



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

**SCOPING REPORT OF
SEA**

12/03/2015

Final Draft





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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
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
HUSKROUA	Hungary-Slovakia-Romania-Ukraine
ICPDR	Strategy on Adaptation to Climate Change
IP	Investment Priority
IPPC	International Plant Protection Convention
IUCN	International Union for Conservation of Nature
JOP	Joint Operational Programme
JTF	Joint Task Force
JTS	Joint Technical Secretariat
MS	Member State
NUTS	Nomenclature of Territorial Units of Statistics
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.

SO	Specific objective
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
WFD	Water Framework Directive

1 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. It should be an integral part of the whole programming process.

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.

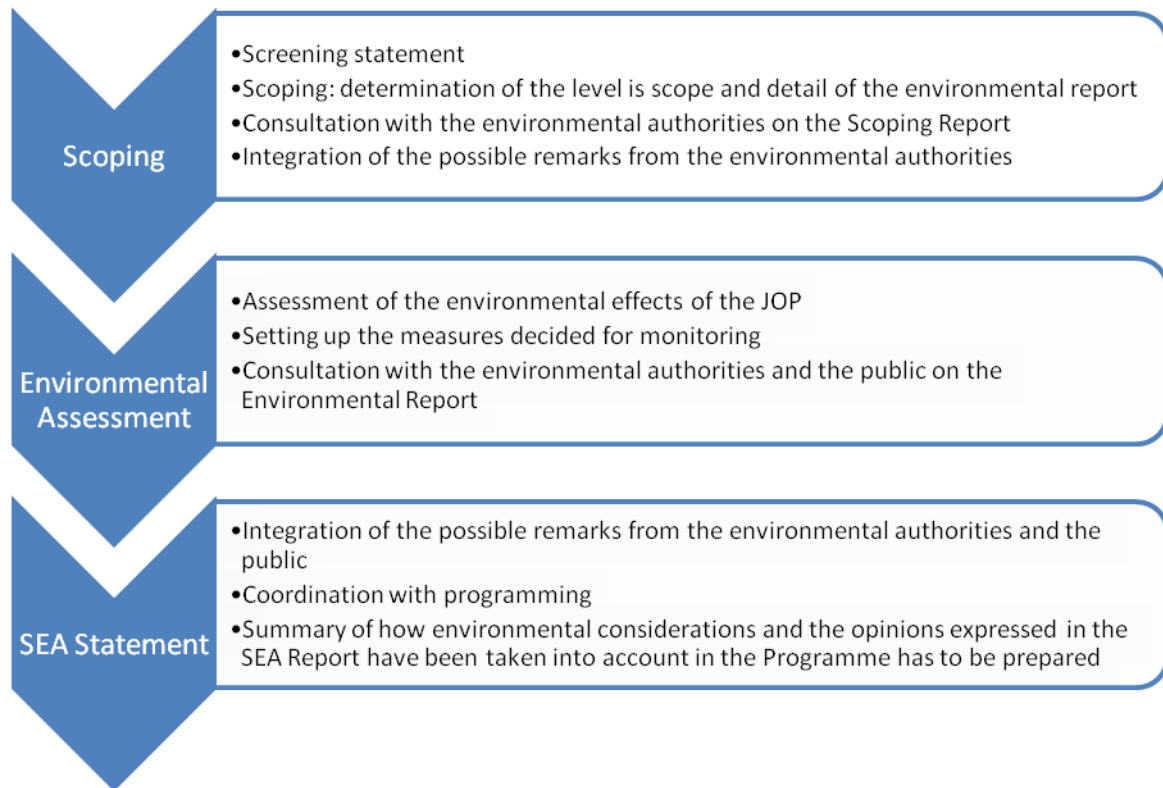
The environmental assessment shall be carried out since the characteristics of the Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020 fulfill the categories and requirements which determine the necessity for the Strategic Environmental Assessment procedure, due to the following 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 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 has to be carried out during the preparation of the programme and has to be completed before the approval and submission to the Commission in order to ensure the high level protection of the environment 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.

Purpose of the Scoping Report

The scoping is the first step within the Strategic Environmental Assessment process. The following figure represent that the Scoping has an essential role in the whole process of the Strategic Environmental Assessment:



The aim of the Scoping Report is 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 determines the framework of the environmental assessment, and also contains the statement on screening. In accordance with this thematic approach, the Scoping Report includes 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 includes detailed legislative references. While the purpose of the

Scoping Report is to determine the current environmental state and the objectives to be achieved, the relevant indicators are 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 will be available in the SEA evaluation, covering the 2014-2020 (+2 years) period.

The present report serves 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 will be made on the scope and the level of specification of the Environmental Report. The Scoping Report will be finalized on the basis of the comments received from the environmental authorities. On the basis of the comments from the authorities, clear suggestions will be given to the Joint Task Force and to the planners of the Operational Programme with the purpose to integrate the environmental considerations into the Programme for the sake of fostering sustainable development.

2 Assessment Framework

2.1 The HUSKROUA ENI CBC Programme 2014-2020

The assessment object of the SEA is the Joint Operational Programme for the 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 Scoping Report is based on the Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020 1st DRAFT Version of 15th January 2015 (JOP_DV1_15/01/2015), on the informal decision of the Joint Task Force of HUSKROUA ENI CBC Programme 2014-2020 made on web conference (20th February 2015) concerning Thematic Objectives and Investment Priorities (1st-2nd March 2015).

2.2 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.

2.3 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.

2.4 The legal frame for SEA in this programme context

2.4.1 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 Neighbourhood 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 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

2.4.2 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 and the 100/2014.

	(III.25.) Government Decision which modifies the 2/2005 (I.11) Government Decision
Slovak Republic	<u>the Act No. 24/2006 Coll.</u> 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	the Government Decision no.1076/8.07.2004. for setting up the environmental assessment procedure of certain plans and programmes “Manual on the completion of the environmental assessment for plans and programmes” – 2006, approved by Ministerial Order no. 117/2006. (other relevant normative acts: OM 480/2006, OM 995/2006)
Ukraine	Law on Environment Protection

3 The relevant environmental policy framework, the definition of the relevant environmental issues, their corresponding environmental objectives and derived guiding questions

3.1 Environmental policy framework

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)
The "Sturgeon 2020", a strategy and program for the protection and rehabilitation of the Danube sturgeons (2013)
Bern Convention
Bonn Convention
The Convention on Trade in Endangered Species of Wild Flora and Fauna (CITES, 1973)

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.)

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 2003/33 Framework 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)

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
Directive 2013/39/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)
Water Policy (2000/60/EC)
Stockholm Convention on POPs

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

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>)

3.2 Environmental issues

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 above (Chapter 6.1.).

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 considering the programme area is summarized as 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 led 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 led 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.

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.

3.3 Environmental objectives and guiding questions

Based on the identified environmental policy framework, the relevant environmental objectives have been set up for each environmental issue. 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 will be assessed by the environmental objectives and the derived guiding questions.

The table below represents the relevant environmental objectives derived from the presented framework and guiding questions for each environmental issue.

Biodiversity, flora, fauna

Possible SEA objectives

Maintain biodiversity and avoid irreversible losses.

Protection and promotion of natural habitats (e.g. within the NATURA 2000 network)

Help to decrease the fragmentation of habitat or species (both aquatic and terrestrial), promoting green infrastructures, restoration of river continuity, wetland areas which are in direct contact with aquifers.

Provide a favourable state of prevention for the protected species and the sustainable use of biodiversity

components.

Help to stop and prevent the spread of invasive alien species.

Promotion of common management off cross-border ecosystems and habitats

Guiding questions

Will the programme have an effect on NATURA 2000 sites?

Will the programme have an effect on promotion and protection of natural habitats?

Will the programme affect the decrease of habitat and species fragmentation?

Will the programme help to stop and prevent the spread of invasive alien species?

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)

Reduction of the 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?

Will the programme have an effect on the 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

Facilitating soil protection from water and wind erosion

Help to maintain 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 affect the increasing of soil quality?

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

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

Will revitalization of brownfields be supported?

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)

Maintaining and restoring ecological processes (e.g. hydrology, water quality)

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

Reducing organic, nutrient and hazardous substance pollution, prevention of accidental pollution incidents

Improvement of the ecological and chemical status of surface waters and groundwater

Improvement of waste water treatment and the reduction of nitrate pollution (e.g. nitrates from agricultural sources or industrial recharges)

Guiding questions

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

Will the programme have effect on pollution prevention and reduction on water bodies?

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?

Will the programme have an effect on the prevention from / reduction of water pollution?

