

# **DRAFT ENVIRONMENTAL REPORT**

for the

Strategic Environmental Assessment for the Cross  
Border Cooperation Programme between Hungary  
and Serbia in the Programming Period 2021-2027

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2 Szép Street, 4th Floor, 1053 Budapest

**TITLE OF THE CONTRACT:**

Preparation of the Strategic Environmental Assessment for the Cross-Border Cooperation Programme between Hungary and Serbia in the 2021-2027 Programming Period

**REFERENCE NUMBER:**

31ST-2021SRB

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## 1. MAIN CHARACTERISTICS OF THE STRATEGIC ENVIRONMENTAL ASSESSMENT

### 1.1. Objective of the strategic environmental assessment

In accordance with *Directive 2001/42/EC of the European Parliament and of the Council on the assessment of the effects of certain plans and programmes on the environment*, main objectives of the strategic environmental assessment (hereinafter: SEA) are as follows:

- to identify the existing environmental problems relevant to Interreg IPA III CBC Programme Hungary-Serbia 2021-2027 (hereinafter: Programme or HUSRB CBC Programme),
- to examine the coherence of Programme with environmental and sustainable development policies on EU, national and regional level.
- assessing the potential environmental effects of the Programme, by giving an overview of the possible favourable and unfavourable environmental impacts,
- formulate recommendations to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the Programme,
- to enhance the contribution of the Programme to sustainable development.

The strategic environmental assessment is an integral part of the programming process, but for reasons of transparency, the outcomes of the SEA are published in a consolidated Environmental Report. However, although the Environmental Report is the main outcome of the environmental assessment, its most important goal is the continuous support of the process of Programme development.

### 1.2. SEA process and its relationship with the Interreg IPA III CBC Programme Hungary-Serbia 2021-2027

As mentioned above, most important goal of SEA is the effective support for programme development process. To achieve it, the SEA schedule has been aligned with the programming schedule to allow for effective communication between expert teams responsible for development of the Programme and SEA and to support the integration of environmental considerations into the Programme. The SEA experts formulated recommendations throughout the drafting of Chapter 2 of the Programme in an interactive way, maintaining close contact with the expert team responsible for planning during the whole SEA process.

The environmental report as outcome of the SEA process (this document) has been launched for public consultation parallel with the Programme. This enables the interpretation of proposals set in the environmental report, as well as the incorporation of proposed amendments made to environmental report into the text of the Programme.

Finally, the environmental report will be approved as an integrated part of the Programme by the Programming Committee and by the Governments of both Participating Countries.

The figure below shows the relationship between the SEA and programme development processes.

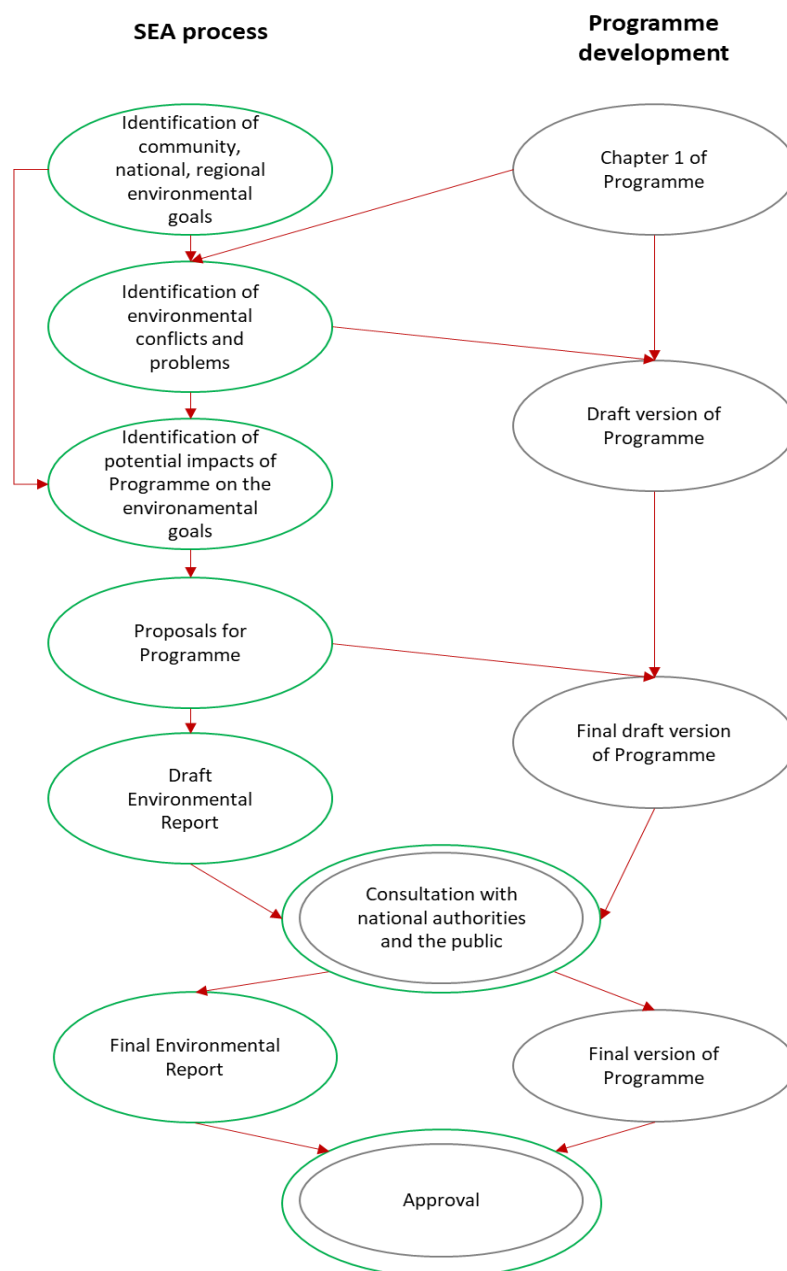


Figure 1: Relationship between the SEA and programme development processes

### 1.3. Incorporation of comments and proposals made during the SEA process

This chapter can be prepared in the last phase of SEA process, after conducting a public consultation and receiving the opinion of national environmental authorities of both participating countries.

## 2. MAIN CHARACTERISTICS OF THE INTERREG IPA III CBC PROGRAMME 2021-2027

### 2.1. The analysed territory

The cooperation area of the Interreg-IPA III CBC Programme Hungary-Serbia 2021-2027 (hereinafter: Programme or HUSRB CBC Programme) covers a territory of 34 335 km<sup>2</sup>, homes for 2,76 million citizens.

The analysed area of the Programme on the Serbian side includes the following 7 districts, equivalent to NUTS 3 regions ('okrug', Romanised: 'okrug'), of the Autonomous Province of Vojvodina, giving home to 1.86 million people altogether:

- RS121 - Zapadnobački okrug (West Bačka)
- RS122 - Južnobačanski okrug (South Banat)
- RS123 - Južnobački okrug (South Bačka)
- RS124 - Severnobačanski okrug (North Banat)
- RS125 - Severnobački okrug (North Bačka)
- RS126 - Srednjobanatski okrug (Central Banat)
- RS127 - Sremski okrug (Srem)

The analysed area of the Programme on the Hungarian side includes the following 2 NUTS 3 regions ('megye'), giving home to 0.90 million people altogether:

- HU331 - Bács-Kiskun megye (Bács-Kiskun county)
- HU333 – Csongrád-Csanád megye (Csongrád-Csanád county).



Figure 2: The analysed territory of the INTERREG IPA III CBC Programme Hungary-Serbia 2021-2027 (Source: Territorial analysis prepared by CESCO, 2020.)

## 2.2. Main objectives and actions of the Programme

The table below shows the intervention logic of the Programme.

Priority	Specific Objective	Action
1. A greener Region	1.1 Climate change adaptation, risk prevention	1.1.1 Joint development, coordination and improvement of the cross-border risk prevention and disaster management systems
		1.1.2 Joint actions aimed to reduce the impact of climate change, addressing natural phenomena occurring as a consequence of climate change
		1.1.3 Joint awareness raising and educational activities on causes and consequences of climate change
	1.2 Biodiversity and reduced pollution	1.2.1 Joint activities which identify and contribute to the elimination of the cross-border pollution sources
		1.2.2 Joint initiatives for ensuring the sustainable development of natural areas
		1.2.3 Joint awareness raising and educational activities on environmental and nature protection topics in the border region
2. Enhancing the human and cultural values	2.1 Education and lifelong learning	2.1.1 Lifelong learning for social inclusion, social cohesion and environmentally sustainable and healthy digitalization
		2.1.2 Joint development of training, mentoring and outreach programs to combat and reverse early school leaving
		2.1.3 Joint development of vocational training
	2.2 Culture and tourism	2.2.1 Development of joint tourism products with joint marketing management of these products
		2.2.2 Cultural cooperation
		2.2.3 Joint management of information for tourism and cultural purposes
	3.1 Harmonious neighbourly	3.1.1 Building up mutual trust, in particular by encouraging 'people to people' (P2P) actions



Priority	Specific Objective	Action
3. Cross-border relations through cooperation		3.1.2 Actions supporting better cooperation governance
institutional and civil cooperation	3.2 Border crossing management	3.2.1 Capacity development of border crossing management and mobility

Figure 3: Intervention logic of the HUSRB CBC Programme (Source: own construction based on HUSRB CBC Programme)

### 2.3. Relationship with other relevant plans programmes, and environmental protection objectives established in these documents

The environmental assessment also included an analysis on the relationship between actions of the Programme and objectives of EU-level, national and regional programmes relevant from an environmental point of view. We examined whether actions of Programme support, hinder, or do not affect the achievement of environmental or sustainability goals set in strategic documents. Please note that the analysis conducted included only objectives of strategies relevant in the programme area.

Results of the analysis are summarized in the table below.

Environmental and/or sustainability objectives of the documents	Specific Objectives					
	1.1.	1.2.	2.1.	2.2.	3.1.	3.2.
<b>EUROPEAN UNION</b>						
<b>European Green Deal</b>						
Increasing the EU's climate ambition for 2030 and 2050	0	0	0	?	0	0
Supplying clean, affordable and secure energy	0	0	0	0	0	0
Mobilising industry for a clean and circular economy	0	0	0	0	0	0
Building and renovating in an energy and resource efficient way	0	0	0	0	0	0
A zero pollution ambition for a toxic-free environment	0	+	0	0	0	0
Preserving and restoring ecosystems and biodiversity	+	+	0	0	0	0
From "Farm to Fork": a fair, healthy and environmentally friendly food system	+	0	0	0	+	0
Accelerating the shift to sustainable and smart mobility	0	0	0	0	0	0
<b>8th Environmental Action Programme (proposal)</b>						
Achieving the 2030 greenhouse gas emission reduction target and climate neutrality by 2050	0	0	0	?	0	0
Enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change	+	+	0	0	?	0
Advancing towards a regenerative growth model, decoupling economic growth from resource use and environmental degradation, and accelerating the transition to a circular economy	0	+	0	0	0	0
Pursuing a zero-pollution ambition, including for air, water and soil and protecting the health and well-being of Europeans	+	+	0	?	0	0
Protecting, preserving and restoring biodiversity, and enhancing natural capital (notably air, water, soil, and forest, freshwater, wetland and marine ecosystems)	+	+	0	?	0	0
Reducing environmental and climate pressures related to production and consumption (particularly in the areas of energy, industrial development, buildings and infrastructure, mobility and the food system)	+	+	0	0	0	0
<b>EU Biodiversity Strategy for 2030</b>						
Bringing nature back to agricultural land	+	0	0	0	0	0
Addressing land take and restoring soil ecosystems	+	+	0	0	0	0
Increasing the quantity of forests and improving their health and resilience	+	+	0	0	0	0
Win-win solutions for energy generation	0	0	0	0	0	0
Restoring freshwater ecosystems	+	+	0	0	0	0
Greening urban and peri-urban areas	0	0	0	0	+	0
Reducing pollution	0	+	0	?	0	0
Addressing invasive alien species	+	+	0	0	0	0
Improving knowledge, education and skills	+	+	+	0	0	0
<b>HUNGARY</b>						
<b>National Framework Strategy on Sustainable Development of Hungary</b>						
Natural resources: Biodiversity, renewable natural resources	+	+	0	?	0	0

Environmental and/or sustainability objectives of the documents	Specific Objectives					
	1.1.	1.2.	2.1.	2.2.	3.1.	3.2.
Natural resources: Reducing the environmental impact on human well-being	0	+	0	?	0	0
Natural resources: Rational use of non-renewable natural resources	0	0	0	0	0	0
<b>National Development and Territorial Development Concept of Hungary</b>						
Demographical change, healthy and renewable society	+	+	+	0	0	0
Sustainable use of our natural resources, preservation of our values and protection of our environment	+	+	0	?	?	0
Sustainable spatial structure based on regional potentials	+	0	0	?	?	+
<b>National Climate Change Strategy of Hungary</b>						
Decarbonization	0	0	0	?	0	0
Adaptation and preparation	+	+	0	0	0	0
Ensuring a climate partnership	+	0	0	0	0	0
<b>National Energy and Climate Plan of Hungary</b>						
Decarbonization	0	0	0	?	?	0
Energy efficiency	0	0	0	0	?	0
Energy security	0	0	0	0	0	0
Research, innovation, and competitiveness	0	0	0	0	0	0
<b>National Water Strategy (Kvassay Jenő Plan) of Hungary</b>						
Water retention to make better use of our waters	+	0	0	0	0	0
Preventive flood and inland water protection	+	0	0	0	0	0
Gradual improvement of water quality until good status / potential is reached	0	+	0	0	0	0
High quality water utility service, implementation of rainwater management, with tolerable consumer load	+	+	0	0	0	0
Improving the relationship between society and water (at individual, economic and decision-making levels)	+	+	0	0	0	0
<b>National Landscape Strategy of Hungary</b>						
Landscape utilization based on landscape features	+	+	0	?	?	0
Liveable landscape - liveable settlement - wise land use	+	+	0	?	+	0
Increasing landscape identity	0	+	0	+	+	0
<b>National Tourism Development Strategy 2030 of Hungary</b>						
The Kiszalud Tourism Development Program: product and attraction development based on destination logic, basic infrastructure development	0	0	0	+	0	0
Identity	0	0	0	+	+	0
<b>Territorial development program of Bács-Kiskun County 2021-2027</b>						
Spatially balanced development of the Danube-Tisza Middle Plain, considering climate change	+	0	0	?	0	0

