme activities contribute to the improvement of the environmental condition of the region. The magnitude and spatial extent of the effects vary according to the objectives, priorities and actions affecting different size of geographical area and the population.

Based on the current information the proposed objectives of the Programme and planned activities will not have significant adverse transboundary environmental impacts.

The measures envisaged to prevent, reduce and fully as possible offset any significant adverse effects on the environment of implementing the plan or Programme

The HUSKROUA ENI CBC Programme 2014-2020 supports EU2020 targets by its objectives on, environmental protection, climate change mitigation and adaptation, the development of sustainable and climate proof transport and disaster management. Among priorities, sustainable waste and waste water management, sustainable use of natural resources, energy efficiency and prevention of disasters are of high importance. Sustainability is reinforced by several interventions in the fields of e.g. landscape protection, climate change adaptation, environmental monitoring, environment-friendly transport systems and awareness raising actions. By all of these objectives and priorities an integrated sustainable development of the area is aimed by joint co-operation. The overall assessment of the HUSKROUA ENI CBC Programme 2014-2020 is positive and an improving environmental status is possible. The presumably considerable impacts on the environment have been elaborated at the level of the priorities of the Programme. As a result of this, measures have been presented, which are suggested in order to prevent, to reduce and to compensate as far as possible for the considerably harmful environmental impacts, specifically in case of each priorities.

An outline of the reasons for selecting the alternatives dealt with

Where strategic environmental assessment is required by Directive 2001/42/EC, an Environmental Report should be prepared containing reasonable alternatives taking into account the objectives and the geographical scope of the plan or Programme identified, described and evaluated.

Reasons for the choice of the alternatives have been justified and the alternatives have been assessed. Basically the alternatives comprise the gradually elaborated draft of the Programme and the “zero option” (non-implementation of the Programme). Therefore the state of the environment in the Programme area has been analysed ’with and without’ the implementation of the Programme.

Besides the implementation and the non-implementation of the Programme an intermediary Programme strategy has also been analysed.

Measures envisaged concerning monitoring

The significant environmental effects of the implementation of plans and Programmes shall be monitored in order to identify at an early stage unforeseen adverse effects, and to be able to undertake appropriate remedial action. The proposed monitoring system is based on the relevant environmental objectives specified. As a general rule and with the purpose to avoid confusion and duplication the indicators proposed for the programming document has been analyzed first from environmental point of view, whether they are relevant for the environmental issues, environmental objectives and guiding questions. The Environmental Report proposes additional environmental indicators in case of those environmental objectives that are not covered by Programme indicators. The environmental indicators are suggested in the frame of the environmental report and the results of monitoring the indicators are suggested to be published on the Programme's website.

The proposed SEA indicator system consists of the following indicators (name of the indicator and the type of indicator (R – JOP Result indicator, O – JOP Output indicator, I – Indicator proposed by the SEA)):

Surface area protected in order to attain a better conservation status (ha) - O (TO6 P1)

Increase in average size of non-fragmented land parcels – I

Increased capacity in environmental protection and climate change mitigation (Based on surveys (baseline, mid-term, final) among key stakeholders e.g. water directorates. relevant NGOs institutions, authorities) - R (TO6 P1)

Number of active participants in best practice sharing events, awareness campaigns and education Programmes - O (TO6 P1)

Number of public transport lines with increased service level as direct consequence of the support (lines) - O (TO7 P1)

Increased capacity in environmental protection and climate change mitigation (Based on surveys (baseline, mid-term, final) among key stakeholders e.g. water directorates. relevant NGOs institutions, authorities) - R (TO6 P1)

Number of co-operating organisations in disaster management - O (TO8 P1)

Size of population served by improved prevention system (number of citizens served) - R (TO8 P1)

Progress in management of contaminated sites (expressed per management step and against established targets where relevant) – I

Number revitalized brownfield or recultivated old landfill sites or projects promoting the development of HNV farming – I

Municipal waste generation (Municipal Solid Waste (MSW) kg/capita) – I

Municipal waste recycling rates (The rate of recycled municipal waste stated in percentage of the total generated amount) – I

Water exploitation index (WEI) – I

Number of waste, wastewater, energy efficiency or renewable energy production interventions - O (TO6 P1)

Size of population served by improved prevention system (number of citizens served) - R (TO8 P1)

Number of projects targeting cooperation in landscape protection, management and planning – I

Number of awareness raising actions on the protection of natural and cultural landscape – I

Number of actions promoting waste/landfill recovery or land recycling – I

Rate of selectively collected waste by the population – I

Increased capacity in environmental protection and climate change mitigation (Based on surveys (baseline, mid-term, final) among key stakeholders e.g. water directorates. relevant NGOs institutions, authorities) - R (TO6 P1)

Number of organisations using Programme support for promoting local culture and preserving historical heritage - O (TO3 P1)

Number of improved cultural and historical sites as a direct consequence of Programme support - O (TO3 P1)

Size of population served by improved health and health related social services (number of citizens served) - R (TO8 P2)

Improved healthcare related services with cross border effect (services) - O (TO8 P2)

Number of actions targeting the increasein rate of population connected to wastewater treatment plants. – I

Number of actions serving the improvement of drinking water quality – I

Energy consumption of households per square meter – I

Share of renewable energy to total energy consumption (%) - I

Number of public transport lines with increased service level as direct consequence of the support (lines) - O (TO7 P1)

Annex 1: Methods of the Strategic Environmental Assessment

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

SEA Procedure and timing

The methodological approach for the strategic environmental assessment process:

The detailed SEA process outlined includes stages such as Screening, Scoping, drafting the Environmental Report, adoption of the draft Scoping Report and Environmental Report by JTF, public consultations and public access to documents (based on relevant Government Decision), completion of the Environmental Report taking into account the results of the consultations, decision-making, monitoring, adoption of the Environmental Report by the competent authorities is the following:

1. **Screening statement**: Programmes which have significant environmental effects must carry out a full SEA in accordance with the Article 3 of the SEA Directive. The screening statement was set whether the Programme will have significant environmental effects. The Screening Statement was part of the Scoping Report and was consulted – as part of that – with environmental authorities of all Participating Countries with the purpose to confirm the likely significant impact on the environment. The screening procedure has been carried out in consultation with all Participating Countries' environmental authorities.
2. **Scoping and consultation on the Scoping Report:** The agreement on the scope of the SEA was imperative regarding the features of the final result. The concerned environmental authorities was consulted at this stage. The Scoping responded to the questions on climate change and biodiversity also as the Directive (Annex I) requires consideration of interrelationship of environmental factors. The content of the scope and the relevant topics were as by the Directive and the national legislations, and was based on the strategy and areas of intervention. All Participating Countries confirmed the responsible environmental authority including the responsible department for SEA-issues for their State to be involved into the consultation process. The determination of the Environmental Report's scope and level of detail was take place in consultation with the environmental authorities. All ParticipatingCountries confirmed the proposed SEA procedurethat the proposed procedure and consultation process comply with the relevant national laws and regulations.
   According to Art.5 (4) of the SEA Directive the Scoping Reportwas consulted with the relevant environmental authorities in order to receive their professional opinion on the draft Scoping Report. The possible remarks of the environmental authorities were integrated into the final Scoping Report and into the Environmental Report.
3. **Environmental Report** (including public consultation and the integration of comments from the consultation process in all Participating Countries): The Environmental Report comprises information gathered with reasonable efforts and takes into account the available information, comments received from the JTF, commonly applied audit methods as well as scope and level of detail of the Programme. While several countries take part in the Programme, the Environmental Report is a joint Report for the whole Programme area. The Environmental Report presents clear suggestions for the organizations responsible for the elaboration of the Joint Operational Programme of the period 2014-2020 of the

cross-border eligible area of Hungary, Slovakia, Romania and Ukraine based on facts and the special nature of the Programme. The content of the Environmental Report is based on the SEA Directive (Directive 2001/42/EC).

According to Art.6 and Art.7 of the SEA Directive the Environmental Report and the Programme must be made available to the relevant authorities and the public. Official consultation process in accordance with SEA Directive Article has been carried out.

The possible remarks of the environmental authorities were integrated into the final Scoping Report and into the Environmental Report.

The Environmental Report was made available for consultation at the same time with the draft Joint Operational Programme (SEA Directive - Article 6.2 and Annex 1). Subsequent to the consultation responses collected, an explanation has been given on how the Environmental Report and consultation comments have been taken into consideration in the Joint Operational Programme (SEA Directive - Article 8).

4. **Setting up the measures decided for monitoring**: the significant environmental impacts of the Programme implementation: The final version of the SEA Report was prepared taking into consideration the received opinions from the consultation process. Monitoring the significant effects of implementing the JOP on the environment. SEA objectives should derive from environmental objectives, from baseline information and from environmental problems in order to test the environmental effects of the JOP.
5. **Coordination with programming** regarding the proposed measures decided for monitoring: The elaboration needed a very close cooperation with the planners of the JOP, as the relevant comments and suggestions derived from the SEA have been built in the JOP as well.
6. **SEA Statement**: As stated in the Ex-Ante Guidance a summary of how environmental considerations and the opinions expressed in the SEA Report have been taken into account in the Programme has been prepared. The final statement required by the SEA Directive (see section 3.4 above) is to be issued after the adoption of the Programme by the Commission. The summarizing statement contains how environmental considerations have been integrated into the OP, how the Environmental Report and the results of consultations (with the public, the environmental authorities, and the public in other ParticipatingCountries where relevant) have been taken into account.

The strategic environmental assessment process has been carried out according to the following – with timeframe, milestones and output documents:

1. Identification of relevant environmental authorities in the Participating Countries	
Timeframe and planned date for the undertaken step	9th week of 2015 (23rd February)
Outline of the undertaken step	**Precondition:**n.r. **Outputs and milestones:** 1. Identified environmental authorities for consultation acts **Description of the step:** *All Participating Countries confirm and provide contact information about the responsible environmental authority including the responsible department for SEA-issues for their State to be involved into the consultation process.*
Legal reference	In line with SEA Directive Article 3 and Article 4
2. Screening	
Timeframe and planned date for the undertaken step	From the 6th week of 2015 to the 11th week of 2015 (from 2nd February to the 12th March)
Outline of the undertaken step	**Precondition:**Accepted Programme objectives (TOs and priorities), draft territorial analysis on the Programme area **Outputs and milestones:** 1. Screening Statement elaborated, to be incorporated into the Scoping Report **Description of the step:** *The Screening statement will be incorporated into the Scoping Report.* *Screening is important to decide whether SEA should be undertaken. According to the SEA Directive, the SEA is automatically required for the Programme as it is likely to have significant environmental effects.*
Legal reference	In line with SEA Directive Article 3 and Annex II
3. Scoping	
Timeframe and planned date for the undertaken step	Scoping: From the 6th week of 2015 to the 11th week of 2015 (from 2nd February to the 12th March) Elaborated Scoping Report: 12th March 2015. Approval of the Scoping Report: 12th week of 2015 (foreseen by 17th March)
Outline of the	**Precondition:** approved TOs and IPs