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)

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

Focus on the most important factors of landscapes during 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

Ensure protection of natural and cultural landscape by revitalization of brownfields and protection of natural habitats from fragmentation due to traffic corridors

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

Creating places, spaces and buildings that work well, wear well and look well

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 from environmental noise exposure and vibration

Prevention and reduction of diseases and negative health impacts caused by environment-related threats.

Reduce existing disparities in accessibility to the essential public infrastructures (such as potable water network, sewage system including waste water treatment, as well as waste management).

Compliance of water supplies, compliance for drinking water from small supplies, and risk-based approach for more effective quality control (drinking water quality parameters and values) has to be promoted.

Facilitate improvement of human health by implementing measures aimed at pollution prevention and mitigation of old burdens

Guiding questions

Will human health be improved due to actions supported?

Will the programme have an effect on noise exposure prevention?

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?

Will the society get closer to the local environment?

Will the programme increase effectiveness of drinking water quality control 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 the need to travel.

Reduction of carbon emissions deriving from transport (by 60 % by 2050)

Promotion of environmentally sustainable transport (rail and inland navigation)

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)?

Will the programme have an effect on Promotion of environmentally sustainable transport (rail and inland navigation)?

4 An outline of the content, main objectives of the programme

4.1 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

4.2 The outline of the content of the Programme

The programme strategy involves the following thematic objectives²:

- 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

4.3 Main objectives of the programme and the activities foreseen

The selected thematic objectives comprise of the following objectives and types of actions³:

Thematic objective	Priority	The objectives of the priority	Types of actions
TO3 Promotion of local culture and preservation of historical	Priority 1: Promoting local culture and history along with	To develop the eligible area as a joint tourism destination based on its cultural,	Preservation of historical heritage includes the following types of actions: <ul style="list-style-type: none">▪ Preservation and restoration of historical buildings in accordance with monument restoration requirements.

¹Joint Cooperation Programme for the HUSKROUA ENI CBC Programme 2014-2020 chapter 3.Programme’s strategy, subchapter 3.1.1. General vision of the joint cooperation programme

²Joint Cooperation Programme for the HUSKROUA ENI CBC Programme 2014-2020 chapter 3.Programme’s strategy, subchapter 3.1.2.Selected thematic objectives

³Joint Cooperation Programme for the HUSKROUA ENI CBC Programme 2014-2020 chapter 3.Programme’s strategy, subchapter 3.1.3.Content of priorities within the selected thematic objectives

heritage	tourism functions	historical, religious values with the preservation of historical buildings	<ul style="list-style-type: none"> ▪ Surveys on buildings of cultural, historical and religious heritage. <p>Tourism services include the following types of actions:</p> <ul style="list-style-type: none"> ▪ Development of touristic destinations, thematic routes connecting historical cultural or religious heritage sites. ▪ Promotion activities and information provision on routes and attractions (including the development of maps, online information sources, information materials, signs, etc.). ▪ Organization of joint cultural events with cross-border added value linked to historical heritage. ▪ Support of the production of traditional local (handicraft, (organic) agricultural) products at touristic sites. ▪ Creating cross-border standard of services. ▪ Exchange of experiences among organizations related to cultural religious and historic heritage. ▪ Training for locals in tourism, cooperation, promotion and networking.
TO 6 Environmental protection, climate change mitigation and adaptation	Priority 1: Support of sustainable waste and wastewater management systems	To support the solution of wastewater and solid waste caused environmental damages with cross border effect. The focus areas are especially the river valleys crossing the border with risk of contamination.	<p>Types of actions related to wastewater treatment:</p> <ul style="list-style-type: none"> ▪ Sharing of best practices, setting up of small scale pilot systems. ▪ Surveys on water quality problems of river basins crossing the border. ▪ Setting up of water quality monitoring systems. <p>Types of actions related to waste management:</p> <ul style="list-style-type: none"> ▪ Awareness campaigns. ▪ Sharing of best practices, setting up small scale pilot systems.
	Priority 2: Preservation and sustainable use of natural resources	To initiate actions for the sustainable use of natural values passing over state borders of the	<p>Types of intervention are:</p> <ul style="list-style-type: none"> ▪ Development of natural parks and forestry management systems with cross border effect. ▪ Protection of landscape, biodiversity and

		border area.	eco-systems. <ul style="list-style-type: none"> Protection of water resources. Joint ecological education programmes. Co-operation between institutions, authorities and civil organizations for the sustainable use of natural resources. Harmonization of relevant regulations.
	Priority 3: Support to energy efficiency and the use of renewable energy resources	To increase the energy efficiency of buildings, industrial and agricultural production in the border region and increase competences in the use of renewable energy sources.	Types of actions in the frame of the priority: <ul style="list-style-type: none"> Promotion of measures to increase 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 fields of eco-innovation and for low-carbon solutions. Harmonization of local renewable energy production strategies for biomass, water and geothermal.
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: <ul style="list-style-type: none"> Building, modernization and upgrading of roads leading to and crossing the border to improve the opportunities for transboundary mobility. Building, modernization and upgrading of bicycle paths, routes leading to and crossing the border. Development of cross-border public transport initiatives, harmonization of systems. Awareness-raising activity regarding the importance of environment-friendly transport system (low emission and low noise forms of cross-border transport). Development of IT solutions for public transport facilities. Elaboration of recommendations concerning legal administrative bottlenecks hampering cross-border mobility.
	Priority 2:	To increase the	Types of actions in the frame of the priority: <ul style="list-style-type: none"> Development of cross-border broadband

	Development of ICT infrastructure and information sharing	penetration of information communication tools and help the share of information among the citizens, institutions and businesses of the border region.	internet infrastructure and communication centres. <ul style="list-style-type: none"> Development mutually usable local media content and related media production capacities.
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	To create technical background, strategies and co-operation platforms for the prevention and handling of natural and man-made disasters may risk the citizens of the border area.	Types of actions in the frame of the priority: <ul style="list-style-type: none"> Harmonizing activities in the field of flood prevention, development of flood prevention infrastructure. Setting up joint early warning systems for fire, avalanches, or other natural disaster incidents. Strategic and technical planning and establishment of joint monitoring systems on environmental (air, water, soil) pollutions. Increasing awareness and knowledge and developing skills to develop local and regional strategies to prevent and mitigate the impact of global climate change. Support/cooperation/network of non-governmental 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: <ul style="list-style-type: none"> 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.

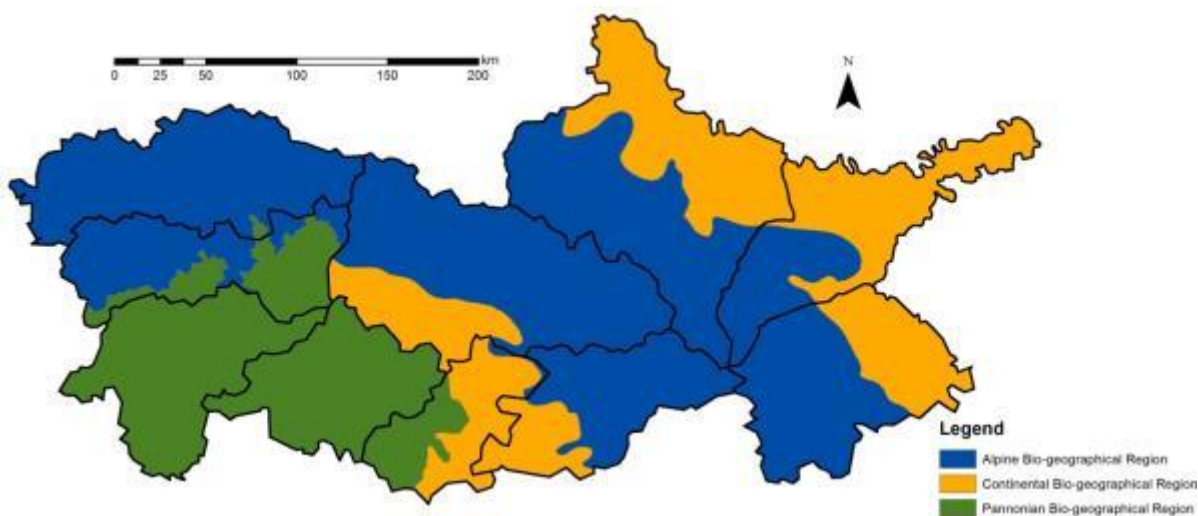
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| | | | <ul style="list-style-type: none">▪ Improvement of social care services infrastructure. |
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5 Characteristics of the current state of the environment

5.1 The outline of the programme area from environmental point of view

5.1.1 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.