Environmental and/or sustainability objectives of the documents	Specific Objectives					
	1.1.	1.2.	2.1.	2.2.	3.1.	3.2.
Developments supporting the economic diversity of the Kecskemét district, focusing on infrastructure supporting the improvement of urban services and sustainable development	0	0	0	0	+	0
Development of the Cross-Border Development Area based on cross-border cooperation	+	+	+	+	+	+
<b>Climate Change Strategy of Bács-Kiskun County</b>						
GHG emission reduction from building sector by at least 20% by 2030 compared to 2015	0	0	0	0	0	0
GHG emission reduction from transport sector by at least 50% by 2050 compared to 2015	0	0	0	?	0	0
GHG emission reduction from agriculture by at least 50% by 2050 compared to 2015	0	0	0	0	0	0
GHG emission reduction from waste management by at least 30% by 2030 compared to 2015	0	0	0	0	0	0
To reduce the public health risks of climate change, at least 75% of the settlements of the county must have a heat alert and response plan by 2030.	0	0	0	0	0	0
Health status of forests should at least reach the value for 2017 by 2030	+	+	0	0	0	0
The average extent of the areas affected by drought damage in the period 2030-2035 should not exceed the average value for the period 2010-2015.	+	0	0	0	0	0
In 2030, at least 30% of the county's building stock should consist of buildings built or renovated within 20 years.	0	0	0	0	0	0
Increasing capacity of tourism by enforcing the principle of soft tourism	0	0	0	+	0	0
Dissemination of knowledge related to climate-conscious consumption and lifestyle to at least half of the county's population by 2030.	+	+	0	0	0	0
<b>Territorial development program of Csongrád-Csanád County 2021-2027</b>						
Regional and municipal technical level technical and social infrastructure that ensures a high quality of life and promotes local prosperity	0	0	0	0	+	0
HOMOKHÁTSÁG - Strengthening landscape management and economic networks in Homokhátság mesoregion	+	0	0	0	+	0
TISZA-MENTE – Development of a sustainable regional economy of the Tisza-side eco-corridor (Szeged-Csongrád axis)	+	+	+	0	0	0
ENERGETIKA – Increasing energy use based on alternative energy sources and innovations, building regional-local energy management systems	0	0	0	0	0	0
<b>Climate change Strategy of Csongrád-Csanád County</b>						
Reducing GHG emissions of transport sector	0	0	0	?	0	0
Reducing GHG emissions of building sector	0	0	0	0	0	0
Reducing GHG emissions of agriculture	0	0	0	0	0	0
Reducing GHG emissions of industry	0	0	0	0	0	0
Increasing energy capacities based on renewable energy sources	0	0	0	0	0	0
Increasing the adaptive capacity to extreme weather events in the settlements of the county	+	+	0	0	?	0
Adaptation measures will be implemented in 30% of agricultural areas of the county by 2050	+	0	0	0	0	0
There will be no significant deterioration of the county's (wetland) habitats by 2030	+	+	0	0	0	0
The number of co-operations in the climate protection RDI sector in the county will increase by 10% by 2030	0	0	0	0	0	0

Environmental and/or sustainability objectives of the documents	Specific Objectives					
	1.1.	1.2.	2.1.	2.2.	3.1.	3.2.
Supporting the soft tourism in the county	0	0	0	+	0	0
Increased consideration of climate risk in the county's industrial developments and investments	0	0	0	0	0	0
Increase in the number of climate-conscious architectural solutions in the county	0	0	0	0	0	0
Awareness of various energy saving methods for climate mitigation will increase to 40% of the population by 2030	0	+	0	0	0	0
20% increase in the number of people participating in the awareness raising actions on the effects of climate change	+	+	0	0	0	0
Raising awareness of climate adaptation opportunities among citizens	+	+	0	0	0	0
<b>REPUBLIC OF SERBIA</b>						
<b>Industrial Policy Strategy of the Republic of Serbia from 2021 to 2030</b>						
Industry transformation from linear to circular model	+	+	?	0	0	0
<b>Water management strategy in the territory of the Republic of Serbia until 2034</b>						
Water management and sustainable development	+	+	0	?	+	0
Water use	+	+	0	?	+	0
Water protection	+	+	0	0	0	0
Protection against the harmful effects of water	+	+	0	0	+	0
<b>Nature protection strategy of the Republic of Serbia for the period 2019 to 2025</b>						
Biodiversity protection/conservation	+	+	0	0	0	0
Improving the system of protected areas and environmental measures	+	+	0	0	0	0
Sustainable use of natural resources	+	+	0	0	+	0
Improving public policy and public participation in decision making	0	+	0	+	+	0
<b>Energy Sector Development Strategy of the Republic of Serbia for the period by 2025 with projections by 2030</b>						
Transition towards sustainable energy sector	+	0	?	0	0	0
<b>Sustainable Urban Development Strategy of the Republic of Serbia until 2030</b>						
Improving conditions for local sustainable economic and urban development	0	0	0	+	0	0
Improved quality and accessibility of social services, reduced risk of poverty, solved the housing needs of all citizens, achieved social inclusion and demographic renewal of urban areas	0	0	+	0	0	0
<b>Smart Specialisation Strategy in the Republic of Serbia for the Period from 2020 to 2027</b>						
Education focused on innovations and entrepreneurship	0	0	0	0	0	0
<b>Tourism Development Strategy of the Republic of Serbia for the Period from 2016 to 2025</b>						
Improve and align the methodologies and procedures for the collection and processing of statistical data with international standards and practices	0	0	0	+	?	0
<b>Strategy for the Development of Culture in the Republic of Serbia from 2020 to 2029</b>						
Improving the regulatory framework, institutional capacity, and system funding in culture	0	0	0	+	+	0
Development of the system of investments in cultural institutions and protection of cultural heritage	0	0	0	+	0	0

Environmental and/or sustainability objectives of the documents	Specific Objectives					
	1.1.	1.2.	2.1.	2.2.	3.1.	3.2.
Development of production, cultural needs and equal participation of citizens in the cultural life	0	0	+	+	0	0
Improving international cooperation and the process of European integration in the field of culture	0	0	0	+	+	0
Digitization in culture	0	0	0	+	+	0

**Legend**

- + Specific objective of Programme is in line with environmental/ sustainability objective
- ! Specific objective of Programme jeopardizes the achievement of the environmental/ sustainability goal
- ? Specific objective's impact on the environmental objective depends on the way of implementation
- 0 Specific objective of Programme and environmental/ sustainability objective are not related to each other

Figure 4: Relationship between actions of the Programme and objectives of EU-level, national and regional strategies relevant from an environmental point of view

Overall, it can be stated that **the actions included in the Programme support the achievement of relatively few environmental and sustainability goals, which is primarily due to the relatively narrow intervention focus of the Programme.** Objectives set by most of the actions are mainly focused on various aspects of adaptation to climate change, as well as nature and biodiversity conservation. Finally, it is definitely worth emphasizing that the planned actions are not expected to prevent the achievement of any “green objectives”.

## 2.4. Internal consistency of the programme document

The Chapter 1 of the Programme, besides economic and social characteristics, also explores the environmental characteristics of the development area, and identifies the most important environmental conflicts. According to the planning logic, the objectives and actions of the Programme set out in the second chapter are aimed at resolving these.

**Overall, the intervention logic of the Programme adequately reflects the environmental challenges identified in Chapter 1.** Most of these, especially vulnerability of natural values and climate change consequences (increasingly extreme weather conditions, water regime, and water balance) are responded in a substantive manner by the relevant actions of the Programme under the specific objectives “Climate change adaptation, risk prevention” and “Biodiversity and reduced pollution”. Still, the Programme does not address all the environmental and sustainability challenges identified in the first chapter, which is due to its limited resources and relevantly, the necessity of focusing on the planned developments.

### 2.4.1. Contradictions between Chapter 1 and Chapter 2 of the programme documents

**The internal synergy of the Programme was examined at the level of each action.** The assessment sought to clarify whether the individual actions together amplify the expected positive or possibly the adverse environmental impacts, further on, whether there are any of them that have conflicting environmental consequences. The results may differ in terms of the effects on different environmental elements. Therefore, for the sake of clarity, in the table below presenting the results of the assessments we have focused on the processes having the greatest impact. Contradictions between the actions of the planned priorities from an environmental point of view

Actions	1.1.1	1.1.2	1.1.3	1.2.1	1.2.2	1.2.3	2.1.1	2.1.2	2.1.3	2.2.1	2.2.2	2.2.3	3.1.1	3.1.2	3.2.1
1.1.1		+	+	+	+	+	0	0	0	0	0	0	+	0	0
1.1.2	+		+	+	+	+	0	0	0	><	0	><	+	0	0
1.1.3	+	+		+	+	+	0	0	0	><	0	><	+	0	0
1.2.1	+	+	+		+	+	0	0	0	><	0	><	+	0	0
1.2.2	+	+	+	+		+	0	0	0	><	0	><	0	0	0
1.2.3	+	+	+	+	+		0	0	0	><	0	><	+	+	0
2.1.1	0	0	0	0	0	0		0	0	0	0	0	0	0	0
2.1.2	0	0	0	0	0	0	0		0	0	0	0	0	0	0
2.1.3	0	0	0	0	0	0	0	0		0	0	0	0	0	0
2.2.1	0	><	><	><	><	><	0	0	0		!	!	0	0	><
2.2.2	0	0	0	0	0	0	0	0	0	!		!	+	+	+
2.2.3	0	><	><	><	><	><	0	0	0	!	!		0	0	><
3.1.1	+	+	+	+	0	+	0	0	0	0	+	0		+	+
3.1.2	0	0	0	0	0	+	0	0	0	0	+	0	+		+
3.2.1	0	0	0	0	0	0	0	0	0	><	+	><	+	+	

<b>Legend</b>	<b>+</b>	Actions jointly contributing to a positive environmental impact
	<b>!!</b>	Actions significantly and clearly contributing jointly to an adverse environmental impact
	<b>!</b>	Actions potentially causing some adverse but preventable environmental impacts
	<b>&gt;&lt;</b>	Actions potentially causing contradictory environmental impacts
	<b>0</b>	Actions not interrelated in terms of environmental impact

Figure 5: Synergies of actions from an environmental point of view

The main result of the internal environmental consistency analysis of the Programme is that **the document does not contain any actions, the simultaneous implementation of which would clearly lead to an increase in environmental conflicts.** On the contrary, **most actions jointly generate a significant positive environmental impact** (e.g. “Awareness raising and educational activities on the effects of climate change” and “Actions aimed at reducing the impact of climate change”). Some of the actions’ joint implementation implies a possibly increasing exploitation of and pressure on some environmental elements. Nevertheless, it is not the case that two actions of a completely different nature amplify each other's adverse environmental effects, since they are only different types of developments within the same area of intervention (Culture and Tourism). The Programme also includes some action pairs that may have conflicting environmental effects. Within these few couples, practically, one of the actions belongs to the tourism development, while the other to the “Biodiversity and Pollution Prevention” objective. Also, in this case the key concern is the potential adverse environmental effects of tourism development, which can largely be prevented though, as detailed in Section 4.1. **Overall, it can be concluded that the actions of the Programme do not contradict each other in terms of their main environmental impacts.**

### 3. CURRENT STATE OF THE ENVIRONMENT IN THE PROGRAMME AREA AND THE LIKELY EVOLUTION THEREOF WITHOUT IMPLEMENTATION OF THE PROGRAMME

This chapter has been completed based on section 2. of the Territorial analysis.

#### 3.1. The environmental characteristics of the areas which are likely to be affected by the programme objectives

##### 3.1.1. Landscape structure

According to the natural landscape, the programme area is part of the Carpathian Pannonian Region. Almost the entire programme area belongs to the Great Pannonian Plain macroregion’s territory. The Fruška Gora divides the lowlands of the Srem (Posavska ravnica) from the northern part of the programme area. On the southern part of the programme area, the region of Karaška ravan, stuck between the Vršačke planine and the Deliblata is divided as a mesoregion. This is the area where the Karaš and the Nera rivers merge, which is blocked from the wider area of the Great Pannonian Plain by the Vršac planina.