undertaken step	**Outputs and milestones:** 1. Elaborated Scoping Report 2. Approval of the Scoping Report by the JTF **Description of the step:** *The Scoping Report identifies the main areas of intervention, summarizes the relevant regulatory background and the methodology planned to be applied during the environmental assessment. It also determines the framework of the environmental assessment, and contains the statement on screening. In accordance with this thematic approach, the Scoping Report includes the background information needed.* *While several countries take part in the Programme, the Scoping Report will be a joint Report for the whole Programme area.*
Legal reference	In line with SEA Directive Article 3.
4. Consultation on the Scoping Report in the Participating Countries (stakeholder level)	
Timeframe and planned date for the undertaken step	Between 12th and 22th weeks of 2015 (from 18th March to 25th May) Finalization of the Scoping Report and the comments incorporated after consultation: 22th week of 2015 (by 30th May)
Outline of the undertaken step	**Precondition:** approval of the Scoping Report by the JTF **Outputs and milestones:** 1. Launched and executed consultation of the Scoping Report with the participation environmental authorities and responsible departments of ministries in the Participating Countries 2. Received and archived comments 3. Final Scoping Report including the summary of the received comments **Description of the step:** *The documents for the consultation with the relevant environmental authorities in the Participating Countries are the 1) Draft Scoping Report and 2) its Executive Summary. These documents will be provided in English language.* *The Executive Summary of the Scoping Report may need to be translated into national languages – complying with national regulations.* *The environmental authorities will be provided with an official letter on the availability of the Scoping Report (in English) and the Executive Summary (in national languages).* *The relevant documents will be made available on the Programme's website and on websites on national level if required.* *The environmental authorities from the Participating Countries are expected to send observations on the Scoping Report.* *A period of 30 days is set for sending and receiving observations. The comments are to be sent electronically in English.* *The comments received will be integrated into the final Scoping Report and into the Environmental Report.*

	The inputs from the consultation will be consulted with the JOP planners and will be taken into account in the preparation of the JOP.
Legal reference	In line with SEA Directive Article 5.4 and 6.3.
5. Drafting the Environmental Report and the measures decided for monitoring	
Timeframe and planned date for the undertaken step	Elaboration of the first draft of the Environmental Report: Between 19-24th weeks of 2015 (from 4th May – 10th June) Approval of the Environmental Report by the JTF: 26th week of 2015 (foreseen by 28th June)
Outline of the undertaken step	**Precondition:** Final draft JOP (Strategy, description of the priority axes, focus and indicative actions, indicators, horizontal principles) approved **Outputs and milestones:** (Final Draft JOP) 1. Draft Environmental Report including measures decided for monitoring 2. Approval of the Environmental Report by the JTF **Description of the step:** *Elaboration of the draft Environmental Report on the likely significant effects of the Programme on the environment according to Annex I of the Directive, including the consideration of:* *The current state of the environment and the likely evolution thereof without implementation of the Programme* *The environmental protection objectives, established at international, community or national level, which are relevant to the Programme and the way those objectives have been taken into account* *The likely significant effects on the environment of the Programme* *The measures envisaged to prevent, reduce or offset the likely significant environmental effects of each area of intervention* *Measures for monitoring environmental effects* *While several countries take part in the Programme, the Environmental Report will be a joint Report for the whole Programme area.*
Legal reference	In line with the SEA Directive Article 5
6. Consultation on the Environmental Report in the Participating Countries (stakeholder and public level)	
Timeframe and planned date for the undertaken step	Between 27-33th weeks of 2015 (foreseen by 1st July – 10th August)
Outline of the undertaken step	**Precondition:** Approval of the draft SEA Environmental Report by the JTF. **Outputs and milestones:** 1. Launched and executed stakeholder consultation of the draft Environmental Report with the participation of the environmental authorities and responsible departments of ministries in the

	Participating Countries 2. Launched and executed public consultation of the draft Environmental Report with the participation of the wider public in the Participating Countries 3. Received and archived comments 4. Final Environmental Report including the summary of the received comments **Description of the step:** *The documents to be made available for the consultation with the relevant environmental authorities in the Participating Countries are the 1) draft Environmental Report, 2) its No-Technical Summary and 3) the draft JOP. These documents will be provided in English language.* *The Non-Technical Summary of the Environmental Report will be translated into national languages – complying with national regulations.* *The environmental authorities will be provided with an 1) official letter, 2) the Environmental Report in English, 3) the Non-Technical Summary in national languages and 4) the draft JOP in English.* *Announcement for the public about the consultation will be via electronic media and mass media if required.* *The authorities and the public from the Participating Countries are expected to send observations on the Environmental Report.* *The required documents will be available on the Programme's website and on websites on national level, on the websites of the relevant Ministries in the Participating Countries.* *A period of 30 days is set for sending and receiving observations.* *The summary of the consultation, the comments received will be integrated into the final Environmental Report.* *The inputs from the consultation will be consulted with the JOP planners and will be taken into account in the finalization of the JOP.*
Legal reference	In line with SEA Directive Article 6.
7. Consultation with third countries	
Timeframe and planned date for the undertaken step	n.r.
Outline of the undertaken step	**Precondition:** Approval of the SEA Environmental Report by the JTF. **Outputs and milestones:** Justification incorporated into the Environmental Report **Description of the step:** *Regarding the territory of Hungary, Romania and Ukraine the neighbouring territories of the eligible regions are also located in the same country. Regarding Slovakia the neighbouring territories of the eligible Slovakian regions*