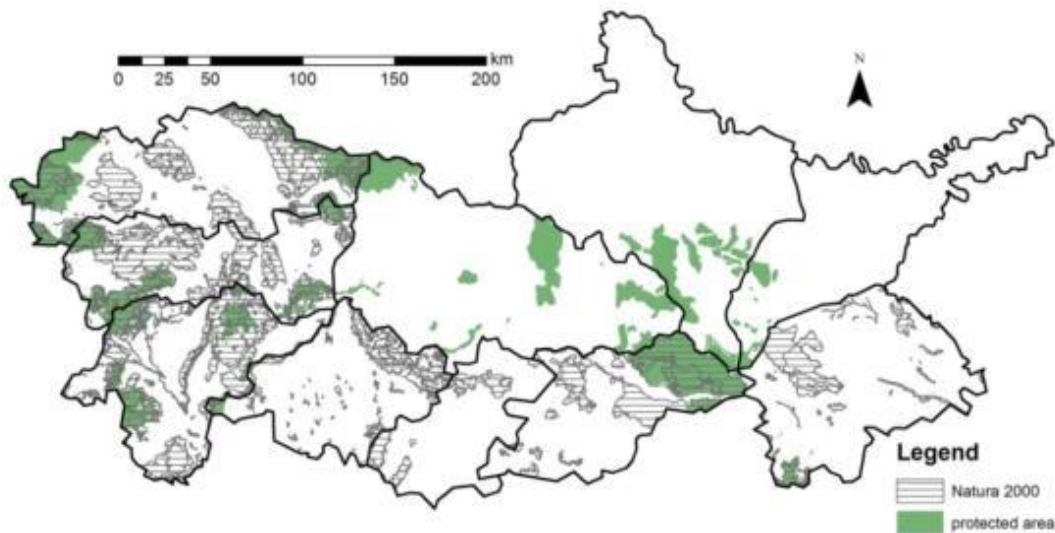


Map 1 – Bio-geographical regions in the eligible area (data source: EEA)

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 (*Ursus arctos*), 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 (*Strix uralensis*). 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 (*Crex crex*), white stork (*Ciconia ciconia*), and red-backed shrike (*Lanius collurio*)). 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 Carpathian National Nature Park (Ukraine), Synevyr National Park (Ukraine), Uzhanskyi National Park (Ukraine), ZacharovanyjKraj National Park “Enchanted Land” (Ukraine), the Maramureş 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 Heritages⁴ 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 and the 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 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

⁴www.unesco.org

(*Duvalius hungaricus*), cave woodlice (*Mesoniscus graniger*), niphargus from Aggtelek (*Niphargus aggtelekiensis*). Bats are important animals in the caves (lesser horseshoe bat (*Rhinolophus hipposideros*), greater horseshoe bat (*Rhinolophus ferrumequinum*)) 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 (*Ursus arctos*), European bison (*Bison bonasus*), lynx (*Lynx lynx*) and over 100 species of birds live in the area e.g. the black stork (*Ciconia nigra*).

According to Kadlečík (2014) the Carpathian list of invasive alien species includes 77 taxa⁵. From the 37 plant species, 32 are herbs and 5 woody plants. Majority of animal species are invertebrates, 14 arthropods and 11 molluscs are listed. The most numerous group of invasive vertebrates are fishes (with 10 species on the list).

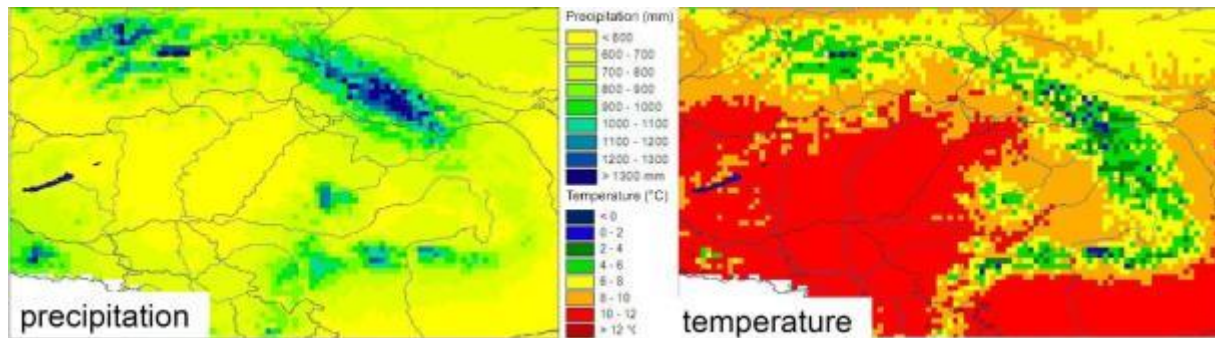
The biodiversity and natural heritage face to several threats and adverse impacts of anthropogenic and of natural origin. Land abandonment, habitat degradation, conversion and fragmentation, deforestation, the diminishing population of small settlements, industrialisation, pollution, urbanisation and 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.

5.1.2 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 with lower precipitation amount and higher temperature, compared to the mountains. The driest and warmest region is the Pannonian 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

⁵Kadlečík, J. (2014). Carpathian list of invasive alien species. State Nature Conservancy of The Slovak Republic ISBN 978-80-89310-81-4

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 1961-2010⁶

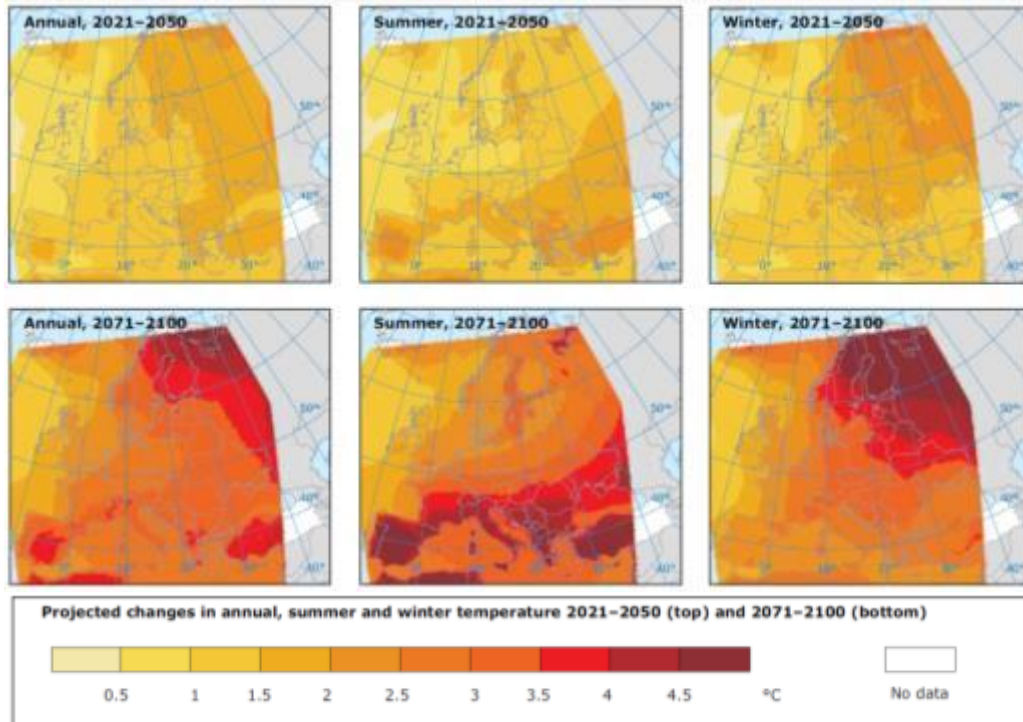
Due to climate change in the past 50 years (1961-2012 significant warming has been observed in the region. The rate of warming was 0.2-.25 °C/decade (overall 1-1.25°C for 50 years). Extreme high temperatures, for example number of warm days (by 6-7 days/decade) and nights and heat waves, have become 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 region⁷ 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)⁸.

⁶Lakatos, 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

⁷ESPO Climate.Climate Change and Territorial Effects on Regions and Local Economies.ESPO & IRPUD, TU Dortmund, 2011. www.espon.eu

⁸Climate 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 increase⁹. 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 2080s increases by 10-20 %, and only on the Slovakian sections of the rivers it will not increase¹⁰.

⁹ESPON Climate.Climate Change and Territorial Effects on Regions and Local Economies.ESPON & IRPUD, TU Dortmund, 2011. www.espon.eu

¹⁰Climate change, impacts and vulnerability in Europe 2012 An indicator-based report, EEA, Copenhagen, 2012

Floods originating from snowmelt can occur earlier¹¹. 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.¹²

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 Ukraine¹³ (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 observed¹⁴. 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).



¹¹Novaky, B. 2011: Az éghajlatváltozás és hatásai. In. Somlyódi, L. (ed.) Magyarország vízgazdálkodása: helyzetkép és stratégiai feladatok. MTA, Bp. 85-102.