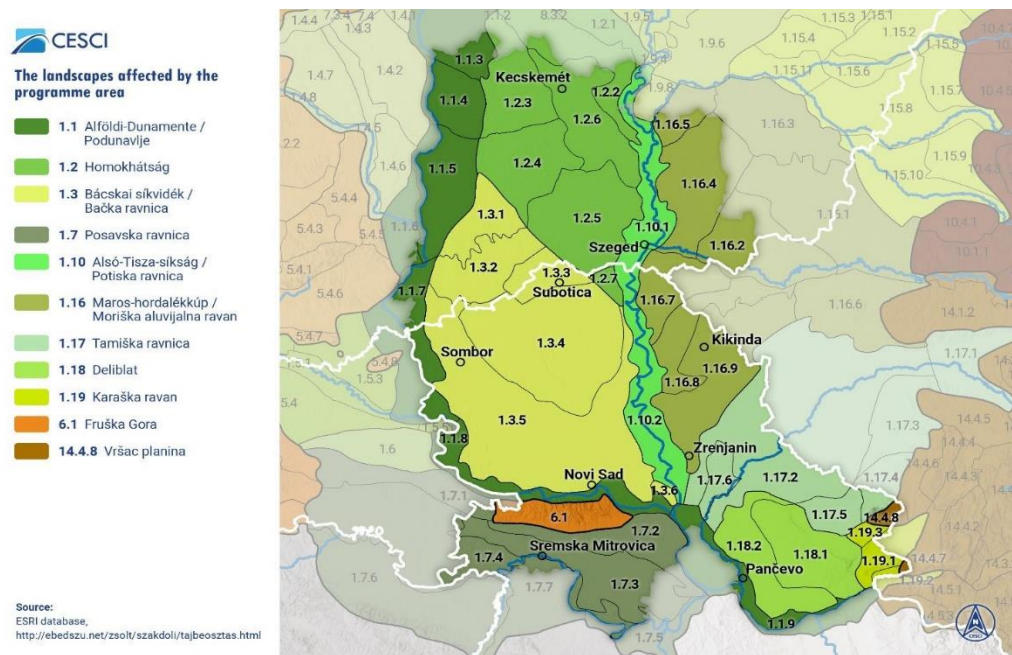


Figure 6: Macro- and mesoregions in the border region (Source: Territorial analysis, CESCI, 2020.)

The following is a detailed description of the centre parts of the programme area, including their characteristics affecting landscaping.

**Alföldi-Dunamente/Podunavlje (1.1):** the region includes the former floodplain of the Danube. The marshy and swampy floodplains characteristic of the region has almost completely disappeared due to the regulation and drainage of the Danube. There are larger spots of salines that are disadvantageous to plant production, located on the east side of the region, which are covered by grassland that is valuable from a nature conservation standpoint.

**Homokhátság (1.2):** The Mid-Danube-Tisza Plain lowland is the biggest connected sand area of Hungary, where economic activity is restricted by the limited and irregularly distributed precipitation, as well as the poorly fertile soils. The sand ridge does not have many surface waters.

**Bácskai síkvidék/Bačka ravnica (1.3)** The Banat – and the Subotička pešcara – used to be a heath formed by the wind 200 years ago, due to a lack of vegetation. The diverse forms of quicksand on the alluvial fan are covered by a few metres thick typical sandy loess, and excellent, nutrient-rich, calcic chernozem formed on it.

**Posavska ravnica (1.7):** Along and in the vicinity of the river Sava, which forms the southern border of Vojvodina with Central Serbia and heavily determines the landscape, flora and fauna, large wetland habitats can be found rich in forest resources, birds, reptiles and certain mammals (e.g. deer, boars) in particular.

**Alsó-Tisza-síkság/Potiska ravnica (1.10):** Mineral waters, thermal springs and oil and natural gas fields in Algyő are the important natural resources of the region. This is the sunniest area of Hungary, which is utilized in heat demanding cultures.

**Maros-hordalékkúp/Moriška aluvijalna ravan (1.16):** The oil and natural gas fields identified in the area and the thermal wells are significant on a national level in Hungary as well.

**Tamiška ravnica (1.17):** The big rivers of the Carpathian Basin merge in this area, therefore the Banat used to be a swampy area, which has been drained from the 17th century. However, the only desertlike region of Europe is also located here: Deliblat (1.18) sands. Today, most of the heath is covered by grassy pastures and woodlands, as the sand threatening the neighbouring settlements was successfully set with afforestation in the 19th century. There are orchards and vineyards on its southern part.

**The Fruška Gora (6.1)** is a narrow mountain range, which is raised from the Great Pannonian Plain as an island mountain.

To conclude the short introduction of landscapes in the region, we need to emphasize that most of the mesoregions (1.1, 1.3, 1.2, 1.10, 1.16) building the character of the border region are crossing the border, which is splitting the region administratively. This landscape factor can be considered one of the most important cohesion factors of the programme area. However, after reviewing the landscape structure, certain landscape elements should be reviewed as well.

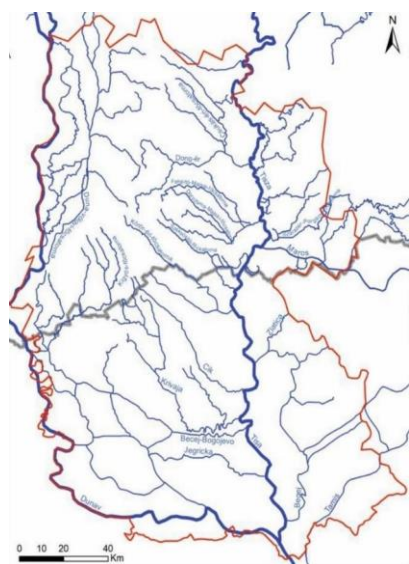
### 3.1.2. Soil conditions

The programme area is remarkably diverse regarding both its soil types and the physical and water management types of the occurring soils. The chernozem soils and their different versions can be considered as a dominant soil type, and thanks to their crumbly texture, they provide great water and nutrient management for agricultural cultivation. The amount of sandy soils (quicksand, humic sandy soils, chernozem-like sandy soils) is also significant, but their water management conditions are disadvantageous, as they have a strong water absorption ability, but a weak water holding capacity. Regarding geographic scope, it is important to mention meadow soils, which have a mediocre or bad water absorption ability, but a great water holding capacity.

### 3.1.3. Water resources, river basins, water management

The programme area belongs to the water catchment area of the Danube, just like most of the Carpathian Basin. Most of the territory was established by the Danube, the Tisza/Tisa, and their tributaries. Other main rivers of the region are the Mureş, the Körös/Kriš, the Sava, the Temes/Tamiš and the Bega/Begej. Besides the natural water network, the 690 km long Dunav–Tisa–Dunav drainage system, located in Vojvodina AP, is one of the biggest man-made drainage systems in Europe. The water regime of the main rivers is very variable: floods and water scarcity are serious problems. Surface waters maintain significant ecological networks, provide water to agriculture and tourism, provide the replacement of groundwater bodies, and serve as important waterways, especially in the Vojvodina.

Figure 7: The water network of the study area  
(Source:  
<http://www.geo.uszeged.hu/wateratrisk/sites/www.geo.uszeged.hu/wateratrisk/files/pdf/kotet.pdf>)



The quality of the rivers is endangered by both Hungarian and Serbian municipalities. The water quality of the Tisza/Tisa is quite good and the water quality of the Danube has increased as well over the last few years due to the lack of significant industrial installations and as a result of the establishment of municipal sewage treatment plants. The quality of surface waters is also important because drinking water is currently extracted from riverside filter wells in Vojvodina AP, but a clear shift is visible towards artesian wells.

Drinking water supplies are contaminated with arsenic in more than 100 settlements on the Hungarian side of the programme area, and this problem is present on the Serbian territories close to the border as well. The amount of arsenic in produced drinking water in the artesian waters of the region exceeds the European threshold of 10.0 µg/l. There is a high amount of methane, iron, manganese, ammonium, and boron components - of a natural origin, just like the arsenic - in some of the water

resources as well, which causes problems.

The water quality status of the Hungarian counties significantly improved with the introduction of the technologies initiated by the Drinking Water Quality Improvement Programme. The quality of drinking water in Vojvodina AP is unsatisfactory, they are using groundwater for water supply.

Only a small number of local governments in the Republic of Serbia have a municipal wastewater treatment plant, with the largest cities (Belgrade, Novi Sad and Nis) discharging untreated wastewater to recipients. Based on the results of an analysis carried out by the Environmental Protection Agency between 1998-2008 using 143 measuring points it can be concluded that the most endangered are rivers and canals in Vojvodina. The situation in Hungary is much more favourable thanks to developments financed from the Operational Programmes. Each of the larger settlements has a wastewater network and the collected wastewater is also being treated. There is a wastewater load on groundwater only in some smaller settlements.

#### 3.1.4. Natural values, protected areas, biodiversity

The political borders of the countries in the Carpathian Basin usually cross natural or landscape units, so the landscapes, geological formations, areas and distribution and habitats continue across state border lines.

**Kiskunság Nemzeti Park:** was created in 1975. The park covers an area of 570 km<sup>2</sup> and stretches across the Little Cumania (Kiskunság) region of the Great Hungarian Plain. The size of Natura 2000 territories under conservation management by the Directorate is 180,345 ha. The extension of territories of national importance regarding environmental protection located on the operational area of the

Directorate, in addition to the Natura 2000 territories is as follows: Wetlands of international importance: 31,827 ha; MAB biosphere reserves: 108,185 ha; Biogenetic reserve (Kolon-tó): 2,962 ha.

**Körös-Maros Nemzeti Park:** The park was created in 1997 for the protection of birds. Körös-Maros National Park has a number of regions such as Kis-Sárrét swamp, Fáspuszta, Mágor-puszta or Kardoskúti Fehértó. It features a bustard reserve established in 1975. The major towns of the area are Szarvas and Dévaványa. The great flocks of birds that can be seen during the autumn migration season at Lake Fehér near Kardoskút. The lake is used as a resting place and nesting site by tens of thousands of plovers, cranes and wild ducks. The reserve at Dévaványa is a refuge for the great bustard, the ostrich of the Hungarian puszta.

**Nacionalni park Fruška Gora:** It has been a national park since 1960, it is characterized by biodiversity, the richness of the vegetation, natural beauty, and rarities. 90% of its area consists of forests, providing a habitat for 1400 plant and 200 bird species. 16 orthodox monasteries raise its cultural value therefore it is also known as the “Serbian Athos”.

**Specijalni rezervat prirode Gornje Podunavlje:** it contains territories flooded by the Danube (floodplain forests, swamps, backwaters) and demonstrates a complex water and terrestrial ecosystem.

**Specijalni rezervat prirode Slano Kopovo:** The Slano Kopovo is the best known and the biggest saline lake in the Banat. The saline lake, or rather swamp that seasonally dries out was formed in one of the ancient branches of the Tisza/Tisa, and it has been a significant birds’ rest and meeting point for centuries.

**Specijalni rezervat prirode „Selevenjske pustare“:** it received the title of Special Protection Area in the 1990s. It is characterised by plain, rich steppes spread in a mosaic way and the diversity of saline, sand, and swamp habitats.

### 3.1.5. Cultural heritage

#### Built heritage, historical heritage

Among the built heritage elements in Vojvodina, the orthodox churches, and monasteries, built in the baroque period, and the monasteries of Fruška Gora from the late Middle Ages are dominant. There are also several civil buildings there. In addition, a big number of Roman Catholic churches, monuments (a high number of World War II partisan monuments), archaeological sites and complexes and granaries are located here. There is a limited number of castles, fortresses, ruins, parts of settlements or even entire settlements.

In Hungary, there are 642 monuments, surroundings of monuments and items of monumental value in Bács-Kiskun region, while this number is 644 in Csongrád region.

### Intellectual cultural heritage elements – national and UNESCO representative lists

The Hungarian intellectual cultural heritage had 40 elements in 2020, of which are four elements have territorial relevance from BácsKiskun and Csongrád-Csanád regions. These are:

- The living tradition of needlepoint in Kiskunhalas
- Living traditions in the cultural area around Kalocsa: embroidery, costumes, folk art (“pingálás”) and dancing
- Mat weaving in Tápé
- The living tradition of making and wearing the traditional shoes of Szeged

There are some other elements covering wider areas, e.g. “Traditional fishing on the lower parts of the Danube in Hungary”, “The tradition of the Hungarian blueprint technique”, “The tradition of the Hungarian csárdás folk dance”, “The living tradition of Hungarian folk string orchestras” and “The tradition of bagpipes in Hungary”. Not only their significant locations can be connected to the Hungarian parts of the study area, but, in many cases, they also have a living tradition in Vojvodina.

The number of intangible cultural heritage elements in Serbia is 49. Five of the non-general elements affecting only the areas of Vojvodina can be mentioned:

- *Staparsko ćilimarstvo* – carpet weaving in Stapar
- *Naivno slikarstvo Slovaka* – the naive art of the Slovak national minority in Serbia
- *Cipovka* – znanje i umeće pripremanja tradicionalnog hleba u Vojvodini – Bread – the method of making traditional bread in Vojvodina
- *Bezdanski damast* – umeće ručnog tkanja ornamentisanog svilenog damasta žakar tehnikom – Damask weaving in Bezdán – the technique of manual damask weaving with patterns, using the Jacquard technique
- *Vertep* – Vertep, the tradition of nativity in Srem

#### 3.1.6. Climate characteristics, the impacts of climate change

According to the forecast, years affected by drought will increase on both the Hungarian and the Serbian side. The frequency of droughts increased in the inspected areas over the 50 years between 1962 and 2011. Extreme droughts have become more and more frequent in the second half of the period, besides the increasing trend. Between 1901 and 2016, extremities regarding warm temperature increased and extremities regarding cold temperature decreased because of climate change.

Water scarcity and aridification will not only become more frequent and prolonged, it will also affect the natural environment, natural resources, and agricultural, horticultural and forestry production bases. They also draw attention to the increasing uncertainties of the population’s water and food supply and the deteriorating quality of drinking water and food ingredients, while production costs and the risks of corporations and investors increase. Since these risks and challenges are of a regional nature, a close cross-border cooperation is needed to solve the problems.

Extreme weather conditions, posing serious hydrological danger, occur more frequently as a consequence of climate change. The amount of precipitation days decreases, but that of days when a large amount of precipitation falls at once increases. This tendency affects the agricultural sector negatively on both sides of the border, damages soil erosion and flood control systems, and as the soil is unable to absorb intense precipitation, surface run-off can significantly increase. The extremely severe storms and hails are becoming increasingly common environmental phenomena, and they are posing significant risks to agricultural production.