	are part of Poland. Therefore in relation to the territory of the HUSKROUA ENI CBC Programme 2014-2020 the effects on third countries should be examined related to Poland. *However, related to the territory of HUSKROUA ENI CBC Programme 2014-2020 and based on the current information about the contents of the JOP, it is assumed that the proposed objectives and the planned activities of the Programmewill not have significant adverse transboundary environmental impacts.* ***Therefore the involvement of and the consultation with third countries is not expected to be necessary.***
Legal reference	In line with SEA Directive Article 7.
8. Coordination with programming	
Timeframe and planned date for the undertaken step	34-35th week of 2015 (foreseen by 30th August)
Outline of the undertaken step	**Precondition:** finishedconsultation period and finalized Environmental Report **Outputs and milestones:** 1. Amended JOP **Description of the step:** *The inputs from the consultation (stakeholder and public) will be consulted with the JOP planners, as well as the proposed environmental measures, SEA recommendations and will be taken into account in the finalization of the JOP.*
Legal reference	In line with SEA Directive
9. Finalisation of the Environmental Report including the monitoring measures	
Timeframe and planned date for the undertaken step	37th week of 2015 (foreseen by 10th September)
Outline of the undertaken step	**Precondition:** Approval of the SEA Environmental Report by the JTF. **Outputs and milestones:** 1. Final Environmental Report including the monitoring measures and the summary of the received comments 2. Archived comments 3. A summary of how the environmental considerations, the results of Environmental Report and consultations have been taken into account and been integrated into the JOP 4. Non-Technical Summary 5. Drafting the official statement in line with Art. 9 (b) of the SEA Directive. 6. Approval of the final Environmental Report by the JTF **Description of the step:** *The summary of the stakeholder and public consultations, the comments*

	received will be taken into account and integrated into the final Environmental Report as well as the final JOP.
Legal reference	In line with SEA Directive Article 8, 9, 10
10. Publication of the approved JOP and SEA Environmental Report in the Participating Countries (stakeholder and public level)	
Timeframe and planned date for the undertaken step	37th week of 2015 (foreseen by 10th September)
Outline of the undertaken step	**Precondition:** Approval of the JOP and the SEA Environmental Report by the JTF. **Outputs and milestones:** 1. Government approvals on the JOP and the Environmental Report. 2. Final Environmental Report including Non-Technical Summary and Official Statement published to inform the stakeholders and the wider public in the Participating Countries **Description of the step:** *The environmental authorities and the wider public will be informed about the governmental approval of the JOP and the final Environmental Report, which will be publish including the Non-Technical Summary and the Official Statement (a summary describing of how the environmental considerations have been integrated into the JOP, and how the received comments and findings of the consultations have been taken into consideration).*
Legal reference	In line with SEA Directive Article 9 (1), 10

Parts and content of the Environmental Report

The Environmental Report includes the following sections which are required by the SEA Directive (Directive 2001/42/EC of June 27, 2001):

Part A: the environmental report

- the chapters of the Environmental Report fully follows the Annex 1 of the SEA Directive
- the Environmental Report includes a description of the public consultation and describes the consultation process has been carried out
- Chapter „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" presents the description of the planned monitoring measures on how the monitoring of the environmental effects of the implementation of the Programme should be carried out.

Part B: non-technical summary of the Environmental Report

- An easy-to-read non-technical summary, which allows for the dissemination of the content of the Environmental Report to the general public.

Part C: statement summarizing how the environmental consideration has been integrated into the OP

- According to Article 9(b) of the Directive on the assessment of the certain plans and Programmes on the environment, the environmental statement has been prepared on the basis of the JOP and includes
  - A short description of the content and the most important Programme objectives as well as of the relation to other relevant plans and Programmes,
  - A description of the environmental objectives relevant to the Programme and the account taken of them,
  - The description of the status quo and its presumable development in the case the Programme is not implemented,
  - A description of the presumable considerable impacts on the environment,
  - The short description of the environment protection objectives,
  - The description of measures that are planned in order to prevent, to reduce and to compensate for the considerably harmful environmental impacts,
  - A short description of the reasons for the choice of the alternatives examined and a description of the way the how the SEA has been implemented,
  - Evidence of difficulties which have occurred during the compilation of information.

Data basis and depth

Information was collected in the frame of the environmental assessment to identify the environmental issues and trends that characterize the eligible area of the Joint Operational Programmefor the HUSKROUA ENI CBC Programme2014-2020. This provided the bases for identification and monitoring of environmental effects of the Programme. The data used in the Environmental Report was based on statistical sources.

Determination of initial status has been defined on proper regional/ territorial database, according to NUTS-classification if those were available. In case if NUTS level data were not available country level data has been used.

The data collection was proposed to be based on EUROSTAT data in the European Economic Area, and in the EU-Candidate countries, and on database of the European Environment Agency. Besides these databases, on-line database of the Participating Countries was applicable (e.g. national statistical office). Former contains mainly national data, while the latter was used to gain regional/territorial information on the relevant eligible area.