¹²Jurek, M., Crump, J., Maréchal, J. (2014). Future imperfect. Climate change and adaptation in the Carpathians. http://www.carpathianconvention.org/tl_files/carpathiancon/Downloads/04%20Publications%20-%20Press%20-%20Gallery/Documents%20and%20Publications/FutureImperfect_lo.pdf

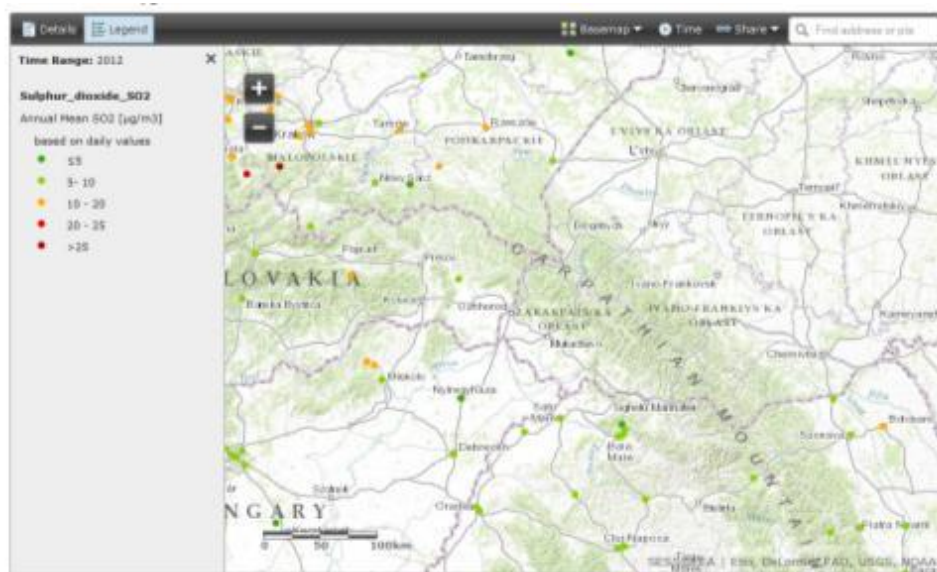
¹³Summary of GHG Emissions. United Nations, Climate Change Secretariat; <http://unfccc.int>

¹⁴Kozak J., Björnson Gurung A. & Ostapowicz K. (eds.): Research Agenda for the Carpathians: 2010-2015. Kraków, 2011. http://www.forumcarpathicum.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 $\mu\text{g}/\text{m}^3$ (source: EEA, AirBase v.8).



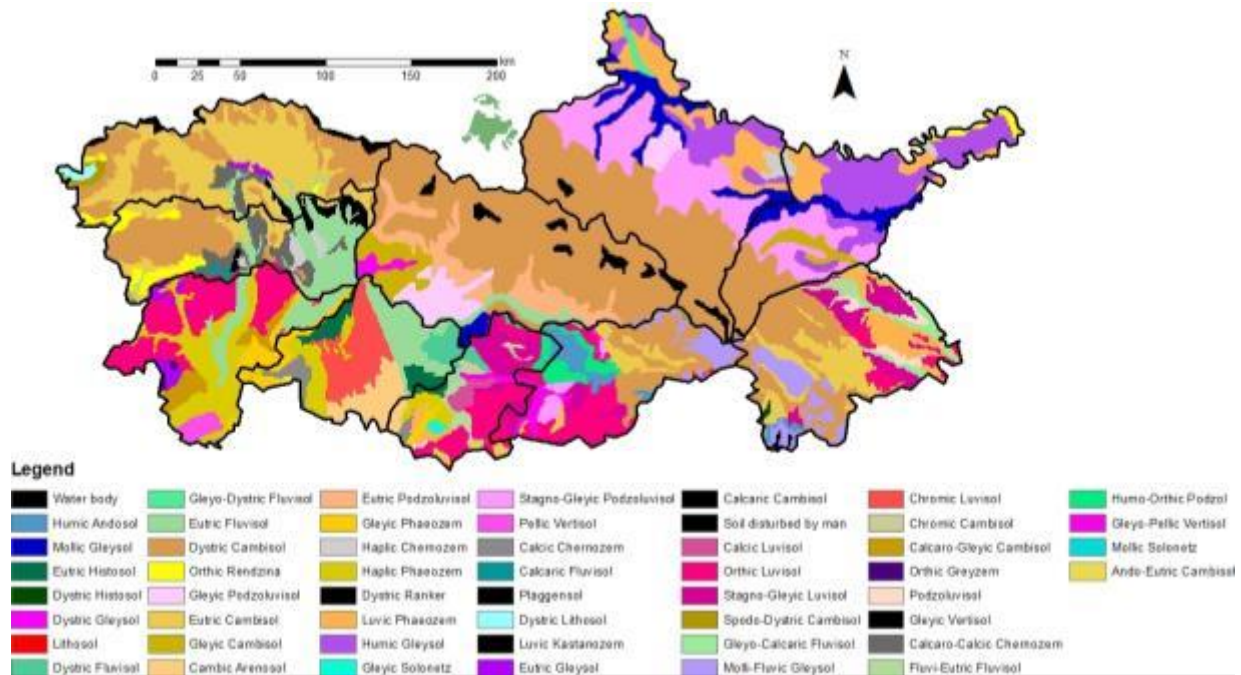
Map 6 -Annual mean concentrations of Nitrogen-dioxide (NO_2) based on daily averages in 2012 with at least 75% of valid measurements, in $\mu\text{g}/\text{m}^3$ (source: EEA, AirBase v.8).



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

5.1.3 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 processes¹⁵ 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 area¹⁶. In Ukraine soil monitoring has also been initiated in the past decade¹⁷.

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.

Waste production and waste management can highly contribute of soil quality and land management. According to statistical data of 2013¹⁸, the generated municipal solid waste per year per capita was between 194 and 272 kg in the Hungarian and the Slovak Counties. The lowest

¹⁵Tóth, G.,Montanarella,L., Rusco, E. (2008). ThreatstoSoilQualityin Europe. European Comission, JRC, ISBN 978-92-79-09529-0.

¹⁶<http://eussoils.jrc.ec.europa.eu>

¹⁷<http://eng.menr.gov.ua/index.php/monitoring>

¹⁸Hungarian Central Statistical Office 2013, Statistical Office of the Slovak Republic 2013

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 report¹⁹, 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 years²⁰ that is below the production of the other counties. For Chernivetska, 244.75 kg/year/capita municipal waste production for 2011 was reported²¹ 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 indicators²², the recycling rates of municipal waste and waste treatment are increasing continuously especially in Hungary and Slovakia. These ratios are less in Romania and Ukraine²³ at present.

Sewage drainage system availability is the highest for the Hungarian and Slovak regions, varying between 59.8 and 71.3%²⁴. In case of Romanian counties, it was between 52.6 and 73.3% in 2011²⁵. The level of sewer coverage of the settlements in Ivano-Frankivska and Chernivetska Regions in 2011 is 4 and 6.2%²⁶ 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 %²⁷.

5.1.4 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 Prešovský belongs to the Dunajec catchment. The area of Zakarpatska county in Ukraine also belongs to the Tisa catchment, covering 12,732 km²²⁸, while the eastern part of the area belongs to the catchments of the Prut (catchment area in Ukraine: 9168,25 km²²⁹) and Siret (Duna) and to the catchment of the Dnister.

¹⁹Almasi, A.M. (2013). Municipal waste management in Romania. Copenhagen Resource Institute.

²⁰StatisticalYearbook of Ukraine, 2013

²¹A 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

²²<http://www.eea.europa.eu/soer/countries/>

²³StatisticalYearbook of Ukraine 2013, State Statistical Service of Ukraine

²⁴Hungarian Central Statistical Office 2013, Statistical Office of the Slovak Republic 2013

²⁵National Institute of Statistics 2011 (Romania)

²⁶A Pressure-ImpactAnalysis/RiskAssessmentAccordingtothe EU WFD. Development Of DraftRiverBasin Management PlanForSelected Pilot BasinInUkraine - The Prut Basin

²⁷TICAD TisaCatchmentAreaDevelopment, National Study, Ukraine, 2010.

²⁸vanNood, 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

²⁹A Pressure-ImpactAnalysis/RiskAssessmentAccordingtothe EU WFD. Development Of DraftRiverBasin Management PlanForSelected Pilot BasinInUkraine - The Prut Basin

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 mining³⁰. 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 consequences³¹. The Ecological status of Surface Water Bodies in the region is mainly Moderate, on some upstream section of the rivers it is Good³². 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.