A further consequence of climate change is the increased frequency and severity of floods in the warmer and wetter water period. The risk of floods can also be increased by factors like the mismanagement of floodplains, mud silting up or the incapacity of protection systems. Overall, the annual water balance shows a decreasing trend in the region regarding both surface and groundwater.

### **3.1.1. Natural resources, energy potentials**

The following description reviews the most relevant energy sources in the Programme area. The natural conditions of the Programme area are advantageous regarding solar energy utilization, the annual number of hours of sunshine is min. 1900-2200, the average amount of incident solar radiation is 1300 kWh/m<sup>2</sup>. The solar energy production more than tripled (increased by 317%) between 2017 and 2018 in Hungary. However, in Serbia the emphasis of exploitation of electricity production capacities for renewables are not based on solar energy.

The Programme area's rich thermal water capacities are a special feature of the Carpathian Basin's hydrography as a whole. Favourable geological conditions resulted in the outstanding amount of thermal springs. The temperature and amount of thermal water provides an outstanding basis for utilization in several regions. The temperature of extractable thermal water is 90–95°C in Szeged and its surroundings, and 60–80°C in Vojvodina AP and its surroundings. It is worth mentioning, that geothermal energy is only partially renewable, but the Carpathian Basin's huge supply will most probably last for thousands of years.

Biomass as a by-product, serving as a secondary raw material suitable for local thermal energy production, which is largely available as a result of agricultural activities. Biomass is the potential of one of the most significant renewable resources due to the agricultural nature of the Programme area. However, in Serbia a significant part of biomass is burned in the fields instead of being used for energy purposes. In Hungarian counties affected by HUSRB CBC Programme, there are more biogas plants and a biomass power plants.

### **3.1.2. Waste management**

The amount of municipal waste produced in Bács-Kiskun and Csongrád-Csanád counties was in 2019 296 thousand tons per year, the deposited waste of this is 133 thousand tons per year. 120 thousand tons of waste is recycled. Complying with the EU obligation, the initiatives for the isolated collection, pre-treatment and utilization of bio waste/green waste is necessary for further decreasing the amount of deposited waste, encouraging utilization with cleaner materials and raising awareness and establishing the right behaviour, in order to develop public services. In Serbia, about 80% of domestic waste are collected in an organized manner, the rest goes to the more than 3500 illegal landfills of the

country; only 5% of the collected waste is recycled. No progress has been made regarding packaging waste over the last ten years. The recycling ratio in this sector is estimated to be 35–40%<sup>1</sup>. The underdevelopment of waste management is one of the key problems, the number of illegal landfills is steadily increasing as a result.

### 3.2. Relevant environmental conflicts and problems

Based on the above, the following main environmental conflicts and challenges can be identified in the Programme area:

- The water regime of the main rivers is very variable: floods and water scarcity are serious problems.
- The levels of arsenic in some of the water catchments cause problems. According to the water aquifer geochemical layers, the arsenic is of natural origin. Drinking water supplies are contaminated with arsenic in more than 100 settlements on the Hungarian side of the Programme area, and this problem is present on the Serbian territories close to the border as well. The amount of arsenic in produced drinking water in the artesian waters of the region exceeds the European threshold of 10.0 µg/l. There is a high amount of methane, iron, manganese, ammonium, and boron components - of a natural origin, just like the arsenic - in some of the water resources as well, which causes problems.
- The quality of drinking water in Vojvodina AP is unsatisfactory, they are using groundwater for water supply. These groundwaters contain more arsenic, ammonia, organic matters, borate, sodium, iron, and manganese than allowed.
- A small number of local governments in the Republic of Serbia have a municipal wastewater treatment plant, with the largest cities (Belgrade, Novi Sad and Nis) discharging untreated wastewater to recipients.
- Low share of natural areas, unfavourable processes observed on the remaining natural areas (e.g. drying out wetlands). Degradation and transformation of vegetation, spreading of invasive alien species due to the climate change and human activities of the past few decades.
- Aridification (e.g. droughts, forest fires, decreasing groundwater level and deteriorating quality) affecting the cross-border natural environment, natural resources, and agricultural, horticultural and forestry production bases. Growing production costs and risks to economic activities heavily relying on climate conditions turning increasingly unfavourable because of above average vulnerability to climate change.

Increasing frequency and intensity of hydrological (e.g. flooding, inland water) and extreme meteorological phenomena (e.g. sudden downpours, storms, hails). Need for better harmonised water management and water protection.

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<sup>1</sup> Balkan Green Energy News: Waste management in Serbia – problems, challenges, and possible solutions  
<https://balkangreenenergynews.com/waste-management-in-serbia-problems-challenges-and-possiblesolutions/>

### 3.3. Likely evolution of the environment without implementation of the Programme

The lack of implementation of the Programme might cause effects of different orientation on the state of the environmental elements and systems.

The lack of implementing the actions explicitly addressing environmental challenges (under specific objectives “Climate change adaptation, risk prevention” and “Biodiversity and reduced pollution”) may result in the persistence or possible escalation of existing environmental conflicts. Due to the fact that the Programme's environment-focused actions contribute the most to the preservation of natural and semi-natural habitats, and biodiversity, as well as to the adaptation to the more and more extreme climatic conditions, the lack of planned developments would primarily have an adverse effect on the vulnerability of sectors particularly exposed to climate change (such as water management, agriculture, forestry).

Contrary to the above, the absence of actions with an environmental risk, limited to tourism development within the Programme, would logically avoid environmental pressures arising from this activity. However, due to the extremely low level of associated environmental risks (see Chapter 4.1 for details), the planned development of tourism is unlikely to have a significant impact on the state of the environment, i.e. the absence of these elements of the Programme would not result in significant environmental benefits.

## 4. LIKELY ENVIRONMENTAL EFFECTS OF PROGRAMME IMPLEMENTATION

### 4.1. Potential impacts on environmental systems

#### 4.1.1. Soil

**No programme actions were identified as potentially leading to a permanent and significant burden on soils.** Only some tourism developments might cause slight negative impacts, but only on a point-by-point basis, possibly at municipal level. The potential adverse effects are expected to be significantly offset by those actions which include elements resulting targeted improvement of soil conditions, such as elimination of pollution, and measures related to agricultural activities.

#### A) Actions with no impact on soil

- 1.1.1. Joint development, coordination and improvement of the cross-border risk prevention and disaster management systems
- Actions under specific objective „2.1. Education and lifelong learning”
- 2.2.2. Cultural cooperation
- 2.2.3. Joint management of information for tourism and cultural purposes



- Actions under specific objective “3.1. Harmonious neighbourly relations through cooperation”
- Actions under specific objective „3.2. Crossing management”

**B) Actions with likely positive effect on soil conditions**

Specific objective / Action	Likely positive impact on environmental system			
	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
<b>1.1.2. Joint actions aimed to reduce the impact of climate change, addressing natural phenomena occurring as a consequence of climate change</b>	high	lasting	reversible	regional
	Several elements of the Action might have a positive effect on both the quantitative and qualitative condition of soils. Interventions addressing droughts, water scarcity, and on the other hand, water abundant periods characterized with inland excess water will improve and even out the water balance of soils, which directly improves the physical condition of soils and reduces the risk of wind erosion. Additionally, climate adaptation interventions in the agricultural sector might specifically lead to an improvement in the condition of arable land.			
	Recommended measures: <ul style="list-style-type: none"> <li>• In case of surface water retention projects, occasional or permanent flooding of soils of poor quality is recommended only in order to protect arable land.</li> </ul>			
<b>1.1.3. Joint awareness raising and educational activities on causes and consequences of climate change</b>	medium	lasting	reversible	regional
	Improved soil conditions can be achieved mostly via awareness raising of farmers (one of the target groups of the Action) related to climate change and adaptation (resulting e.g. precision farming methods, water-saving technologies, natural soil fertilizing, mulching in farming, no till technologies, etc.)			
<b>1.2.1. Joint activities which identify and contribute to the elimination of the cross-border pollution sources</b>	high	lasting	reversible	regional
	In terms of soil conditions improvement, this action might lead to fastest benefits. By eliminating pollution, both the direct pressure on soils and the indirect soil pollution (pollutants from water and air) might be significantly reduced.			
<b>1.2.2. Joint initiatives for ensuring the sustainable development of natural areas</b>	medium	lasting	reversible	regional
	The action/intervention may have an indirect soil protection impact. Increasing biodiversity, protecting and revitalizing complex ecosystems promotes the preservation of natural habitats, thus the organic matter supply of the soils in the area			

Specific objective / Action	Likely positive impact on environmental system			
	can be improved and soils can get relieved from burdensome effects. Preservation of green spaces has similar positive impacts.			
<b>1.2.3. Joint awareness raising and educational activities on environmental and nature protection topics in the border region</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	low	lasting	reversible	regional
	Some elements of the action (such as sustainable use of natural resources, awareness raising on the adverse effects of human consumption) may have a positive effect on soil conditions, in case soil exploitation gets reduced as a result of dissemination and awareness raising activities.			

### C) Actions with adverse effect on soil

None of the actions.

### D) Actions potentially also causing adverse effect on soil

Specific objective / Action	Potential negative impact on environmental system			
<b>2.2.1. Development of joint tourism products with joint marketing management of these products</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	low	periodic, annual	reversible	municipal
	<p>Key development directions of the Action, such as active/ ecotourism and water tourism development, can typically generate more traffic in areas characterized with rather sensitive soils (meadow soils, alluvial soils, etc.). The extent and geographical scope of loads is highly dependent on the number of visitors, but it is likely that only a few point-like or smaller areas may be affected.</p> <p>Recommended measures:</p> <ul style="list-style-type: none"> <li>Significant pressures on soils can be prevented by controlling pedestrian and car traffic of visitors.</li> </ul>			

### 4.1.2. Air

**No Actions of the HUSRB CBC Programme were identified as potentially leading to a permanent and significant increase in air pollutant emissions.** Although tourism developments imply a possible moderate emission increase, mainly from transport, they are not expected to have a significant impact on air pollution in the area due to the nature and volume of the planned developments. It is definitely worth mentioning that the Programme devotes dedicated resources, among other environmental elements, to the reduction of air emissions.

**A) Actions not affecting air quality**

- Actions under specific objective „1.1. Climate change adaptation, risk prevention”
- Actions under specific objective „2.1. Education and lifelong learning”
- 2.2.2. Cultural cooperation
- Actions under specific objective “3.1. Harmonious neighbourly relations through cooperation”

**B) Actions with a likely positive impact on air quality**

Specific objective / Action	Likely positive impact on environmental system			
<b>1.2. Biodiversity and reduced pollution</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	high	lasting	reversible	municipal
	Some of the actions under the specific objective “Biodiversity and reduced pollution”, among targeting other environmental elements, explicitly aim to reduce air pollutant emissions in particular by identifying sources of pollution, supporting pilot projects for pollution prevention, and environmental awareness raising through encouraging collaborations of this profile. All this, albeit with different efficiencies, obviously helps to mitigate air pollution problems in the development area.			
<b>3.1.1. Building up mutual trust, in particular by encouraging ‘people to people’ (P2P) actions</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	low	lasting	reversible	regional
	Among many elements of the action, above all, experience exchange on green urban management practices across local governments and municipalities, municipal management companies and other stakeholders can indirectly result in the improvement of municipal air quality via uptaking good practices and developing joint solutions. However, due to its indirect nature, the magnitude of the effect cannot be determined.			
<b>3.2.1. Capacity development of border crossing management and mobility</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	low	lasting	reversible	regional
	Most of the planned actions do not have an impact on air quality, as they are mainly aimed at improving the equipment and human resources of border crossing points. However, one of their aims is to reduce temporary congestion at borders, which, in addition to reducing waiting times, also contributes to reducing temporary local emissions of air pollutants from transport.			

C) Actions with adverse effect on air quality

None of the actions.

D) Actions potentially also causing adverse effect on air quality

Specific objective / Action	Potential negative impact on environmental system			
	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
<b>2.2.1. Development of joint tourism products with joint marketing management of these products;</b>  <b>2.2.3. Joint management of information for tourism and cultural purposes</b>	low	periodic, annual	reversible	point-like
	<p>As having same impact on air quality, these two tourism-related actions are treated together here within the environmental report. Enhancement of tourism, in particular due to the growing transportation needs, may lead to an increase in air pollutant emissions. At the same time, it should be emphasized that the key development directions of the HUSRB CBC Programme, such as development of active and ecotourism, as well as cultural tourism of regional significance, imply the lowest emissions out of all tourism sub-sectors. Consequently, tourism actions of the HUSRB CBC Programme can not be considered as posing high risk in terms of air quality.</p> <p>Recommended measures:</p> <ul style="list-style-type: none"> <li>When developing tourism infrastructure, efforts should be made to fully implement energy efficiency aspects, to increase the use of renewable energy, to give preference to low-emission modes of transport (e.g. enabling public transport access, to encourage cycling between attractions).</li> </ul>			

4.1.3. Noise and vibration

The actions defined in the HUSRB CBC Programme basically do not affect the noise or vibration pollution of the area. Accordingly, none of them contributes to a sustained increase in local noise and vibration exposure in excess of the relevant health limit values, on the other hand, it does not contribute to the reduction of such local impacts either. Among the supported activities, the potential for noise pollution may arise only in the case of outdoor cultural events with a larger number of visitors (limited to the period of the given event and to the surrounding settlements), which, however, can be effectively reduced or even eliminated by appropriate preventive measures.

A) Actions not having an effect related to noise and vibration exposure

- Actions under specific objective „1.1. Climate change adaptation, risk prevention”
- Actions under specific objective „1.2. Biodiversity and reduced pollution”
- Actions under specific objective „2.1. Education and lifelong learning”

- 2.2.1. Development of joint tourism products with joint marketing management of these products
- 2.2.3. Joint management of information for tourism and cultural purposes
- Actions under specific objective “3.1. Harmonious neighbourly relations through cooperation”
- Actions under specific objective „3.2. Border crossing management”

**B) Actions with a likely positive impact related to noise and vibration exposure**

None of the actions.