In the non-member state (Ukraine) the national statistical data was also applied, on the understanding, that the statistical classification and data are comparable. World Bank, UNESCO, United Nations statistics, International Energy Agency (IEA) could also provide comparable indicators.

For specific (e.g. environmental) information, special databases were available, depending on the given scope, e.g. national reports on the state of the environment or nature conservation data or equivalents to these in the different Participating Countries on the field of nature protection, Nature

Conservation Information System for map displaying the protected areas, Air Quality Protection Information System, Meteorological Information System, Environmental Information System.

The environmental assessment provided the quantified information, the target or comparator value, and the source of information for the indicators.

Scope of the assessment

The scoping was the first step within the Strategic Environmental Assessment process. The aim of the Scoping Report was to identify the main areas of intervention, to summarize the relevant regulatory background, and the methodology planned to be applied during the environmental assessment. Present Scoping Report determined the framework of the environmental assessment and contained the statement on screening. In accordance with this thematic approach, the Scoping Report included the background information needed:

- information on the content of the Programme
- definition of the relevant geographic area and timeframe
- overall information on the area, identifying environmental factors and problems related to
- identified environmental problems and legal background
- Identifying relevant plans, Programmes, and environmental protection objectives
- definition of the appropriate environmental indicators that will be the basis of the SEA
- definition of methods to evaluate the positive and negative impacts
- concept of assessment
- information on the SEA process, involvement of responsible bodies, sources of information
- definition of the method of generating and evaluating reasonable alternatives

As the relevant legislation is slightly different in case of each environmental element (e.g. legislation and regulations covering more implementation areas, mainly in the field of nature and soil protection) the Scoping Report included detailed legislative references. While the purpose of the Scoping Report was to determine the current environmental state and the objectives to be achieved, the relevant indicators were defined in accordance with the legislative prescriptions.

During the assessment, basic data information is to be gathered from European databases. Involving the relevant authorities and stakeholders, the necessary information was available in the SEA evaluation, covering the 2014-2020 (+2 years) period.

The Scoping Report served as an input for the authorities to decide upon the necessity of the SEA and to consult on that. Based on the results a decision was made on the scope and the level of specification of the Environmental Report.

The Scoping Report was finalized on the basis of the comments received from the environmental authorities. On the basis of the comments from the authorities, clear suggestions were given to the Joint Task Force and to the planners of the Joint Operational Programme with the purpose to integrate the environmental considerations into the Programme for the sake of fostering sustainable development.

Consultation process within the Strategic Environmental Assessment

Within the SEA procedure related to the Joint Operational Programme for the HUSKROUA ENI CBC Programme2014-2020 the involvement of the relevant environmental authorities and the public was be carried out through two consultation actions:

- Article 5 (4) of the SEA Directive – Consultation on the Scoping Report
- Article 6.2 and Annex 1of the SEA Directive – Consultation on the Environmental Report

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 stakeholders, and their impact on the content of the CP
- effective participation of economic, social and environmental partners

Steps of the consultation process:

- Notification was sent out to the environmental authorities in the Participating Countries: official starting day of the consultation
- E-mail invitation of main stakeholders to participate in the consultation
- Announcements in newspapers in Participating Countries where it was required on the opening of the consultation process
- The draft Scoping / Environmental Report and the CP draft as well as an announcement document were published on the Programme's website

Technical information to be applied under the consultation steps:

- The documents were available in English language and in PDF format.
- The Programme's website where the documents will be available: www.huskroua-cbc.net
- Environmental authorities and the public had 30 days to send their remarks in English language.
- Whilst the Scoping Report and the Environmental Report were joint Reports for the whole Joint Operational Programme of the period 2014-2020 of the cross-border eligible area of Hungary, Slovakia, Romania and Ukraine, the Consultation process were made separately but in parallel in every Participating Country.

- The Environmental Report was available for consultation at the same time with the draft Joint Operational Programme

Involvement of environmental bodies:

Besides the future Managing Authority, all Participating Countries of the HUSKROUA ENI CBC Programme 2014-2020 were involved in the SEA process. The list of invited authorities from the national level was based on relevant national legislations and the decisions of the Participating Countries.

The relevant environmental authorities have been identified in close co-operation with the National Authorities of the Participating Countries. Coordination with the Participating Countries has been conducted on the 8th week of 2015, from 16th February 2015 to 23rd February 2015 regarding the list of authorities to be involved in consultation actions.

The list of relevant environmental authorities identified has been presented in Annex 4. of this Report.

Technical organization of consultations:

In every Participating Countries the responsible public authority for the HUSKROUA ENI CBC Programme2014-2020will serve as a first contact point for the Programme's Managing Authority. The responsible public authority for the HUSKROUA ENI CBC Programme2014-2020in every Participating Country will send the official requests for participation in the consultation for the national SEA responsible authorities.

The responsible public authorities will place the information/announcement on the necessary official website in the respected Participating Country, and will send the official notifications for consultation to national authorities and to the relevant stakeholders as well. These first contact points will take steps for announcing in the media if necessary (central or local media may be also used).

In case translation of the documents is required into a language other than English, it is to be done on national level.

Consultation on the Scoping Report

The consultation on the draft Scoping Report took place between the 1th of April 2015 and the 10th of June 2015 – with differences in the participating countries. The Scoping Report is a joint Report for the whole cross-border eligible area of Hungary, Slovakia, Romania and Ukraine. In every participating country the responsible public authority for the HUSKROUA ENI CBC Programme 2014-2020 sent out the Scoping Report for consultation for the public authorities responsible for SEA in that participating country and an official requests for participation in the consultation.