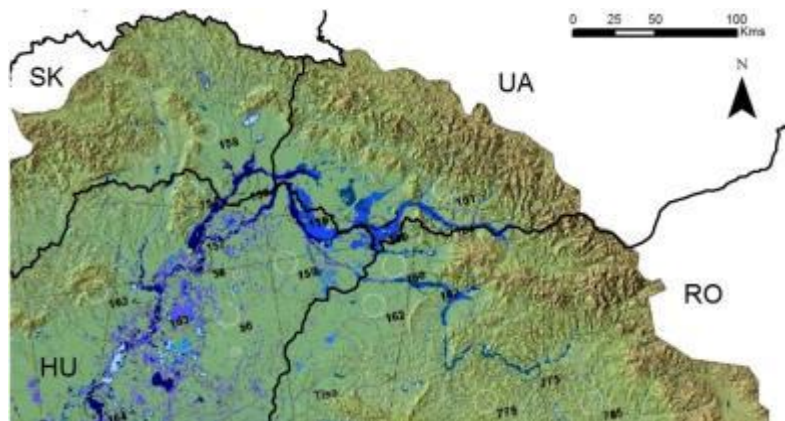
Floods originating from snowmelt accompanied with rainfall typical for major rivers with headwaters in high mountains occur usually in late winter or early spring months, in February-April. Another flood hazardous period is summer due to intensive precipitation events. River engineering (river regulation 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 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

³¹Integrated Tisza River Basin Management Plan ICPDR / International Commission for the Protection of the Danube River / www.icpdr.org

³² DRBM Plan 2009

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)³³

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 not available, 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 2006³⁴

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)³⁵. 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 water quality and envisage further cooperation in protecting the valuable environment of the basin³⁶. 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.

³³Dajka István (2013): A Felső-Tisza árvízvédelmi helyzete az új mértékadó árvízszintek tükrében. XXXI. Országos Hidrológiai Vándorgyűlés Gödöllő, 2013. július 3-5.

³⁴<http://www.icpdr.org/main/activities-projects/tisar-2007-development-tisza-river-basin-management-plan>

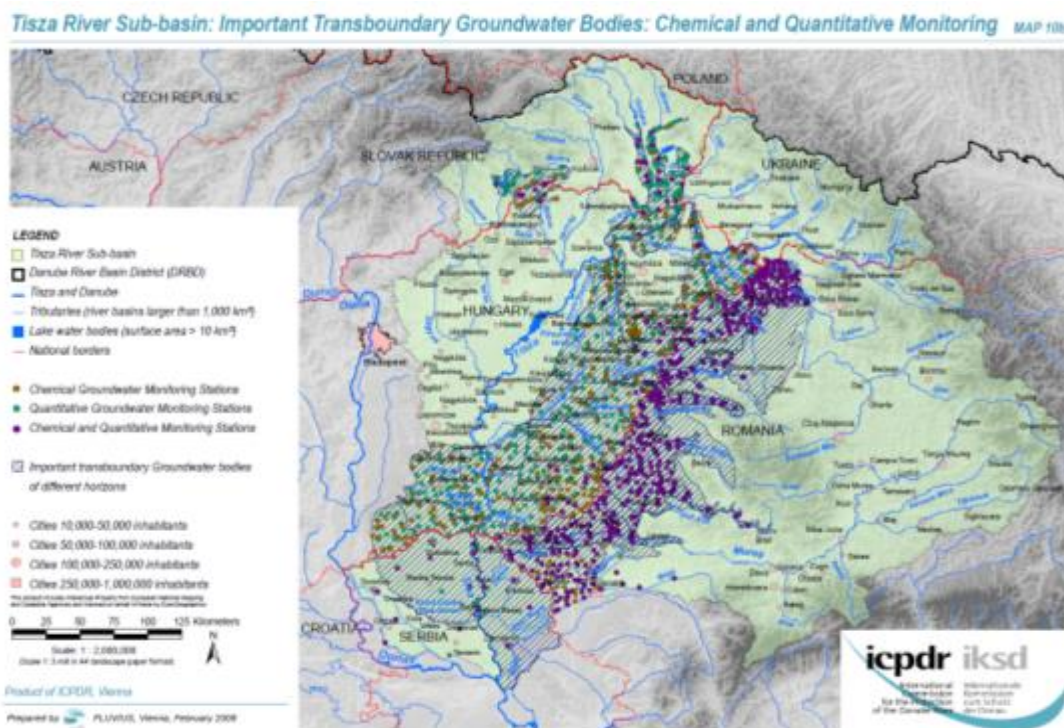
³⁵Initialsteptowardthe Tisza RiverBasin Management Plan – 2009(Annexes)http://iwlearn.net/iw-projects/2617/maps_graphics/Map_04_07_15-23.pdf/view

³⁶<http://www.icpdr.org/main/publications/joint-commitment-tisza-river-basin-good-water-quality-all-tisza-countries>

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 vulnerable³⁷.



Map 11 -The important transboundary groundwater bodies and the locations of chemical and quantitative monitoring stations³⁸

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

³⁷<http://www.icpdr.org/main/activities-projects/danube-river-basin-management-plan-2009>

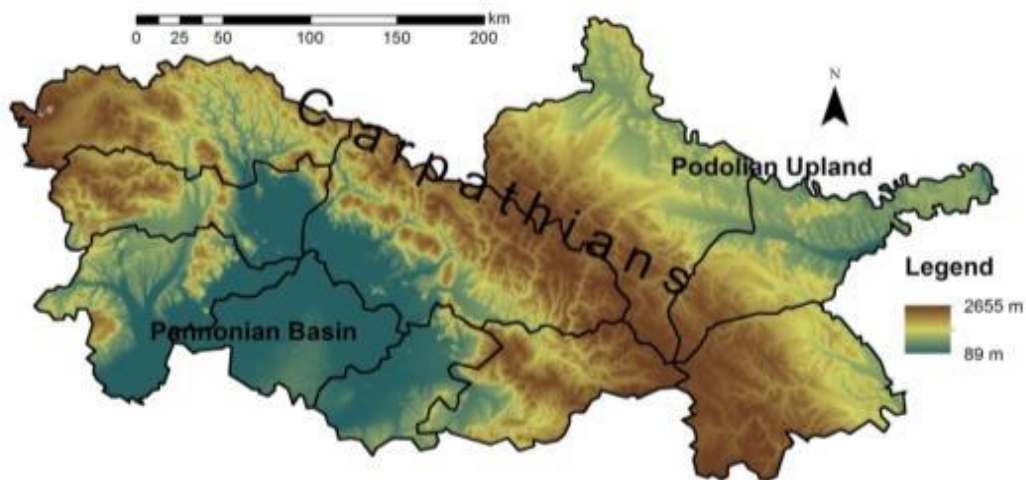
³⁸<http://www.icpdr.org/main/activities-projects/tisza-2007-development-tisza-river-basin-management-plan>

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 sources³⁹).

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 2011⁴⁰. For Ukrainian regions, only data for the Zakarpatska region is available (59.7%)⁴¹, and based on this data, the state of drinking water systems' availability is similar to the Romanian counties.

5.1.5 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), PietrosulRodneiPeak (Romania, 2303 m), GerlachPeak (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.



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

The spectacular geo-morphological forms are coming from 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,

³⁹TICAD, TisaCatchmentAreaDevelopment National Study, Ukraine 2010.

http://www.vati.hu/files/articleUploads/21356/Ukraine_nat_analys_31.11.2010.pdf

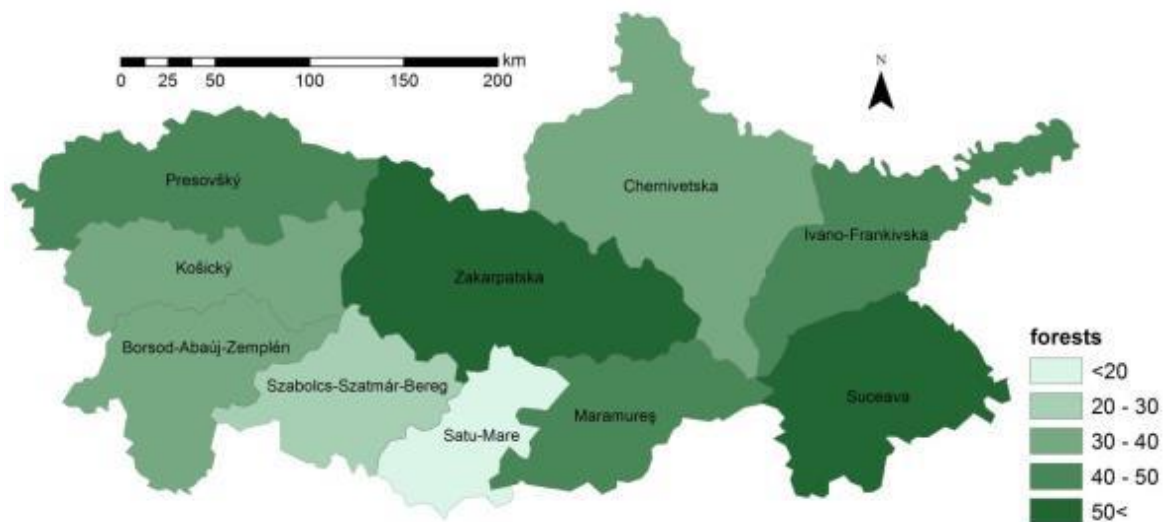
⁴⁰HungarianCentralStatistical Office 2013, Statistical Office of theSlovakRepublic 2013, National Institute of Statistics 2011 (Romania)

⁴¹TICAD, TisaCatchmentAreaDevelopment National Study, Ukraine

2010.http://www.vati.hu/files/articleUploads/21356/Ukraine_nat_analys_31.11.2010.pdf

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 Szabolcs-Szatmár-Bereg 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 Sucaeva 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.