**C) Actions with adverse effect related to noise and vibration exposure**

None of the actions.

**D) Actions potentially also causing adverse effect related to noise and vibration exposure**

Specific objective / Action	Potential negative impact on environmental system			
	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
2.2.2. Cultural cooperation	low	one-off	reversible	point-like
	<p>Among the cultural programmes, events and festivals, there is a possibility of point-like, periodic noise pollution in the case of outdoor ones, the extent of which depends on the volume and circumstances of the event, however, significant noise exposure of affected communities can be avoided by preventive measures, also taking into account frequency.</p> <p>Recommended measures:</p> <ul style="list-style-type: none"> <li>• Events should be organized in accordance with noise protection aspects, efforts should be made not to schedule louder events for the night, to choose locations farther from residential areas, and to previously consult with affected community members.</li> </ul>			

**4.1.4. Surface waters and groundwater**

**By their nature, a major proportion of the Programme's actions do not make any impact on surface water or groundwater.** On the other hand, there are specific water management actions/interventions included in the document as well, which are all about to improve the status of surface water and groundwater. Slight negative effects can be predicted only in the case of water tourism actions, with negligible and manageable extent though.

**A) Actions not having an effect on surface water and groundwater**

- Actions under specific objective „2.1. Education and lifelong learning”
- 2.2.2. Cultural cooperation
- 2.2.3. Joint management of information for tourism and cultural purposes
- Actions under specific objective “3.1. Harmonious neighbourly relations through cooperation”
- Actions under specific objective „3.2. Border crossing management”

**B) Actions with a likely positive impact on surface water and groundwater**

Specific objective / Action	Likely positive impact on environmental system			
<b>1.1.2. Joint actions aimed to reduce the impact of climate change, addressing natural phenomena occurring as a consequence of climate change</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	high	lasting	reversible	regional
	The focal point of the action is to improve water management and reduce water related sensitivity of the area. Therefore, the overall quantitative and qualitative status of surface water and groundwater is expected to improve once the intervention gets implemented. By protecting the natural habitats, the status of the area's wetlands can also be improved, which leads to an enhancement of the status of waters, too.			
<b>1.1.3. Joint awareness raising and educational activities on causes and consequences of climate changeJoint</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	medium	lasting	reversible	regional
	Significant progress can be made in terms of water conservation, both among the population and agricultural enterprises. Within the framework of the action, engagement of both target groups is planned. Regarding agriculture, protecting the quantity of surface waters and groundwater is possible via applying water-saving technologies and drought-tolerant species. There are also many opportunities for community members for water saving (shift in watering practices, rainwater harvesting, etc.)			
<b>1.2.1. Joint activities which identify and contribute to the elimination of the cross-border pollution sources</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	high	lasting	reversible	regional
	The action can clearly improve the quality of surface waters and groundwater by eliminating pollution. Particular attention has to be drawn to the goal of reducing the amount of microplastics, which are currently one of the most problematic pollutants in water.			

Specific objective / Action	Likely positive impact on environmental system			
	<p>Recommended measures:</p> <ul style="list-style-type: none"> <li>In addition to the reduction of microplastics in natural waters, it is also appropriate to carry out pollutant assessment in case of drinking water supply. If necessary, supporting technical interventions are recommended as well.</li> </ul>			
1.2.2. Joint initiatives for ensuring the sustainable development of natural areas	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	medium	lasting	reversible	regional
	<p>By improving the status and revitalization of natural habitats, the status of natural waters also gets better. Significant parts of natural habitats are wetlands, thus revitalization also enhances water balance of the area. Natural plant associations also play a significant role in the filtration and purification of surface water.</p> <p>Recommended measures:</p> <ul style="list-style-type: none"> <li>Priority has to be given for revitalization and establishment of habitats and plant associations (coastal strips, wetlands, shelter belts, etc.) related to surface waters and agricultural areas should be given priority. Development of these habitats also serves the purposes of other interventions.</li> </ul>			
1.2.3. Joint awareness raising and educational activities on environmental and nature protection topics in the border region	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	low	lasting	reversible	regional
	<p>Some elements of the action (such as sustainable use of natural resources, awareness raising on the adverse effects of human consumption) may have a positive effect on the status of natural waters, if dissemination and awareness raising activities will contribute to reducing water consumption.</p>			

C) Actions with adverse effect on surface waters and groundwater

None of the actions.

D) Actions potentially also causing adverse effect on surface waters and groundwater

Specific objective / Action	Potential negative impact on environmental system			
2.2.1. Development of joint tourism products with joint marketing management of these products	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	low	periodic, annual	reversible	municipal
	<p>Water tourism is one of the development directions the action focuses on. In terms of the potentially affected water bodies, growing number of visitors may lead to an increased pressure on waters, even if assumed that environmental consciousness of water tourism participants is higher than average. The extent and geographical scope of impacts is highly dependent on the number of visitors, but is most likely to occur</p>			

	near the coastal water tourism infrastructure elements (boat ports and marinas, coastal accommodations, tourist facilities, nature trails, etc.).
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#### 4.1.5. Biodiversity, flora, fauna, habitats, Natura 2000 territories, nature reserves

**The Programme does not support major infrastructural developments; periodic pressure on habitats is likely to be caused only by some types of tourism actions. No significant negative impact is expected.** At the same time, indirect and direct positive effects can be expected as a result of several interventions. The Programme also includes specific habitat protection and revitalization measures generating positive impacts with a high probability and on a lasting basis. Spill-overs of water management, agriculture, climate change adaptation and pollution reduction related interventions may improve the status of habitats and protected areas, as well as increase the biodiversity of the area concerned.

##### A) Actions not having an effect on biodiversity, flora, fauna, and Natura 2000 territories, nature reserves

- 1.1.1. Joint development, coordination and improvement of the cross-border risk prevention and disaster management systems
- Actions under specific objective „2.1. Education and lifelong learning”
- 2.2.2. Cultural cooperation
- 2.2.3. Joint management of information for tourism and cultural purposes
- Actions under specific objective “3.1 Harmonious neighbourly relations through cooperation”
- Actions under specific objective „3.2. Border crossing management”

##### B) Actions with a likely positive impact on biodiversity, flora, fauna, and Natura 2000 territories, nature reserves

Specific objective / Action	Likely positive impact on environmental system			
	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
1.1.2. Joint actions aimed to reduce the impact of climate change, addressing natural phenomena occurring as a consequence of climate change	high	lasting	reversible	regional
	Being a multipurpose intervention, all of its elements may have a positive impact on wildlife and protected natural areas. Indirect effects may be generated by water management developments and measures aimed at reducing climate change exposure of agriculture. Considering biodiversity, measures targeting the protection of natural habitats may play a key role, which can clearly have a positive effect on both flora and fauna, and the condition of Natura 2000 sites. Though the action aims at reducing the			



Specific objective / Action	Likely positive impact on environmental system			
	impact of climate change, on the top of the spill-over effects, the planned measures themselves have a potential for improving the ecological condition of habitats, too.			
1.1.3. Joint awareness raising and educational activities on causes and consequences of climate changeJoint	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	low	lasting	reversible	regional
	Both the action by its nature, and its target groups (community members and farmers) can only have a limited direct impact on biodiversity. At the same time, potential beneficiaries can also include nature conservation organizations, which can entail implementing actions with direct positive effects on biodiversity and ecological status of protected areas.			
1.2.1. Joint activities which identify and contribute to the elimination of the cross-border pollution sources	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	high	lasting	reversible	regional
	The intervention is of paramount importance for wildlife, as the goal is to reduce pollution of air, soil and water, thus pressure on all habitats can be reduced.  Recommended measures: <ul style="list-style-type: none"> <li>One-off decontamination interventions are not sufficient to ensure lasting impact. Once the contamination sources have been identified, it is necessary to prevent further contamination.</li> </ul>			
1.2.2. Joint initiatives for ensuring the sustainable development of natural areas	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	high	lasting	reversible	regional
	In terms of habitats, this is the most important action of the whole programme, as the action just aims to improve the status of natural habitats. The revitalization and restoration of natural habitats has to be highlighted. It is forward-looking that the programme also emphasizes the issue of natural areas affected by ecotourism and active tourism, which ensures that the effects of different programme interventions do not cancel each other out, and that possible negative effects of tourism are also addressed within the programme itself.			
1.2.3. Joint awareness raising and educational activities on environmental and nature protection topics in the border region	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	medium	lasting	reversible	regional
	Environmental elements of the action (sustainable use of resources, increasing environmental awareness) may have indirect beneficial effect on wildlife. In addition, awareness raising and education activities specifically related to wildlife, natural habitats and biodiversity are also planned. Besides, the fact that the potential beneficiaries also include organizations responsible for the maintenance of protected natural areas ensures the positive effects on wildlife.			

C) Actions with adverse effect on biodiversity, flora, fauna, and Natura 2000 territories, nature reserves

None of the actions.

D) Actions potentially also causing adverse effect on biodiversity, flora, fauna, and Natura 2000 territories, nature reserves

Specific objective / Action	Potential negative impact on environmental system			
	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
2.2.1. Development of joint tourism products with joint marketing management of these products	low	periodic, annual	reversible	municipal
	<p>Water tourism is one of the development directions the action focuses on. In terms of the potentially affected water bodies, growing number of visitors may lead to an increased pressure on waters, even if assumed that environmental consciousness of water tourism participants is higher than average. The extent and geographical scope of impacts is highly dependent on the number of visitors, but is most likely to occur near the coastal water tourism infrastructure elements (boat ports and marinas, coastal accommodations, tourist facilities, nature trails, etc.).</p> <p>Recommended measures:</p> <ul style="list-style-type: none"> <li>Development of coastal infrastructural elements of water tourism should be avoided at protected or sensitive natural areas.</li> </ul>			

#### 4.1.6. Climate

With regard to climate, the expected effects of the planned Programme Actions is worth to be examined from two perspectives: once, their consequences on greenhouse gas emissions, second, their role in facilitating adaptation to the increasingly extreme climatic conditions.

**Overall, no actions within the HUSRB CBC Programme have been identified that would result in a lasting and definite pressure on or change the components of the climate system, or would hinder the efficient adaptation.** On the contrary, at most of the planned developments, positive expected effects tend to dominate from a climate perspective. Nevertheless, some very low environmental risks can be identified in case of the tourism and bordercrossing actions, which can however be effectively prevented by appropriate measures.

A) Actions not having an effect on climate as an environmental system

- Actions under specific objective „ 2.1. Education and lifelong learning”
- 2.2.2. Cultural cooperation

B) Actions with a likely positive impact on climate as an environmental system

Specific objective / Action	Likely positive impact on environmental system			
1.1.1. Joint development, coordination and improvement of the cross-border risk prevention and disaster management systems	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	medium	periodic, annual	reversible	point-like
	The action may play a significant role first of all in climate change adaptation, as the shift in climate parameters induce an increased frequency of extreme weather events (e.g. storms, torrential rains). The joint development of disaster management institutional systems through enhancing response capacity, and preparing the population for these critical weather situations, which are expected to recur in a few years time, will help to protect human life and property more effectively.			
1.1.2. Joint actions aimed to reduce the impact of climate change, addressing natural phenomena occurring as a consequence of climate change	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	high	lasting	reversible	regional
	In line with its title, the action will be effective in helping climate change adaptation, especially in the most vulnerable development areas: water management, agriculture and nature conservation. Out of the possible measures, only water retention is specifically mentioned by the Programme, which is definitely welcome, but this way the potential effectiveness of the other action areas cannot be thoroughly assessed at the given level of planning and specification of the Programme.  Recommended measures: <ul style="list-style-type: none"> <li>It is recommended that during Programme implementation a priority should be given to those solutions that, in addition to climate change adaptation contribution, also result in the mitigation of greenhouse gas emissions (e.g. agricultural practices that increase the organic matter content of soils).</li> </ul>			
1.1.3. Joint awareness raising and educational activities on causes and consequences of climate change	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	medium	lasting	reversible	regional
	The action essentially aims to raise awareness and train two target groups, farmers and community members, in relation to climate change and adaptation to it. We strongly support addressing both target groups; thanks to an effective communication, significant results might be achieved in the adaptation field, even more likely among farmers, who also have a direct financial interest. However, as generally at awareness raising activities, indirect positive effects can be expected, so no certain extent of impacts can be determined.			
1.2.1. Joint activities which identify and contribute to the	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	low	lasting	reversible	regional

Specific objective / Action	Likely positive impact on environmental system			
<b>elimination of the cross-border pollution sources</b>	The action has no direct impact on climate protection or adaptation. At the same time, exploring pollution sources and removing pollutants from the atmosphere, water bodies and soil may indirectly help to prevent pollution and reduce the volume of harmful activities resulting pollution, which, at the same time, may lead to a reduction in greenhouse gas emissions.			
<b>1.2.2. Joint initiatives for ensuring the sustainable development of natural areas</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	high	lasting	reversible	regional
	The action may have a direct impact on climate protection or adaptation, although this linkage is not mentioned in the Programme itself. Increasing biodiversity, protecting and revitalizing complex ecosystems will make natural and semi-natural areas more resilient towards the increasingly extreme climatic conditions. Preserving and expanding green spaces will also play an important role in climate protection by increasing carbon sequestration capacity.  Recommended measures: <ul style="list-style-type: none"> <li>Besides focusing on native species in the Programme implementation, it is also advised to support the protection and introduction of those which are able to adapt to climatic conditions expected in the future.</li> </ul>			
<b>1.2.3. Joint awareness raising and educational activities on environmental and nature protection topics in the border region</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	low	lasting	reversible	regional
	Although the action does not specify climate protection, environmental education may also have an (indirect) positive effect on climate protection, therefore it is definitely encouraged.			
<b>3.1.1. Building up mutual trust, in particular by encouraging 'people to people' (P2P) actions</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	medium	lasting	reversible	regional
	Among many elements of the action, above all, experience exchange on green urban management practices across local governments and municipalities, municipal management companies and other stakeholders can indirectly result in reducing greenhouse gas emissions and successful municipal adaptation. However, due to its indirect nature, the magnitude of the effect cannot be determined.			
<b>3.1.2. Actions supporting better cooperation governance</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	medium	lasting	reversible	regional
	A common feature of the numerous activities involved is that they aim to strengthen cross-border socio-economic cooperation. This can be considered beneficial from the			

Specific objective / Action	Likely positive impact on environmental system
	climate protection aspect, as the emergence of shorter supply chains and regional integrated labour markets will result overall in the reduction of transport and public transport needs and thus of greenhouse gas emissions.