As part of this consultation the environmental authorities required by the national legislation were invited to review the draft Scoping Report. The ANNEX 3 of the final Scoping Report set out the environmental authorities which took part in the consultation in the participating countries.

The environmental authorities were provided with an official letter in national languages, the whole Scoping Report and an executive summary of the Report. The whole draft Scoping Report was made available on the Programme's website www.huskroua-cbc.netEnvironmental authorities had 30 days to send their remarks on the scope of the environmental assessment in English language.

The comments were received by post or e-mail sent to the responsible public authority for the HUSKROUA ENI CBC Programme 2014-2020.

The responsible public authorities have placed the information/announcement on the necessary official website in the respected participating country if it was necessary.

<u>The received comments from environmental authorities in general:</u>

The received comments can be grouped into three types.

1. Relevant environmental stakeholders from the participating countries declared that they agree with the Scoping Report, and did not send any other comment.
2. Relevant environmental stakeholders sent comments, which are in line with the content of the Scoping Report, and which are comments corresponding to the Scoping Report.
3. Some of the stakeholders sent environmental related recommendations that are directly related to the content of the Joint Operational Programme.

Consultation on the Environmental Report

The consultation on the final draft Environmental Report is planned to take place between 27-33th weeks of 2015 (foreseen by 1st July – 10th August). As part of this consultation, the environmental authorities and the public from the participating countries are invited to review the final draft Environmental Report. The environmental authorities are provided with the whole report in English, the Non-technical Summary in national languages and the Programme document in English.

Subsequently to the consultation responses being collected, an explanation shall be given showing how the Environmental Report and consultation responses from the participating countries have been taken into consideration in the final JOP. The statement on the SEA will provide information on how environmental considerations have been integrated into the Programme and how the Environmental Report prepared pursuant to Article 5 of the Directive, the opinions expressed pursuant to Article 6 of the Directive and the results of consultations entered into pursuant to Article 7 of the Directive have been taken into account in accordance with Article 8 of the Directive and the reasons for choosing the Programme as adopted, in the light of the other reasonable alternatives dealt with.

Public participation

The involvement of stakeholders and the involvement of the public in the SEA process is 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 Joint Operational Programme) to express their opinion.

Interlinking of elements of the whole planning process

Apart from the legal and sectoral point of view of the SEA approach, the assessment process paid attention particularly 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 related to the HUSKROUA ENI CBC Programme 2014-2020 was started parallel with the elaboration of the Joint Operational Programme document, and it will be completed before its adoption. During the process close co-operation with the programming was realized. The elaboration of the Screening statement and the Scope had been started the earliest possible stage. Close co-operation with the planners was coordinated both in the phase of the elaboration of the Scoping Report and the Environmental Report in order to ensure that the environmental effects of implementing the Programme to be taken into account during its preparation and before its adoption.

In the frame of the consultation some of the stakeholders sent environment-related suggestions that are directly related to the content of the Joint Operational Programme.

The following summary presents the main recommendations received from the Participating Countries' stakeholders related to the content of the JOP resulted from the consultation on the Scoping Report and how these have been considered in the Joint Operational Programme:

Recommendations received from environmental authorities in the frame of the Scoping Consultation	Level of integration (fully/partially/ not at all)	Response on the recommendation
It is suggested to incorporate among the type of actions the development of sewage systems in case of settlements close to border crossing points due to increased amount of sewage.	Partially.	Actions regarding the development of the sewage system are planned under TO 6 Environmental protection, climate change mitigation and adaptation in Priority 1: Sustainable use of the environment in the cross border area - preservation of natural resources, actions to reduce GHG emission and pollution of rivers. Planned activities regarding waste management and wastewater treatment though more focus on the quality of rivers crossing the border. Activities as sharing best practices, setting up of small scale pilot systems for wastewater treatment are

Recommendations received from environmental authorities in the frame of the Scoping Consultation	Level of integration (fully/partially/ not at all)	Response on the recommendation
		included regarding wastewater handling – these could affect settlements close to border crossing points.
In case of monitoring systems those should be harmonized with existing systems and with measures of River Basin Management Plans.	n.a.	This recommendation should be taken into account while implementing the Programme.
Within TO6 Priority the following activities are also suggested due to the reason that protection of water resources is of complex multi-level tasks - the assessment of conditions of water resources - to ensure the safe of water resources - to keep the safe of water resources, safe management	Fully.	These questions are handled by the following actions: - the assessment of conditions of water resources: TO6 P1 Planned action: "Surveys on water quality problems of river basins crossing the border." - to ensure the safe of water resources: TO6 P1 Planned actions: "Surveys on water quality problems of river basins crossing the border" and "Setting up of water quality monitoring systems of rivers crossing the borders." - to keep the safe of water resources, safe management: TO6 P1 Planned actions: "Surveys on water quality problems of river basins crossing the border" and "Setting up of water quality monitoring systems of rivers crossing the borders."
Within TO8 P1 regarding the „Harmonizing activities in the field of flood prevention, development of flood prevention infrastructure" those should be harmonization with the existing systems and with measures of River Basin Management Plans.	n.a.	This recommendation should be taken into account while implementing the Programme.
Within TO6 – Environmental protection, climate change mitigation and adaptation, it is suggested to supplement the TO with a new Priority according to the following: Priority 4: Improvement of self-rescue capability of the settlements Objective of the priority: Enhancing the response capacity of non-governmental organisations set up to reduce the harmful and life-threatening consequences of natural	Partially.	The received recommendation could not be integrated into the JOP fully as a new priority due to the limited time for negotiations among the participating countries taking into account the timeframe of the programming period. However, "TO8 Common challenges in the field of safety and security Priority 1: Support to joint activities for the prevention of natural and man-made disasters as well as joint action during emergency situations" the following actions support the improvement of self-rescue capability of settlements: • Harmonising activities in the field of flood