5.1.6 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 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. More than 200 museums (80 in the Hungarian, 71 in Romanian, 23 in the Slovakian and 50 in the Ukrainian counties)⁴² are operating in the eligible area presenting valuable historical and cultural heritage.

Winter tourism

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

⁴² Hungarian Central Statistical Office 2013, Statistical Office of the Slovak Republic 2013, National Institute of Statistics 2011 (Romania), Statistical Yearbook of Ukraine, 2013

Rural tourism is among the most dynamic types of tourism. It provides economic 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 protection is 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 tourism 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 Republic⁴³. 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 heritages⁴⁴:

- 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.
- 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.

⁴³http://www.carpathianconvention.org/tl_files/carpathiancon/Downloads/03%20Meetings%20and%20Events/Working%20Groups/Spatial%20Planning/200805_Strategic%20Workshop%20on%20Spatial%20Planning/7VAS ICA.pdf

⁴⁴www.unesco.org

- **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 Andrásy-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 is complementing 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 conditions are mainly inappropriate. In Romania, the number of important castles is lower and they are mainly in bad condition.

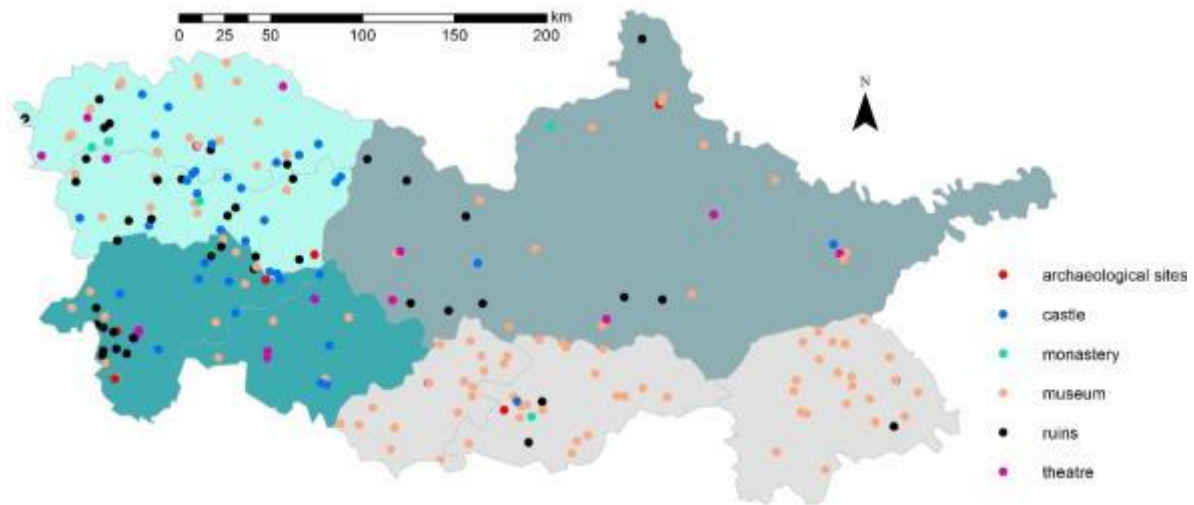
In the region several other thematic routes have been established during the past decade, guiding the tourists to discover the cultural, historical and natural heritages and features of the region. 'Plum Route' in Satu Mare and Szabolcs-Szatmár-Bereg counties was established to present local plum, as a traditional gastronomic value of the region (plum jam, plum palinka). The 'Route of Medieval Churches'⁴⁵ 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 focus 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 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

⁴⁵<http://www.temple-tour.eu/uk/churchroad>

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.openstreetmaps.org)

5.1.7 Population and human health

The territory of the eligible area is approximately 83.000 km², being the cross-border area of Ukraine, Slovakia, Romania and Hungary. The 10 counties forming the area together 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 counties⁴⁶.

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)⁴⁷. 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

⁴⁶ Hungarian Central Statistical Office 2013, Statistical Office of the Slovak Republic 2013, National Institute of Statistics 2011 (Romania), Statistical Yearbook of Ukraine, 2013

⁴⁷ http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=une_rt_a&lang=en

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 in all 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)⁴⁸ while in the other countries' figures are also quite depressing (Romania: 71 yrs, Hungary: 71.6 yrs and Slovakia: 72.5 yrs)⁴⁹.

The death rate of a population due to AIDS (HIV-disease) in 2011 was much lower than the EU28 (1.49/100 000 inhabitants) The average 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.⁵⁰ 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 2013.⁵¹ 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 average⁵², while much lower values were reported in the Ukrainian counties (155-180)⁵³. 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 13⁵⁴

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.*

⁴⁸ Statistical Yearbook of Ukraine, 2013

⁴⁹ <http://ec.europa.eu/eurostat/web/population-demography-migration-projections/deaths-life-expectancy-data>

⁵⁰ eurostat <http://ec.europa.eu/eurostat/web/health/causes-death/data>

⁵¹ 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

⁵² eurostat <http://ec.europa.eu/eurostat/web/health/causes-death/data>

⁵³ Statistical Yearbook of Ukraine, 2013

⁵⁴ <http://databank.worldbank.org>

In the other Ukrainian counties it was only 4 and 6.2%⁵⁵. 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 2011⁵⁶.

5.1.8 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 31,600kW⁵⁷. Snyatin HPP (800kW capacity) is located on the Prut River, Yablunitsa HPP (100 kW) and Probiynovka HPP (1200 kW) operate on Prut River tributaries⁵⁸. Increasing interest in small HPPs has been experienced in 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 m³ water/year and produce an annual 1,884,589 MWh⁵⁹. 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 2%)⁶⁰. 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.

⁵⁵ 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

⁵⁶ Hungarian Central Statistical Office 2013, Statistical Office of the Slovak Republic 2013, National Institute of Statistics 2011 (Romania)

⁵⁷ <http://www.icpdr.org/main/danube-basin/tisza-basin>

⁵⁸ 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

⁵⁹ <http://www.icpdr.org/main/danube-basin/tisza-basin>

⁶⁰ Energy Policies of IEA Countries. Slovak Republic Report 2011.

http://www.iea.org/publications/freepublications/publication/Slovak2012_free.pdf

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% ⁶¹. 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 to Ukraine; 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 ⁶²

The sectorial (electricity, heating and cooling, and transport) and overall shares of energy from renewable sources in 2012⁶³

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 century⁶⁴. 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 technologies⁶⁵. Several technologies available and applied today (e.g. low-emission buildings, electric cars) but further steps are required.