C) Actions with adverse effect on climate as an environmental system

None of the actions.

D) Actions potentially also causing adverse effect on climate as an environmental system

Specific objective / Action	Potential negative impact on environmental system			
	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	low	periodic, annual	reversible	point-like
<b>2.2.1. Development of joint tourism products with joint marketing management of these products</b>  <b>2.2.3. Joint management of information for tourism and cultural purposes</b>	<p>As having same impact on the climate system, these two tourism-related actions are treated together here within the environmental report. Enhancement of tourism, in particular due to the growing transportation needs, operation of accommodation establishments and attractions, entail significant greenhouse gas emission, however, its level can be reduced by various means. At the same time, it should be emphasized that the key development directions of the HUSRB CBC Programme, above all development of active and ecotourism, imply the lowest emissions out of of all tourism sub-sectors. Furthermore, as these tourism types might replace long-distance travelling, perhaps even air travel, it is assumed (however, not justified) that they can even be beneficial from a climate protection point of view. Consequently, tourism actions of the HUSRB CBC Programme can not be considered as posing high risk in terms of climate protection.</p> <p>Recommended measures:</p> <ul style="list-style-type: none"> <li>When developing tourism infrastructure, efforts should be made to fully implement energy efficiency aspects, to increase the use of renewable energy, to give preference to low-emission modes of transport (e.g. enabling public transport access, to encourage cycling between attractions).</li> </ul>			

E) The nature of effects on climate cannot be determined at the planning level of the Programme

Specific objective / Action	Environmental impact cannot be determined on the basis of the plan			
	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
<b>3.2.1. Capacity development of border crossing management and mobility</b>	low	lasting	reversible	regional
	Most of the planned actions do not have any climate protection implications, at the same time, one can also count with a possible capacity development of the existing			

Specific objective / Action	Environmental impact cannot be determined on the basis of the plan
	<p>border crossing points. Although this may increase traffic locally, it may also eliminate the use of routes used so far. From climate protection point of view, the total volume of traffic in the area is decisive, but its extent can only be assessed after a thorough survey on the affected roads' traffic conditions.</p> <p>Recommended measures:</p> <ul style="list-style-type: none"> <li>Should a new border crossing point be established or an existing one be extended, the related decision should be made on the basis of current and future modeled traffic data for the road sections concerned, in order to avoid an increase in road traffic and thus GHG emissions from transport in the overall area.</li> </ul>

#### 4.1.7. Built environment, landscape, settlement surroundings, and cultural heritage

**Overall, no actions within the HUSRB CBC Programme have been identified that would endanger the built and urban environment, cultural heritage, and landscape values.** On the contrary, implementation of majority of the planned developments is expected to have a positive effect on the state of the systems and values in question.

##### A) Actions not having an effect on the built environment, landscape, settlement surroundings, and cultural heritage:

- 1.2.1. Joint activities which identify and contribute to the elimination of the cross-border pollution sources
- 1.2.2. Joint initiatives for ensuring the sustainable development of natural areas
- Actions under specific objective „2.1. Education and lifelong learning”
- Actions supporting specific objective “3.1. Harmonious neighbourly relations through cooperation”
- 3.2.1. Capacity development of border crossing management and mobility

##### B) Actions with a likely positive impact on the built environment, landscape, settlement surroundings, and cultural heritage

Specific objective / Action	Likely positive impact on environmental system			
1.1.1. Joint development, coordination and improvement of	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
		high	lasting	reversible

Specific objective / Action	Likely positive impact on environmental system			
<b>the cross-border risk prevention and disaster management systems</b>	One of the explicit goals of the joint development of disaster management institutional systems and the targeted preparation of the population is the conservation of the technical condition of the built environment, above all buildings and constructions. Developments also supported by the Programme with a risk prevention aim play a particularly important role.			
<b>1.1.2. Joint actions aimed to reduce the impact of climate change, addressing natural phenomena occurring as a consequence of climate change</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	high	lasting	reversible	regional
	<p>The planned actions focus on facilitating the adaptation of sectors being particularly vulnerable to climate change, such as water management, agriculture and nature conservation. Among the environmental elements and systems assessed in this chapter, the individual actions serve in the first place the preservation of the landscape structure and landscape values, primarily by promoting the preservation of the natural endowments which determine the landscape features, and partly the connected forms of farming under a changing climate.</p> <p>Recommended measures:</p> <ul style="list-style-type: none"> <li>It is important that climate adaptation related developments within all affected sectors should fit to the traditional landscape conditions, and strive for their preservation and possible revitalization (e.g. maintenance and establishment of agroforestry systems in agricultural adaptation).</li> </ul>			
<b>1.1.3. Joint awareness raising and educational activities on causes and consequences of climate change</b>  <b>1.2.3. Joint awareness raising and educational activities on environmental and nature protection topics in the border region</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	low	lasting	reversible	regional
	<p>The Programme contains two specific actions aiming at awareness raising activities. The climate change related one essentially aims to raise awareness and train two target groups, farmers and community members, in relation to climate change and adaptation to it. While awareness raising of the former target group can primarily contribute to landscape preservation (see the description at the previous action), the knowledge transfer targeting the population may add to the protection of the built environment and its preservation among more extreme climatic conditions. Environmental awareness raising may have a similar effect. However, the beneficial effects are indirect, so their magnitude is uncertain.</p>			
<b>2.2.2. Cultural cooperation</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	medium	lasting	reversible	regional
	<p>Although the Programme does not define local cultural heritage conservation as an explicit goal of the supported cultural cooperations, it is obvious that in the framework</p>			

Specific objective / Action	Likely positive impact on environmental system			
	of such regional cooperations and events there are wide opportunities to nurture, strengthen and present the local cultural intangible heritage.			
2.2.1. Development of joint tourism products with joint marketing management of these products	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	medium	lasting	reversible	regional
2.2.3. Joint management of information for tourism and cultural purposes	The two tourism-related actions have a joint impact on the environmental elements and systems concerned, as both have the same ultimate goal: to boost (most of all) active and eco-tourism as well as cultural tourism in the region. All this provides an opportunity for a targeted protection and presentation of the local intangible and built cultural heritage, and facilitates the wider recognition of their values by the regional population, and thus indirectly encourages the protection and preservation of these values in forms of bottom-up initiatives. Due to the small extent of the planned tourism infrastructure developments, it is not expected that they would significantly affect the condition of the built environment.			
3.1.1. Building up mutual trust, in particular by encouraging 'people to people' (P2P) actions	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	medium	lasting	reversible	regional
	Among the many possible elements of the action, the establishment and strengthening of cultural cooperations may play a significant role in the preservation of local intangible cultural heritage, while experience exchange on green urban management practices across local governments and municipalities, municipal management companies and other stakeholders primarily serves the protection of the built environment. However, due to its indirect nature, the magnitude of the effect cannot be determined.			

**C) Actions with adverse effect on the built environment, landscape, settlement surroundings, and cultural heritage**

None of the actions.

**D) Actions potentially also causing adverse effect on the built environment, landscape, settlement surroundings, and cultural heritage**

None of the actions.

**4.1.8. Human health, and quality of life**

**Overall, no actions within the HUSRB CBC Programme have been identified that would endanger the quality of life, mental and physical health of those living in the Programme area.** On the contrary, implementation of majority of the planned developments is rather expected to have a positive effect in terms of both health status and quality of life.



A) Actions not having an effect on human health and quality of life

- 3.2.1. Capacity development of border crossing management and mobility

B) Actions with a likely positive impact on human health and quality of life

Specific objective / Action	Likely positive impact on environmental system			
1.1.1. Joint development, coordination and improvement of the cross-border risk prevention and disaster management systems	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	low	periodic, annual	reversible	point-like
	Above all, the action may play a role in natural or antropogenic hazardous events directly endangering human life. The planned developments will improve the response capacity and speed of disaster management organizations, so that they will be able to protect more effectively than at present the health and, in extreme cases, the lives of the population under threat, as well as their quality of life via increasing the safety of their property.			
1.1.2. Joint actions aimed to reduce the impact of climate change, addressing natural phenomena occurring as a consequence of climate change	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	low	lasting	reversible	regional
	The planned actions focus on facilitating the adaptation of sectors being particularly vulnerable to climate change, such as water management, agriculture and nature conservation. Contribution to the improvement of the quality of life of the people living in the area is provided by nature conservation through the maintenance of ecosystem services, whilst by agricultural adaptation capacity development primarily through the preservation of the conditions of high-quality local food supply, local economies and employment opportunities.			
1.1.3. Joint awareness raising and educational activities on causes and consequences of climate change	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	medium	lasting	reversible	regional
	The action essentially aims to raise awareness and train two target groups, farmers and community members, in relation to climate change and adaptation to it. Awareness raising of the latter target group is of key importance in terms of the preventing adverse climate change effects on public health, as individual decisions and behavioral patterns play a decisive role in this field. However, as generally at awareness raising activities, indirect positive effects can be expected, so no certain extent of impacts can be determined.			
1.2.1. Joint activities which identify and contribute to the	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	low	lasting	reversible	regional

Specific objective / Action	Likely positive impact on environmental system			
<b>elimination of the cross-border pollution sources</b>	The action contributes to the prevention of diseases and health damage attributable to environmental pollution, via both preventing and eliminating pollution of the air, surface water and groundwater, as well as soil. Although these effects undoubtedly exist, they can not be quantified due to their rather indirect nature.			
<b>1.2.2. Joint initiatives for ensuring the sustainable development of natural areas</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	medium	lasting	reversible	regional
	Protection of natural values, natural and semi-natural habitats, and endangered species play a fundamental role in ecosystem services maintenance, the latter being crucial for preserving the physical and mental health of the population living here. The establishment of facilities providing information on natural values, in particular educational and hiking trails that facilitate outdoor activities, further enhances the importance of the planned developments in health maintenance.			
<b>1.2.3. Joint awareness raising and educational activities on environmental and nature protection topics in the border region</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	low	lasting	reversible	regional
	The action contributes indirectly to improving people's health and quality of life, mainly through the promotion of environmentally and health-conscious behaviours and outdoor activities. However, due to the indirect nature of the effects, in line with those previously described for other awareness raising activities, their magnitude can only be estimated.			
<b>2.1. Education and lifelong learning</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	high	lasting	reversible	regional
	Although the vast majority of the actions envisaged under the specific objective do not directly affect the health status of the population, they clearly have a positive effect on the quality of life of the people living here. Increasing qualifications levels, enhancing digital literacy, and targeted mentoring of vulnerable social groups are, without exception, measures which all serve as a basis for social empowerment and thus offer a potential for a higher quality of life. Achieving a higher social status is typically accompanied by general health improvement. It should be highlighted that under the examined objective also awareness raising activities specifically on healthy lifestyle can be supported, which can obviously have a positive effect on the health status of the population.			
<b>2.2. Culture and tourism</b>	<b>Likelihood of the impact</b>	<b>Duration and frequency of the impact</b>	<b>Reversibility of the impact</b>	<b>Geographical scope of the impact</b>
	low	lasting	reversible	regional

Specific objective / Action	Likely positive impact on environmental system			
	The activities eligible under the specific objective "Culture and Tourism", as described at the previous objective, are essentially aimed at improving the quality of life and, to a lesser extent, general health conditions. The present assessment focuses primarily on the quality of life and health of the people living in the area covered by the Programme, cultural collaborations may be beneficial thereof, as tourism developments may have a positive effect primarily on visitors' mental and physical health and quality of life.			
<b>3.1.2. Actions supporting better cooperation governance</b>	Likelihood of the impact	Duration and frequency of the impact	Reversibility of the impact	Geographical scope of the impact
	medium	lasting	reversible	regional
	Among the small projects supported under the current specific objective, as well as activities promoting cross-border cooperation, there are several that directly support the mental and physical health of the people living here (such as development of social and health institutions, active aging programmes), while activities threatening human health and quality of life are not included in the assessed actions of the Programme. A vizsgált specifikus cél alatt támogatott kis projektek, valamint határmenti együttműködések és ösztönző tevékenységek között több olyan is szerepel, amely közvetlenül támogatja az itt élők mentális és fizikai egészségét (ld. szociális egészségügyi intézmények fejlesztése, idősek aktivitásának megőrzésére irányuló programok), ugyanakkor emberi egészséget, életminőséget veszélyeztető tevékenység nem szerepel a Program vizsgálat akciói keretében.			

**C) Actions with adverse effect on human health and quality of life**

None of the actions.

**D) Actions potentially also causing adverse effect on human health and quality of life**

None of the actions.

**4.1.9. Environmental consciousness**

Overall, no actions within the HUSRB CBC Programme have been identified that could in any way damage the environmental consciousness level of those living in the area covered by the Programme or even its visitors. On the contrary, most of the planned developments are to raise the level of environmental consciousness either in a targeted way or as a spillover effect.