Recommendations received from environmental authorities in the frame of the Scoping Consultation	Level of integration (fully/partially/ not at all)	Response on the recommendation
phenomena at vulnerable communities and settlements. Types of actions: - Improving the preparedness of non-governmental organizations through developing best practices, exchange of experiences, - Publication of information materials, dissemination of rules of conduct - Supporting the development of intervention skills		prevention, development of flood prevention infrastructure. • Support/cooperation/network of non-governmental and public rescue teams/organisations. • Joint training Programmes and workshops, exchange of experiences, study tours.
Within TO8, Priority 1, the „development of technical and IT conditions" is suggested to be incorporated under the type of action „Strategic and technical planning and establishment of joint monitoring systems on environmental (air, water, soil) pollutions".	Fully.	The recommended type of action has been incorporated to the JOP as a type of action in TO8 Priority 1 (though the name of the priority is different).
Within TO8, Priority 1, the involvement of people from ages 6-10, 11-14 and 15-18 is suggested to be involved under the type of action „Increasing awareness and knowledge and developing skills to develop local and regional strategies to prevent and mitigate the impact of global climate change".	Partially.	Under TO8 Priority 1 the wordings of the planned actions have been changed. The suggested ages (6-10, 11-14 and 15-18 years) are not mature enough to develop local and regional strategies to prevent and mitigate the impact of global climate change. The involvement of citizens of the suggested age ranges, awareness raising and knowledge development is realised through the following activities: • Joint ecological education Programmes • Joint awareness campaigns.
Within TO3 Priority 1 it is suggested to present archaeological concerns, suitability of areas in case of tourism developments.	n.a.	This recommendation should be taken into account while implementing the Programme.
Within TO6 Priority 1 it is suggested that the priority focus not only on the river valleys crossing the border but to focus on the whole eligible area of the Programme.	Not at all.	Taking into consideration the limited available sources compared to the tasks to be fulfilled in waste and wastewater management the extension of the area would reduce the focus thus the effectiveness of the Programme. In case of extending activities to the whole Programme area the cross border effect of interventions is less likely.

Recommendations received from environmental authorities in the frame of the Scoping Consultation	Level of integration (fully/partially/ not at all)	Response on the recommendation
Within TO6 Priority 1 "Sharing of best practices, setting up of small scale pilot systems": concrete solutions as the elaboration of technical plans and concrete investments are suggested instead of small scale pilot system.	Not at all.	Taking into consideration the financial resources available only very few full scale projects could be implemented and the cross-border effect would be difficult to realise.
Within TO6 Priority 1 the "Surveys on water quality problems of river basins crossing the border." is not suggested and potential type of action.	n.a.	Further information and clarification is needed from the involved environmental authorities on the suggestion!
Within TO6 Priority 1 "Setting up of water quality monitoring systems." is to be clarified as whether is it possible to set up this kind of systems.	n.a.	Further information and clarification is needed from the involved environmental authorities on the suggestion!
Within TO6 Priority 1 is suggested to be amended with the development of landfills that are suitable for recycling and fulfil environmental requirements.	Fully.	Will be incorporated in the final version of the JOP
Within TO6 Priority 2 instead of "Preservation and sustainable use of natural resources" the "Preservation and sustainable use of surface and groundwater resources" is suggested.	n.a.	The priorities in TO6 have been merged into one single priority, named: "Priority 1: Sustainable use of the environment in the cross border area - preservation of natural resources, actions to reduce GHG emission and pollution of rivers "
Within TO6 Priority 3 hydropower plants are suggested.	Fully.	Will be incorporated in the final version of the JOP.
Within TO7 Priority 1 bicycle roads on dams are suggested.	Partially.	In TO7 Priority 1 'Building, modernisation and upgrading of bicycle paths, routes leading to and crossing the border.' as planned activity includes the development of bicycle roads. The development of the bicycle routes strongly relates to the permeability of the border by bicycle.
Within TO8 Priority 1 the development of **inland water prevention infrastructure** is also suggested.	Fully.	The recommendation will be incorporated in the final version of the JOP.

Recommendations received from environmental authorities in the frame of the Scoping Consultation	Level of integration (fully/partially/ not at all)	Response on the recommendation
Within the TO3 – Promotion of local culture and preservation of historical heritage, Priority 1: Promoting local culture and history along with tourism functions, it is recommended to include a new action „Preparation of project documentation and historical research“.	Partially.	Regarding the first part of the recommendation “Preparation of project documentation” further information and clarification is needed from the involved environmental authorities. Regarding historical research, it can be achieved in the frame of the current activities of the Programme as long as the heritage to be researched meets the objective and requirements of the Thematic objective and the Priority.
Within the TO3 – Promotion of local culture and preservation of historical heritage, Priority 1: Promoting local culture and history along with tourism functions, action „Preservation and restoration of historical buildings in accordance with monument restoration requirements“, it is recommended to modify the action as follows: „Preservation and restoration of historical buildings, historical parks and gardens in accordance with monument restoration requirements“.	Fully.	The activity will be renamed as ‘Preservation and restoration of **historicalheritage sites (buildings, historical parks and gardens)** in accordance with monument restoration requirements’ in the final version of the JOP.
The inclusion of priority 2 „Preservation and sustainable use of natural resources within the Thematic objective 6 is suggested.	n.a.	Further information and clarification is needed from the involved environmental authorities on the suggestion!
Within the TO6 – Environmental protection, climate change mitigation and adaptation, - Priority 2: Preservation and sustainable use of natural resources, action: „Development of natural parks and forestry management systems with cross border effect” it is suggested to replace „Development of protected areas and sustainable forest management with cross-border impact“, in all submitted documents. Justification: „Protected areas” is the general term for various categories of protected areas, including natural parks; the sustainable forestry corresponds to the priority term 2.	Fully.	Will be incorporated in the final version of the JOP.