⁶¹EnergyPolicies of IEA Countries. Hungary Report 2011.

http://www.iea.org/publications/freepublications/publication/hungary2011_web.pdf

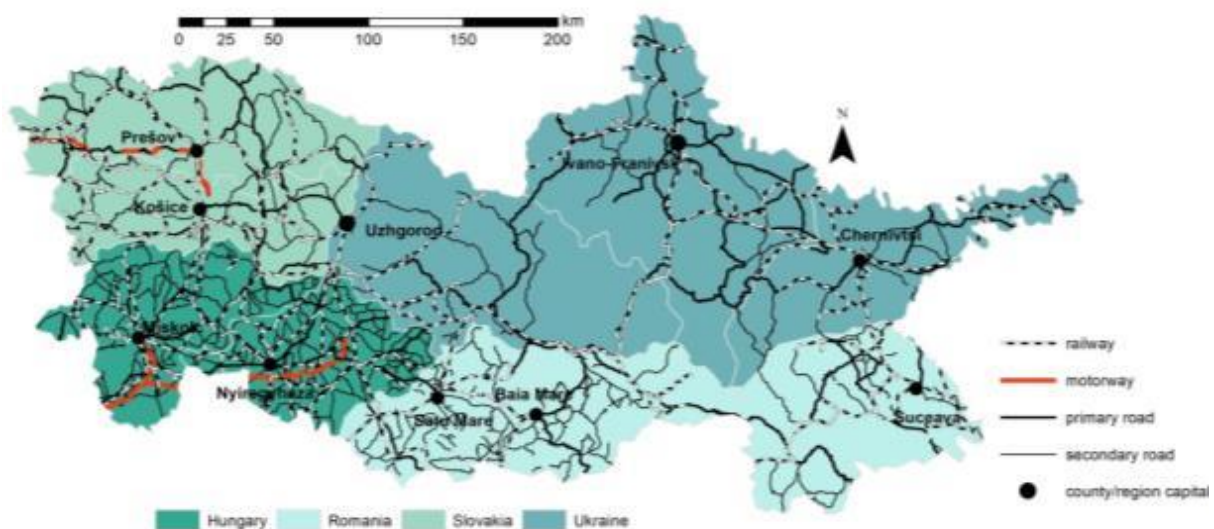
⁶²https://www.energy-community.org/portal/page/portal/ENC_HOME/AREAS_OF_WORK/Implementation/Ukraine/Statistics

⁶³BasedonMemberstatesProgressReports<https://ec.europa.eu/energy/node/70>

⁶⁴Communication from the 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.

⁶⁵http://ec.europa.eu/clima/policies/roadmap/index_en.htm

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) have increased in the eligible area in the past years, which contribute to the development of tourism and healthier lifestyle as well.



Map 16 -Railways and roads in the counties/regions of the eligible area (data source: www.openstreetmaps.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, respectively⁶⁶. Modern ICT technologies can provide common communication platform in the region.

5.2 Identified environmental problems

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

Biodiversity, flora, fauna

⁶⁶<http://databank.worldbank.org>

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. 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

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 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.

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 be taken 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 region through 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

6 Determining the likely significance of effects of the Programme

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.

According to the characteristics of the HUSKROUA ENI CBC Programme 2014-2020:

- the degree to which the plan or programme sets a framework for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources:	considerably
- the degree to which the plan or programme influences other plans and programmes including those in a hierarchy:	even tempered
- the relevance of the plan or programme for the integration of environmental considerations in particular with a view to promoting sustainable development:	considerably
- environmental problems relevant to the plan or programme:	to a high degree
- the relevance of the plan or programme for the implementation of Community legislation on the environment (e.g. plans and programmes linked to waste-management or water protection):	facilitates this type of implementation

According to the characteristics of the effects:

- the probability, duration, frequency and reversibility of the effects:	widely
- the cumulative nature of the effects:	widely cumulative
- the transboundary nature of the effects:	in respect to the Participating Countries
- the risks to human health or the environment (e.g. due to accidents):	risk exists
- the magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected):	widely
- the effects on areas or landscapes which have a recognized national,	interventions may

community or international protection status:	affect protected areas
According to the value and vulnerability of the programme area – likely to be affected:	
- due to the specific natural characteristics or cultural heritage:	such areas may be affected
- due to the exceeded environmental quality standards or limit values:	such areas may be affected
- due to intensive land use (such as areas of intensive agricultural or forestry growing, production, areas with dense population, etc.):	such areas may be affected

The Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020 puts the main focus on the protection of the environment and meeting climate change challenges, as well as on the support of transport, research and technological developments. The potential impacts are referring also to environmental purposes and to sustainable development.

7 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.

7.1 SEA Procedure

The methodological approach for the strategic environmental assessment process 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 is set whether the programme will have significant environmental effects. The Screening Statement is part of the Scoping Report and will be 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 should be 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 is imperative regarding the features of the final result. The concerned environmental authorities shall be consulted at this stage. The Scoping should response 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 are required by the Directive and the national legislations, and should be based on the strategy and areas of intervention. All Participating Countries should confirm 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 should take place in consultation with the environmental authorities. All Participating Countries should confirm the proposed SEA procedure – or clearly give alterations – that 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 Report has to be 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 will be 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 which can be 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 will be a joint Report for the whole programme area. The Environmental Report will present 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 will be carried out.

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

The Environmental Report will be available for consultation at the same time with the draft Operational Programme (SEA Directive - Article 6.2 and Annex 1). Subsequent to the consultation responses collected, an explanation shall be given on how the Environmental Report and consultation comments have been taken into consideration in the 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 will be 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. The consultation bodies may also suggest SEA objectives.
5. **Coordination with programming** regarding the proposed measures decided for monitoring: The elaboration needs a very close cooperation with the planners of the JOP, as the relevant comments and suggestions derived from the SEA must be 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 to be 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 should be integrated into the OP, how the Environmental Report and the results of consultations (with the public, the environmental authorities, and the public in other Participating Countries where relevant) should be taken into account.

The strategic environmental assessment process is planned according to the following – with timeframe foreseen, milestones and output documents:

Steps of the SEA procedure	Timeframe foreseen	Documents for the undertaken steps and milestones (bolded)
Identification of the relevant environmental authorities in the Participating Countries	9 th week of 2015 (app. 23 rd February)	Identified environmental authorities for consultation acts
Screening (to decide whether SEA should be undertaken). Scoping (selection of SEA objectives). The Screening statement will be incorporated into the Scoping Report. Preconditions for the Scoping: <ul style="list-style-type: none"> Accepted programme objectives (TOs and priorities) Draft territorial analysis on the programme area. 	In case the proposed web-conference takes place and the necessary decisions are made during 8th week of 2015 (20 th February) 9 th week of 2015 (app. 23-24 th February)	Scoping Report Screening statement incorporated into the Scoping Report
Approval of the Scoping Report by the JTF	11 th week of 2015 (foreseen by 10 th March)	Decision on the Scoping Report
Consultation on the Scoping Report with the relevant environmental authorities in the Participating Countries	Between 11 th and 15 th weeks of 2015 (app. from 10 th March to 10 th April)	Invitation and notification letter for environmental authorities and responsible departments of ministries in the Participating Countries with the availability of the Scoping Report Received comments
Finalization of the Scoping Report	16 th week of 2015 (foreseen by 17 th April)	Final Scoping Report including the summary of the received comments Archive comments
Preparation of the Environmental Report Precondition: <ul style="list-style-type: none"> Final draft JOP (Strategy, description of the priority axes, focus and indicative actions, indicators, horizontal principles) 	In case the Final draft JOP is done by the end of March Between 16-19 th weeks of 2015 (app. 15 th April – 10 th May)	Final Draft CP 1 st draft of the Environmental Report
Approval of the Environmental Report by the JTF	22 th week of 2015 (foreseen by 29 th May)	Final draft of the Environmental Report Decision on the Environmental Report
Consultation on the Environmental Report with the relevant environmental authorities and the public in the Participating Countries	Between 23-27 th weeks of 2015 (app. 1 st June – 30 th June)	Invitation and notification letter for environmental authorities and responsible departments of ministries in all countries with

		<p>the availability of the Environmental Report , the draft CP and the non-technical summary</p> <p>Invitation e-mail to stakeholders</p> <p>Availability of the documents for the wider public on the programme’s website and official websites for public consultation in the ParticipatingCountries</p> <p>Received comments from environmental authorities, stakeholders and the public</p>
Measures decided for monitoring	28 th week of 2015 (foreseen by 10 th July)	Finalised monitoring measures
Coordination with programming	28 th week of 2015 (foreseen by 10 th July)	Responses of the programming consultant on the proposed environmental measures and the possible modifications in the JOP according to the SEA recommendations
Finalization of the Environmental Report, elaboration of the SEA Statement	28 th week of 2015 (foreseen by 10 th July)	<p>Final Environmental Report including the summary of the received comments</p> <p>Archive comments</p> <p>Conclusion and opinions expressed during the consultation</p> <p>A summary how the environmental considerations have been integrated into the programme and how the Environmental Report results and consultations have been taken into account</p> <p>The non-technical summary of the information provided in the Environmental Report</p> <p>Official statement</p>

7.2 Methodological tools

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 in the cooperation space are implemented?”

Comparison of trend in “zero option” and programme impact

The description of the status quo ante and the development trend results from a comparison of the zero option and the programme impact. This has to be elaborated by means of an analysis of the

present situation and the description of the possible development based on reasonable assumptions. The comparison will be presented in the following way:

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	„Zero option“ – without the implementation of the Programme	Trend in „zero option“	Development with the programme	Trend with the development of the programme
Biodiversity, flora and fauna NATURA 2000				

Impact assessment

The environmental impact of the Programme will be assessed in case of each identified environmental issue and related to the selected thematic objectives and priorities.