The various actions' effects on environmental consciousness are assessed in a framework being different from the above chapters. It is because this effect is the result of different processes at each and every activity.

#### A) Awareness raising actions with a direct impact on environmental consciousness

The Programme includes several environmental, nature and climate protection related awareness raising activities, all obviously, though not declared, with the primary goal to raise the environmental consciousness of the population. The actual effects depend on the quality, quantity and frequency of the programmes organized, which is impossible to estimate in advance; however, involving professionals and organizations with relevant experience and references in the implementation will do contribute to increase the environmental awareness raising impact of the initiatives. In particular, the following actions and activities of the Programme include environmental awareness raising elements:

- 1.1.3. Joint awareness raising and educational activities on causes and consequences of climate change
- 1.2.2. Joint initiatives for ensuring the sustainable development of natural areas
- 1.2.3. Joint awareness raising and educational activities on environmental and nature protection topics in the border region

#### B) Actions with an indirect impact on environmental consciousness

In addition to the above mentioned actions and activities specifically aiming at awareness raising, the Programme also includes a number of such actions which indirectly call the attention of people living in the area (or at least those affected by the given projects) on the importance of protecting environmental elements via providing information on, preserving and protecting the local environmental, natural, landscape and cultural values and heritage. This category includes the following actions of the Programme:

- 1.1.2. Joint actions aimed to reduce the impact of climate change, addressing natural phenomena occurring as a consequence of climate change
- 1.2.1. Joint activities which identify and contribute to the elimination of the cross-border pollution sources
- Actions under specific objective „ 2.2. Culture and tourism”
- 3.1.1. Building up mutual trust, in particular by encouraging ‘people to people’ (P2P) actions
- 3.1.2 Actions supporting better cooperation governance

#### C) Actions with no effect or without an identifiable effect on environmental consciousness

Finally, the Programme of course also includes actions that are not directly or indirectly related to formation of environmental consciousness. At the same time, even in case of these, it may arise that these also have the potential to raise the level of population’s environmental consciousness to a

certain extent, not to be identified (e.g. such topics may appear in trainings). The following actions fall into this category:

- 1.1.1. Joint development, coordination and improvement of the cross-border risk prevention and disaster management systems
- Actions under specific objective „2.1. Education and lifelong learning”
- 3.2.1. Capacity development of border crossing management and mobility

## 4.2. Summary of environmental impacts

The table below summarizes the environmental impacts of each action presented in detail in Chapter 4.1.

Actions	Soil	Air	Noise, vibration	Water	Natural values	Climate	Built env., landscape	Human health	Env. consciousness
1.1.1. Joint development, coordination and improvement of the cross-border risk prevention and disaster management systems	0	0	0	0	0	+2	+3	+1	0
1.1.2. Joint actions aimed to reduce the impact of climate change, addressing natural phenomena occurring as a consequence of climate change	+3	0	0	+3	+3	+3	+3	+1	+1
1.1.3. Joint awareness raising and educational activities on causes and consequences of climate change	+2	0	0	+2	+2	+2	+1	+2	+3
1.2.1. Joint activities which identify and contribute to the elimination of the cross-border pollution sources	+3	+3	0	+3	+3	+1	0	+1	+1
1.2.2. Joint initiatives for ensuring the sustainable development of natural areas	+2	+1	0	+2	+3	+2	0	+2	+2
1.2.3. Joint awareness raising and educational activities on environmental and nature protection topics in the border region	+1	+2	0	+1	+2	+1	+1	+1	+3
2.1.1. Lifelong learning for social inclusion, social cohesion and environmentally sustainable and healthy digitalization	0	0	0	0	0	0	0	+2	0
2.1.2. Joint development of training, mentoring and outreach programs to combat and reverse early school leaving	0	0	0	0	0	0	0	+2	0

Actions	Soil	Air	Noise, vibration	Water	Natural values	Climate	Built env., landscape	Human health	Env. consciousness
2.1.3. Joint development of vocational training	0	0	0	0	0	0	0	+2	0
2.2.1. Development of joint tourism products with joint marketing management of these products	-1	-1	0	-1	-1	-1	+2	+1	+1
2.2.2. Cultural cooperation	0	0	-1				+2	+1	+1
2.2.3. Joint management of information for tourism and cultural purposes	-1	-1	0	-1	-1	-1	+2	+1	+1
3.1.1. Building up mutual trust, in particular by encouraging 'people to people' (P2P) actions	0	+2	0	0	0	+2	+2	+1	+1
3.1.2. Actions supporting better cooperation governance	0	0	0	0	0	+2	0	+2	+1
3.2.1. Capacity development of border crossing management and mobility	0	+1	0	0	0	?	0	0	0

**Legend**

- +3 positive environmental impact with a high probability
- +2 positive environmental impact with a medium probability
- +1 positive environmental impact with a low probability
- 0 no identifiable environmental impact
- 1 negative environmental impact with a low probability
- 2 negative environmental impact with a medium probability
- 3 negative environmental impact with a high probability
- ? direction of the environmental impact depending on the Programme implementation

Figure 8: Environmental impacts of the actions in HUSRB CBC Programme

Based on the results of the environmental assessment performed, it can be concluded that **the Programme does not contain any action, the implementation of which would be likely to endanger the status of any environmental elements or systems.** On the contrary, a significant part of the interventions implemented in the frame of the Programme actions specifically aim at, directly or indirectly, to reduce the exploitation of and pressure on environmental elements and systems, as well to improve the quality of human life, harmonized with environmental interests. Actions with a positive environmental impact are mainly associated with the specific objectives “Biodiversity and Pollution Prevention” and “Adaptation to Climate Change, Risk Prevention”. While some of them aim at directly reducing the anthropogenic impacts on certain environmental elements (e.g. identification of pollution sources), others contribute to the preservation or improvement of the status of environmental elements and systems by facilitating climate change adaptation. It is also forward-looking that the Programme supports the implementation of awareness raising programmes in several environmental and sustainability related topics. This statement is certainly true despite the fact that, assuming that their environmental effectiveness is also influenced by external circumstances being independent from the Programme, only moderate environmental benefits have been attributed to such actions in the evaluation.

**Within the entire Programme, the possibility of potentially resulting in an increasing exploitation of and pressure on environmental elements and systems might come up in case of only one intervention, that is tourism development.** It is well known that tourism can have unfavourable environmental effects, above all by raising the demand for transport, operating tourism facilities, disturbing natural, semi-natural habitats, flora and fauna. At the same time, the fact that the Programme promotes soft types of tourism, such as active and ecotourism, as well as small-scale cultural tourism, clearly suggests that **the Programme's tourism development actions will not lead to a large-scale use and stress on the environmental elements and systems.** However, a special attention will have to be paid on its prevention when implementing the Programme, for which several recommendations are provided by the current environmental report.

Finally, **it is worth mentioning that many of the actions of the Programme are basically not related at all to the protection of environmental values.** In particular, actions under the "Education and Lifelong Learning", "Cross-border institutional and civil cooperation" specific objectives fall into this category. But even in these cases, some aspects can be identified that, if only at the local level or in a very indirect way, can be related to the preservation of environmental elements and systems (e.g. reduced traffic congestion at border crossings results in improved local air quality; a higher qualification level helps to spread environmentally conscious behaviour patterns).

Considering the expected extent of impacts driven by the Programme on various environmental elements and systems, it can be determined that **wildlife seems to be the most positively affected.** The Programme also provides significant incentives for the protection of cultural heritage, in particular intangible cultural heritage, and for effective climate change adaptation. By implementing the Programme, the least progress is expected in the field of air pollution, as well as noise and vibration exposure prevention, which is, however, partly counteracted by the fact that these pressures are not considered to be significant in the area covered by the Programme.

## **5. RECOMMENDED MEASURES TO PROTECT ENVIRONMENT, GUIDELINES FOR LOWER HIERARCHY LEVELS**

As stated in the previous chapter, the implementation of the Programme is not expected to lead to a significant deterioration of the state of the environment, on the contrary, it will help to resolve and mitigate many existing environmental conflicts. Nevertheless, the implementation manner of the Programme play a key role in achieving the positive environmental impacts. The following is a summary of our proposals in this regard, grouped according to the specific objectives of the Programme (justification of proposals is provided in Chapter 4.1).

Specific objective	Proposal
1.1. Climate change adaptation, risk prevention	<ul style="list-style-type: none"> <li>• In case of surface water retention projects, occasional or permanent flooding of soils of poor quality is recommended only in order to protect arable land.</li> <li>• It is recommended that during Programme implementation a priority should be given to those solutions that, in addition to climate change adaptation contribution, also result in the mitigation of greenhouse gas emissions (e.g. agricultural practices that increase the organic matter content of soils).</li> <li>• It is important that climate adaptation related developments within all affected sectors should fit to the traditional landscape conditions, and strive for their preservation and possible revitalization (e.g. maintenance and establishment of agroforestry systems in agricultural adaptation).</li> </ul>
1.2. Biodiversity and reduced pollution	<ul style="list-style-type: none"> <li>• In addition to the reduction of microplastics in natural waters, it is also appropriate to carry out pollutant assessment in case of drinking water supply. If necessary, supporting technical interventions is recommended as well.</li> <li>• One-off decontamination interventions are not sufficient to ensure lasting impact. Once the contamination sources have been identified, it is necessary to prevent further contamination.</li> <li>• Priority has to be given for revitalization and establishment of habitats and plant associations (coastal strips, wetlands, shelter belts, etc.) related to surface waters and agricultural areas should be given priority. Development of these habitats also serves the purposes of other interventions.</li> <li>• Besides focusing on native species in the programme implementation, it is also advised to support the protection and introduction of those which are able to adapt to climatic conditions expected in the future.</li> </ul>
2.1. Education and lifelong learning	-
2.2. Culture and tourism	<ul style="list-style-type: none"> <li>• Significant pressures on soils can be prevented by controlling pedestrian and car traffic of visitors.</li> <li>• When developing tourism infrastructure, efforts should be made to fully implement energy efficiency aspects, to increase the use of renewable energy, to give preference to low-emission modes of transport (e.g. enabling public transport access, to encourage cycling between attractions).</li> <li>• Development of coastal infrastructural elements of water tourism should be avoided at protected or sensitive natural areas.</li> <li>• Events should be organized in accordance with noise protection aspects, efforts should be made not to schedule louder events for the night, to choose locations farther from residential areas, and to previously consult with affected community members.</li> </ul>
3.1 Harmonious neighbourly relations through cooperation	-
3.2 Border crossing management	<ul style="list-style-type: none"> <li>• Should a new border crossing point be established or an existing one be extended, the related decision should be made on the basis of current and future modeled traffic data for the road sections concerned, in order to avoid an increase in road traffic and thus GHG emissions from transport in the overall area.</li> </ul>



## 6. ASSESSMENT OF THE MONITORING SYSTEM

The primary goal of the Programme's monitoring system is to record the scope of jointly implemented activities, regardless of the development area of activities. In view of this, the current indicators assigned to the Programme objectives are not suitable for measuring the impact of the implemented grants on the environment or sustainability, neither for monitoring many other significant horizontal objectives (e.g. gender equality). Opportunity for assessment and evaluation of the changes in environmental status induced by the Programme is provided by country-level monitoring systems operated by various national bodies in both participating countries. Spatial breakdown of the data recorded in these does not always allow a precise identification of the impacts attributable to the Programme. At the same time, their indisputable advantage is collecting and registering data on the basis of a professionally sound, uniform methodology.

Based on the above, it is not considered appropriate to establish an independent monitoring system within the framework of the Programme to register environmental and sustainability aspects. At the same time, it is essential to establish a register of the main characteristics of environmentally relevant developments, offering an opportunity to easier to assign those data available in national databases to the Programme developments. These indicators are needed for developments under the "Climate change adaptation, risk prevention", "Biodiversity and reduced pollution" and "Culture and tourism" objectives, most of which referring to the characteristics of the area affected by the development. In view of all this, it is considered that in the framework of the interim or ex-post evaluation of the Programme, the impact of the implemented developments on environmental elements will be detectable. Indicators recommended to be collected and recorded:

- exact location and extent of areas affected by a development, in ha or m<sup>2</sup> depending on the project
- land use classification of areas affected by a development, identification of potentially affected protected natural areas and Natura2000 areas;
- extent urban green spaces established, in ha, if relevant)
- area of the paved surfaces, in m<sup>2</sup>, if relevant)
- number of implemented cultural or tourist events, day / year, if relevant

## 7. NON-TECHNICAL SUMMARY

### Main characteristics of HUSRB CBC programme

The cooperation area of the Interreg-IPA III CBC Programme Hungary-Serbia 2021-2027 (hereinafter: Programm) covers a territory of 34 335 km<sup>2</sup>, homes for 2,76 million citizens.

The analysed area of the Programme on the Serbian side includes the following 7 districts, equivalent to NUTS 3 regions ('okrug', Romanised: 'okrug'), of the Autonomous Province of Vojvodina:

- RS121 - Zapadnobački okrug (West Bačka)
- RS122 - Južnobačanski okrug (South Banat)
- RS123 - Južnobački okrug (South Bačka)
- RS124 - Severnobačanski okrug (North Banat)
- RS125 - Severnobački okrug (North Bačka)
- RS126 - Srednjobanatski okrug (Central Banat)
- RS127 - Sremski okrug (Srem)

The analysed area of the Programme on the Hungarian side includes the following 2 NUTS 3 regions ('megye'):

- HU331 - Bács-Kiskun megye (Bács-Kiskun county)
- HU333 – Csongrád-Csanád megye (Csongrád-Csanád county)



The analysed territory of the HUSRB CBC Programme  
(Source: Territorial analysis prepared by CESCO, 2020.)