Recommendations received from environmental authorities in the frame of the Scoping Consultation	Level of integration (fully/partially/ not at all)	Response on the recommendation
Actions defined within the Thematic Objective 7 - Priority 2 „Development of ICT infrastructure and information sharing" to coordinate and harmonize with actions within the Priority 7 „Information Society" of the Joint Operational Programme Integrated Infrastructure 2014-2020 and with the Rural Development Programme 2014-2020.	n.a.	Further information and clarification is needed from the involved environmental authorities on the suggestion!
It is suggested to assess and harmonize the possible priorities and types of actions of the Programme with measures of River Basin Management Plans.	Fully.	Will be incorporated in the final version of the JOP.

The Strategic Environmental Assessment gave clear recommendations included both in the final Scoping Report and in the final Draft Environmental Report. All the recommendations are to be discussed with the consultant responsible for the Joint Operational Programme and to be presented in the final version of the environmental report.

The overview on the main SEA recommendations and how these have been considered in the Programme is to be given in the final Environmental Report and the Official Statement.

Annex 2: List of maps

ANNEX 3: Summary of consultation

To be filled in after the consultation.

Annex 4: List of environmental authorities took part in the consultation process

Slovak Republic	Ministry of Environment of the Slovak Republic Documents for consultation has been posted on the website of the Ministry of Environment: www.enviroportal.sk The following environmental authorities have been involved in consultation: The Košice Self-governing region The Prešov Self-governing region The Association of Towns and Municipalities The Košice District Office - Department of environmental care The Prešov District Office The Department of environmental conservation The Ministry of Transport, construction, and Regional Development of the Slovak Republic – The Tourism Section The Ministry of Transport, Construction and Regional Development of the Slovak Republic – The Section of EU affairs and Foreign Relations The Ministry of Transport, Construction and Regional Development of the Slovak Republic – The Section of Electronic Communications and Postal Services The Ministry of Economy of the Slovak Republic - The Energy Section The Ministry of Culture of the Slovak Republic The Ministry of Interior of the Slovak Republic The Ministry of Health of the Slovak Republic The Public Health Office of the Slovak Republic The Office of the Government of the Slovak Republic - The Cross-cutting priorities Department The Ministry of Environment of the Slovak Republic - The Directorate for Nature Protection and Landscape Development he Ministry of Environment of the Slovak Republic - The Directorate for Water Protection The Ministry of Environment of the Slovak Republic, The Climate Change Department The Ministry of Environment of the Slovak Republic, The Waste Management Department

Hungary	Prime Minister's Office Documents for consultation has been posted on the following website: www.palyazat.gov.hu The following environmental authorities have been involved in consultation: North-Hungarian Regional Inspectorate for Environment and Nature Upper-Tisza Regional Inspectorate for Environment and Nature Tiszántúl Regional Inspectorate for Environment and Nature Aggtelek National Park Directorate Hortobágy National Park Directorate Körös-Maros National Park Directorate National Public Health and Medical Officer Service National Institute of Environmental Health General Directorate of Water Management National Public Health and Medical Officer Service National Directorate for Health Resorts and Thermal Spas National Institute for Chemical Safety Borsod-Abaúj-Zemplén County Directorate for Disaster Management North-Hungarian Water Conservancy Directorate Governmental Office of Borsod-Abaúj-Zemplén County Governmental Office of Borsod-Abaúj-Zemplén County Land Administration Governmental Office of Borsod-Abaúj-Zemplén County Policy Administration Service of Public Health Governmental Office of Borsod-Abaúj-Zemplén County Office for Building and Cultural Heritage Governmental Office of Borsod-Abaúj-Zemplén County Forest Management Governmental Office of Borsod-Abaúj-Zemplén County Directorate of Plant and Soil Protection Mining District Authority of Miskolc Governmental Office of Szabolcs-Szatmár-Bereg County Governmental Office of Szabolcs-Szatmár-Bereg County Land Administration Szabolcs-Szatmár-Bereg County Directorate for Disaster Management Upper-Tisza Directorate of Water Management

	Governmental Office of Szabolcs-Szatmár-Bereg County Policy Administration Service of Public Health Governmental Office of Szabolcs-Szatmár-Bereg County Office for Building and Cultural Heritage Governmental Office of Szabolcs-Szatmár-Bereg County Forest Management Governmental Office of Szabolcs-Szatmár-Bereg County Directorate of Plant and Soil Protection
Romania	Ministry of Waters, Forests and Environmental Protection Documents for consultation has been posted on the website of the Ministry of Environment
Ukraine	Ministry of Ecology and Natural Resources of Ukraine