In the impact matrix the environmental objectives determined in the 1st step of the investigation process mean the columns of the table in a simplified, short version. The lines are created on the basis of the thematic objectives of the JOP. Each matrix field shows if a certain objective impacts on any of the issues and the intensity and direction of their relationship. Impact matrices have to meet the requirement of clarity, their main flaw in general being the over complexity of the relationship indications. Since the matrix is indicative primarily, very often, the explanation of the fields cannot be omitted, the indications only need to show the direction and strength of the relationships.

		Environmental objectives related to environmental issues									
		Soil and geological medium	Biodiversity, flora, fauna NATURA 2000	etc.							
Thematic objective											
Priority Axis											

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

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.

We need to pay increased attention 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 we outline the alternatives that can be applied to strengthen positive investment impacts and to mitigate potential negative environmental impacts.

Description of impacts and measures

Furthermore, presumably considerable impacts on the environment need to be elaborated and the proposed measures need to be presented with special focus on key findings and recommendations. Recommendations are designed to prevent, reduce and compensate as far as possible for the considerably harmful environmental impacts. This step will be carried out at the level of single priorities.

Priority axis: Nr. X Investment priority: X.X		
Biodiversity, flora, fauna, NATURA 2000:	Air and climate factors:	Soil and geological medium:
Water (ground water, surface water):	Landscape and land cover:	Material assets, cultural heritage:
Population and human health:	Energy consumption, use of renewable, traffic and transport:	

Findings - description of the likely considerable impacts on the environment:

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

The Legend is the same as in case of the impact matrix.

Monitoring measures

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

The guiding questions for each environmental issue are derived from the environmental protection objectives derived from environmental policies at EU and national level. Monitoring measures need to be set up. 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. In order to provide the services in an efficient and sustainable way and to assure a high quality, the used indicators should be closely interlinked with the existing databases. The table below shows the concerned protected goods, environmental objectives and derived guiding questions, with the proposed monitoring indicators.

Environmental issue	Relevant environmental objectives	Derived guiding questions	Indicative Monitoring indicators
	+		e.g. number of generated projects

As a general rule and with the purpose to avoid confusion and duplication the indicators proposed for the programming document will be analyzed first from environmental point of view, whether they are relevant for the environmental issues, environmental objectives and guiding questions. The Environmental Report will propose additional environmental indicators in case of those environmental objectives that are not covered by programme indicators.

In case of indicators proposed for monitoring the significant environmental effects, the following details will be given:

- Measurement unit
- Frequency of reporting
- Baseline
- Target
- Source of data
- Data provider
- Specific source for providing the necessary data

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: 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 B: the environmental report

- the chapters of the Environmental Report will fully follow the Annex 1 of the SEA Directive

- the Environmental Report will include a description of the public consultation and will describe the consultation process to be 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” present 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 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 OP 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.

7.3 Data basis and depth

Information needs to be collected in the frame of the environmental assessment to identify the environmental issues and trends that characterize the eligible area of the Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020. This provides the bases for identification and monitoring of environmental effects of the programme. The data used in the Environmental Report will be based on statistical sources.

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

The data collection is 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 can be applicable (e.g. national statistical office). Former contains mainly national data, while the latter can be used to gain regional/territorial information on the relevant eligible area.

In the non-member state (Ukraine) the national statistical data will be 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 are 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 will provide the quantified information, the target or comparator value, and the source of information for the indicators.

7.4 Consultation process within the Strategic Environmental Assessment

Within the SEA procedure related to the Joint Operational Programme for the HUSKROUA ENI CBC Programme 2014-2020 the involvement of the relevant environmental authorities and the public will be carried out through two consultation actions:

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

Aspects on which the consultation process lays special stress:

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

Steps of the consultation process:

- Notification to be 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 is necessary on the opening of the consultation process
- The draft Scoping / Environmental Report and the CP draft as well as an announcement document will be published on the Programme's website by the future MA

Technical information to be applied under the consultation steps:

- The documents will be available in English language and in PDF format.
- The Programme's website where the documents will be available:
- Comments could be sent to the following e-mail address:
- Environmental authorities have 30 days to send their remarks in English language.
- Whilst the Scoping Report and the Environmental Report will be 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 will be made separately in every Participating Country.
- The Environmental Report will be available for consultation at the same time with the draft Joint Operational Programme

List of Authorities to be involved in consultation acts:

Besides the future Managing Authority, all Participating Countries of the HUSKROUA ENI CBC Programme 2014-2020 will be involved in the SEA process. The list of invited authorities from the national level is 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:

Slovak Republic	Ministry of Environment of the Slovak Republic
Hungary	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

	<p>North-Hungarian Water Conservancy Directorate</p> <p>Governmental Office of Borsod-Abaúj-Zemplén County</p> <p>Governmental Office of Borsod-Abaúj-Zemplén County Land Administration</p> <p>Governmental Office of Borsod-Abaúj-Zemplén County Policy Administration Service of Public Health</p> <p>Governmental Office of Borsod-Abaúj-Zemplén County Építésügyi és Örökségvédelmi Hivatal</p> <p>Governmental Office of Borsod-Abaúj-Zemplén County Forest Management</p> <p>Governmental Office of Borsod-Abaúj-Zemplén County Növény- és Talajvédelmi Igazgatóság</p> <p>Mining District Authority of Miskolc</p> <p>Governmental Office of Szabolcs-Szatmár-Bereg County</p> <p>Governmental Office of Szabolcs-Szatmár-Bereg County Land Administration</p> <p>Szabolcs-Szatmár-Bereg County Directorate for Disaster Management</p> <p>Upper-Tisza Directorate of Water Management</p> <p>Governmental Office of Szabolcs-Szatmár-Bereg County Policy Administration Service of Public Health</p> <p>Governmental Office of Szabolcs-Szatmár-Bereg County Építésügyi és Örökségvédelmi Hivatal</p> <p>Governmental Office of Szabolcs-Szatmár-Bereg County Forest Management</p> <p>Governmental Office of Szabolcs-Szatmár-Bereg County Növény- és Talajvédelmi Igazgatóság</p>
Romania	Ministry of Waters, Forests and Environmental Protection
Ukraine	Ministry of Ecology and Natural Resources of Ukraine

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.

Public participation

The involvement of stakeholders and the involvement of the public in the SEA process will be a key element in the consultation process. The consultation process gives the opportunity to the stakeholders (i.e. institutions, environmental agencies, NGOs, representatives of the public and those target groups that will be potentially affected by the possible environmental impacts of the implementation of the Operational Programme) to express their opinion.

7.5 Relationship with other relevant plans and programmes

The SEA analysis identifies the key international documents in terms of the environment link with the HUSKROUA ENI CBC Programme 2014-2020. It will be analyzed how the HUSKROUA ENI CBC Programme 2014-2020 reinforces the targets set in these documents and how the objectives of the programme contributes to the aims of those. The analyses will be carried out in case of the following most important documents:

- EU 2020
- The 7th Environment Action Programme (EAP)
- EU strategy for the Danube region (EUSDR, 2011)
- The Water Framework Directive 2000/60/EC (WFD)
- 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)
- Thematic Strategy on the sustainable use of natural resources COM (2005) 670
- Directive 2007/60/EC on the assessment and management of flood risks
- Basel Convention
- EU biodiversity strategy 2020, (COM(2011)0244)
- NATURA 2000: European network of more than 26,000 protected sites (bird and habitats)
- The "Sturgeon 2020", a strategy and program for the protection and rehabilitation of the Danube sturgeons
- Strategy on Climate Change
- Climate and Energy Package 2020
- UNESCO World Cultural and Natural Heritage Convention (1972)
- White paper 2011 - Roadmap to a Single European Transport Area

7.6 Interlinking of elements of the whole planning process

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

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

The SEA process 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 is planned to be realized. The elaboration of the Screening statement and the Scope has been started the earliest possible stage. Close co-operation with the planners will be 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.

It is expected that in the frame of the consultation some of the stakeholders send environment-related suggestions that are directly related to the content of the Joint Operational Programme. The Strategic Environmental Assessment will give clear recommendations included both in the final Scoping Report and in the final Draft Environmental Report. All the recommendations will be discussed with the consultant responsible for the Joint Operational Programme.

The overview on the main SEA recommendations and how these have been considered in the programme is to be given in the Non-technical Summary and Official Statement.

7.7 Analysis of alternatives

As an important element of the SEA, the methods of assessment within this process will also be determined and the possible alternatives to be considered in the Environmental Report specified.

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. 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 analyzed ‘with and without’ the implementation of the Programme, and an intermediary programme strategy is also to be analyzed.

The assumption is that the final version of the programme is the best alternative as it has been improved in an iterative way through the cooperation among programming, ex-ante evaluation and SEA.

7.8 Transboundary context

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 will be investigated. 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 need to 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.

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