Main objectives and actions of the Programme are as follows:

Priority	Specific Objective	Action
1. A greener Region	1.1 Climate change adaptation, risk prevention	1.1.1 Joint development, coordination and improvement of the cross-border risk prevention and disaster management systems
		1.1.2 Joint actions aimed to reduce the impact of climate change, addressing natural phenomena occurring as a consequence of climate change
		1.1.3 Joint awareness raising and educational activities on causes and consequences of climate change
	1.2 Biodiversity and reduced pollution	1.2.1 Joint activities which identify and contribute to the elimination of the cross-border pollution sources
		1.2.2 Joint initiatives for ensuring the sustainable development of natural areas
		1.2.3 Joint awareness raising and educational activities on environmental and nature protection topics in the border region

Priority	Specific Objective	Action
2. Enhancing the human and cultural values	2.1 Education and lifelong learning	2.1.1 Lifelong learning for social inclusion, social cohesion and environmentally sustainable and healthy digitalization
		2.1.2 Joint development of training, mentoring and outreach programs to combat and reverse early school leaving
		2.1.3 Joint development of vocational training
	2.2 Culture and tourism	2.2.1 Development of joint tourism products with joint marketing management of these products
		2.2.2 Cultural cooperation
		2.2.3 Joint management of information for tourism and cultural purposes
3. Cross-border institutional and civil cooperation	3.1 Harmonious neighbourly relations through cooperation	3.1.1 Building up mutual trust, in particular by encouraging 'people to people' (P2P) actions
		3.1.2 Actions supporting better cooperation governance
	3.2 Border crossing management	3.2.1 Capacity development of border crossing management and mobility

### Current environmental conflicts and problems in programme area and the likely evolution thereof without implementation of the programme

Based on the situation analysis, **the following main environmental conflicts and challenges can be identified in the programme area:**

- The water regime of the main rivers is very variable: floods and water scarcity are serious problems.
- The levels of arsenic in some of the water catchments cause problems. According to the water aquifer geochemical layers, the arsenic is of natural origin. Drinking water supplies are contaminated with arsenic in more than 100 settlements on the Hungarian side of the programme area, and this problem is present on the Serbian territories close to the border as well. The amount of arsenic in produced drinking water in the artesian waters of the region exceeds the European threshold of 10.0 µg/l. There is a high amount of methane, iron, manganese, ammonium, and boron components - of a natural origin, just like the arsenic - in some of the water resources as well, which causes problems.
- The quality of drinking water in Vojvodina AP is unsatisfactory, they are using groundwater for water supply. These groundwaters contain more arsenic, ammonia, organic matters, borate, sodium, iron, and manganese than allowed.
- A small number of local governments in the Republic of Serbia have a municipal wastewater treatment plant, with the largest cities (Belgrade, Novi Sad and Nis) discharging untreated wastewater to recipients.
- Low share of natural areas, unfavourable processes observed on the remaining natural areas (e.g. drying out wetlands). Degradation and transformation of vegetation, spreading of invasive alien species due to the climate change and human activities of the past few decades.
- Aridification (e.g. droughts, forest fires, decreasing groundwater level and deteriorating quality) affecting the cross-border natural environment, natural resources, and agricultural, horticultural and forestry production bases. Growing production costs and risks to economic

activities heavily relying on climate conditions turning increasingly unfavourable because of above average vulnerability to climate change.

- Increasing frequency and intensity of hydrological (e.g. flooding, inland water) and extreme meteorological phenomena (e.g. sudden downpours, storms, hails). Need for better harmonised water management and water protection.

**A lack of implementation of the Programme might cause effects of different orientation on the state of the environmental elements and systems.**

- A lack of implementing the actions explicitly addressing environmental challenges (under specific objectives “Climate change adaptation, risk prevention” and “Biodiversity and reduced pollution”) may result in the persistence or possible escalation of existing environmental conflicts. Due to the fact that the Programme's environment-focussed actions contribute the most to the preservation of natural and semi-natural habitats, and biodiversity, as well as to the adaptation to the more and more extreme climatic conditions, the lack of planned developments would primarily have an adverse effect on the vulnerability of sectors particularly exposed to climate change (such as water management, agriculture, forestry).
- Contrary to the above, the absence of actions with an environmental risk, limited to tourism development within the Programme, would logically avoid environmental pressures arising from this activity. However, due to the extremely low level of associated environmental risks (see Chapter 4.1 for details), the planned development of tourism is unlikely to have a significant impact on the state of the environment, i.e. the absence of these elements of the Programme would not result in significant environmental benefits.

**Likely environmental effects of programme implementation**

Based on the results of the environmental assessment performed, it can be concluded that **the Programme does not contain any action, the implementation of which would be likely to endanger the status of any environmental elements or systems.** On the contrary, **a significant part of the interventions implemented in the frame of the Programme actions specifically aim at, directly or indirectly, to reduce the exploitation of and pressure on environmental elements and systems, as well to improve the quality of human life,** harmonized with environmental interests. Actions with a positive environmental impact are mainly associated with the specific objectives “Biodiversity and Pollution Prevention” and “Adaptation to Climate Change, Risk Prevention”. While some of them aim at directly reducing the anthropogenic impacts on certain environmental elements (e.g. identification of pollution sources), others contribute to the preservation or improvement of the status of environmental elements and systems by facilitating climate change adaptation. It is also forward-looking that the Programme supports the implementation of awareness raising programmes in several environmental and sustainability related topics. This statement is certainly true despite the fact that, assuming that their environmental effectiveness is also influenced by external circumstances being independent from the Programme, only moderate environmental benefits have been attributed to such actions in the evaluation.

**Within the entire Programme, the possibility of potentially resulting in an increasing exploitation of and pressure on environmental elements and systems might come up in case of only one intervention, that is tourism development.** It is well known that tourism can have unfavourable environmental effects, above all by raising the demand for transport, operating tourism facilities,

disturbing natural, semi-natural habitats, flora and fauna. At the same time, the fact that the Programme promotes soft types of tourism, such as active and ecotourism, as well as small-scale cultural tourism, clearly suggests that **the Programme's tourism development actions will not lead to a large-scale use and stress on the environmental elements and systems**. However, a special attention will have to be paid on its prevention when implementing the Programme, for which several recommendations are provided by the current environmental report.

Finally, **it is worth mentioning that many of the actions of the Programme are basically not related at all to the protection of environmental values**. In particular, actions under the "Education and Lifelong Learning", "Better Governance" and "Safer Europe" objectives fall into this category. But even in these cases, some aspects can be identified that, if only at the local level or in a very indirect way, can be related to the preservation of environmental elements and systems (e.g. reduced traffic congestion at border crossings results in improved local air quality; a higher qualification level helps to spread environmentally conscious behaviour patterns).

Considering the expected extent of impacts driven by the Programme on various environmental elements and systems, it can be determined that **wildlife seems to be the most positively affected**. The Programme also provides significant incentives for the protection of cultural heritage, in particular intangible cultural heritage, and for effective climate change adaptation. By implementing the Programme, the least progress is expected in the field of air pollution, as well as noise and vibration exposure prevention, which is, however, partly counteracted by the fact that these pressures are not considered to be significant in the area covered by the Programme.

The table below summarizes the environmental impacts of each action presented in detail in the environmental report.

Actions	Soil	Air	Noise, vibration	Water	Natural values	Climate	Built env., landscape	Human health	Env. consciousness
1.1.1. Joint development, coordination and improvement of the cross-border risk prevention and disaster management systems	0	0	0	0	0	+2	+3	+1	0
1.1.2. Joint actions aimed to reduce the impact of climate change, addressing natural phenomena occurring as a consequence of climate change	+3	0	0	+3	+3	+3	+3	+1	+1
1.1.3. Joint awareness raising and educational activities on causes and consequences of climate change	+2	0	0	+2	+2	+2	+1	+2	+3
1.2.1. Joint activities which identify and contribute to the elimination of the cross-border pollution sources	+3	+3	0	+3	+3	+1	0	+1	+1
1.2.2. Joint initiatives for ensuring the sustainable development of natural areas	+2	+1	0	+2	+3	+2	0	+2	+2

Actions	Soil	Air	Noise, vibration	Water	Natural values	Climate	Built env., landscape	Human health	Env. consciousness
1.2.3. Joint awareness raising and educational activities on environmental and nature protection topics in the border region	+1	+2	0	+1	+2	+1	+1	+1	+3
2.1.1. Lifelong learning for social inclusion, social cohesion and environmentally sustainable and healthy digitalization	0	0	0	0	0	0	0	+2	0
2.1.2. Joint development of training, mentoring and outreach programs to combat and reverse early school leaving	0	0	0	0	0	0	0	+2	0
2.1.3. Joint development of vocational training	0	0	0	0	0	0	0	+2	0
2.2.1. Development of joint tourism products with joint marketing management of these products	-1	-1	0	-1	-1	-1	+2	+1	+1
2.2.2. Cultural cooperation	0	0	-1				+2	+1	+1
2.2.3. Joint management of information for tourism and cultural purposes	-1	-1	0	-1	-1	-1	+2	+1	+1
3.1.1. Building up mutual trust, in particular by encouraging 'people to people' (P2P) actions	0	+2	0	0	0	+2	+2	+1	+1
3.1.2. Actions supporting better cooperation governance	0	0	0	0	0	+2	0	+2	+1
3.2.1. Capacity development of border crossing management and mobility	0	+1	0	0	0	?	0	0	0

**Legend**

<b>+3</b>	positive environmental impact with a high probability
<b>+2</b>	positive environmental impact with a medium probability
<b>+1</b>	positive environmental impact with a low probability
<b>0</b>	no identifiable environmental impact
<b>-1</b>	negative environmental impact with a low probability
<b>-2</b>	negative environmental impact with a medium probability
<b>-3</b>	negative environmental impact with a high probability
<b>?</b>	direction of the environmental impact depending on the Programme implementation

### Recommended measures to protect environment, guidelines for lower hierarchy levels

As stated in the previous chapter, the implementation of the Programme is not expected to lead to a significant deterioration of the state of the environment, on the contrary, it will help to resolve and mitigate many existing environmental conflicts. Nevertheless, the implementation manner of the Programme play a key role in achieving the positive environmental impacts. The following is a summary of our proposals in this regard, grouped according to the specific objectives of the Programme (justification of proposals is provided in Chapter 4.1).

Specific objective	Proposal
1.1. Climate change adaptation, risk prevention	<ul style="list-style-type: none"> <li>• In case of surface water retention projects, occasional or permanent flooding of soils of poor quality is recommended only in order to protect arable land.</li> <li>• It is recommended that during Programme implementation a priority should be given to those solutions that, in addition to climate change adaptation contribution, also result in the mitigation of greenhouse gas emissions (e.g. agricultural practices that increase the organic matter content of soils).</li> <li>• It is important that climate adaptation related developments within all affected sectors should fit to the traditional landscape conditions, and strive for their preservation and possible revitalization (e.g. maintenance and establishment of agroforestry systems in agricultural adaptation).</li> </ul>
1.2. Biodiversity and reduced pollution	<ul style="list-style-type: none"> <li>• In addition to the reduction of microplastics in natural waters, it is also appropriate to carry out pollutant assessment in case of drinking water supply. If necessary, supporting technical interventions is recommended as well.</li> <li>• One-off decontamination interventions are not sufficient to ensure lasting impact. Once the contamination sources have been identified, it is necessary to prevent further contamination.</li> <li>• Priority has to be given for revitalization and establishment of habitats and plant associations (coastal strips, wetlands, shelter belts, etc.) related to surface waters and agricultural areas should be given priority. Development of these habitats also serves the purposes of other interventions.</li> <li>• Besides focusing on native species in the programme implementation, it is also advised to support the protection and introduction of those which are able to adapt to climatic conditions expected in the future.</li> </ul>
2.1. Education and lifelong learning	-
2.2. Culture and tourism	<ul style="list-style-type: none"> <li>• Significant pressures on soils can be prevented by controlling pedestrian and car traffic of visitors.</li> <li>• When developing tourism infrastructure, efforts should be made to fully implement energy efficiency aspects, to increase the use of renewable energy, to give preference to low-emission modes of transport (e.g. enabling public transport access, to encourage cycling between attractions).</li> <li>• Development of coastal infrastructural elements of water tourism should be avoided at protected or sensitive natural areas.</li> <li>• Events should be organized in accordance with noise protection aspects, efforts should be made not to schedule louder events for the night, to choose locations farther from residential areas, and to previously consult with affected community members.</li> </ul>
3.1 Harmonious neighbourly relations through cooperation	-
3.2 Border crossing management	<ul style="list-style-type: none"> <li>• Should a new border crossing point be established or an existing one be extended, the related decision should be made on the basis of current and future modeled traffic data for the road sections concerned, in order to avoid an increase in road traffic and thus GHG emissions from transport in the overall area.</li> </ul>

Furthermore, it is **recommended to establish a register of the main characteristics of environmentally relevant developments**, offering an opportunity to easier to assign those data available in national environmental databases to the Programme developments. These indicators are needed for developments under the “Climate change adaptation, risk prevention”, “Biodiversity and reduced pollution” and “Culture and tourism” objectives, most of which referring to the characteristics of the area affected by the development. In view of all this, it is considered that in the framework of the interim or ex-post evaluation of the Programme, the impact of the implemented developments on environmental elements will be detectable. Indicators recommended to be collected and recorded: exact location and extent of areas affected by a development, in ha or m<sup>2</sup> depending on the project

- land use classification of areas affected by a development, identification of potentially affected protected natural areas and Natura2000 areas;
- extent urban green spaces established, in ha (if relevant)
- area of the paved surfaces, in m<sup>2</sup> (if relevant)
- number of implemented cultural or tourist events, day / year, (if relevant)