Elaboration of Strategic Environmental Assessment of the Interreg Programme for the programming period of 2021–2027 (Version 2.0), concerning the programming area of Hungary-Croatia

Environmental Report

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Environmental report prepared for the Cross Border Cooperation Programme between Hungary and Croatia 2021-2027

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1 Outline of the contents

1.1 Scoping approach

Cross Border Cooperation (CBC) is a key element of the EU policy towards its neighbours. It supports sustainable development along the EU's external borders, helps reducing differences in living standards and addressing common challenges across these borders. CBC promotes cooperation between EU countries and neighbourhood countries sharing a land border or sea crossing.

Figure 1. The analyzed territory of the VI-A Hungary-Croatia Programme 2021-2027

Source: *Hungary-Croatia Cross-border Co-operation Programme (huhr-cbc.com)*

The VI-A Hungary-Croatia Programme 2021-2027 is a cross-border programme between two EU Member State countries in the middle of Europe, along the north-eastern border of Croatia and the south-western border of Hungary. The cooperation area covers a territory of 31 085 km^2, including 11 counties providing homes for over 1.99 million citizens.

1.2 Development process of the programme document

A programme documentation template has been provided by the Interreg Regulation, that defines the content of Interreg Programmes. The first Chapter of the programme document provides the main development challenges and untapped potential in a form of a Situation Analysis. Based on the Situation Analysis a SWOT analysis has been prepared for the programme

area. To conclude the findings of Chapter 1, policy objectives, specific objectives and Interreg specific objectives are recommended to address the missing links in the CBC infrastructure.

Chapter 2 of the programme documentation template will contain the agreed policy and specific objectives approved by the stakeholders and rationale behind, serving as intervention logic for future calls. The Situation Analysis, the SWOT analysis and Chapter 1 filled in the programme documentation template has been prepared and handed over to the expert team responsible for the SEA of the programme document.

Chapter 2 is responsible for defining the priorities, policy objectives, specific objectives, potential beneficiaries, type of actions, target groups and indicators of the future Programme. This is the backbone of a programme concept. The development of Chapter 2 is conducted in a way that from an early stage the SEA expert team was involved in the process to channel its recommendations into the planning process in order to lead to an improved documentation.

1.3 List of sources (relevant legislative acts, data resources used during the draft of the Environmental report)

During the development of the programme documents and the environmental assessment, a number of major international, EU and national level sources (legislations, development strategies, etc.) and databases were used, such as:

List of relevant legislative acts and documents	
Hungary	Hungary's River Basin Management Plan 2021; National Transport Infrastructure Development Strategy of Hungary; National Energy and Climate Plan of Hungary; National Clean Development Strategy of Hungary (2020-2050); National Development 2030 - National Development and Territorial Development Concept of Hungary; National Spatial Planning Plan (OTrT) and Decree No 9/2019. (VI. 14.) of the Minister in charge of the Prime Minister's Office; National Forest Strategy (2016-2030); National Waste Management Plan (2021-2027); Sludge Treatment and Recovery Strategy (2014-2023); Municipal Decree No. 6/2020 (III.16.) of the President of the Somogy County General Assembly on the Spatial Planning Plan of Somogy County; National Tourism Development Strategy 2030 of Hungary; National Water Strategy (Kvassay Jenő Plan) of Hungary; "Healthy Hungary 2021–2027" – Health Sector Strategy (2021-2027); National Climate Change Strategy (2018-2030); National Framework Strategy on Sustainable Development of Hungary (2012-2024); National Nature Protection Plan V. (2021-2026); National Strategy for the Conservation of Biodiversity (2021-2030); National Landscape Strategy of Hungary (2017-2026); Integrated territorial development programme of Baranya County 2021-2027 ; Territorial development concept and programme of Baranya County 2030; Integrated territorial development programme of Somogy County 2021-2027; Territorial development concept and programme of Somogy County 2030; Integrated territorial development programme of Zala County 2021-2027 ; Territorial development concept and programme of Zala County 2030

Croatia	National development strategy of the Republic of Croatia until 2030; Spatial development strategy of the Republic of Croatia; Strategy and Action plan for nature protection of the Republic of Croatia for period 2017-2025; Climate change adaptation strategy of the Republic of Croatia for the period up to 2040 with a view to 2070; Low carbon development strategy of the Republic of Croatia until 2030 with a view to 2050; Agriculture strategy until 2030; Water management strategy; River Basin Management till 2027 ; Multi- annual Programme of Constructing Water Regulation and Protection Facilities and Amelioration Facilities; Multi-annual Programme for the Construction of Municipal Water Structures for the Period up to 2030; Air pollution control programme for the period from 2020 to 2029; Waste management plan of the Republic of Croatia for period 2023-2028; Integrated National Energy and Climate Plan for the Republic of Croatia for the period from 2021 to 2030; Energy development strategy of the Republic of Croatia until 2030 with a view to 2050; Programme for the development of green infrastructure in urban areas for the period 2021-2030; Transport Development Strategy of the Republic of Croatia for the period from 2017 to 2030; Plan for the development of the geothermal potential of the Republic of Croatia until 2030; Sustainable tourism development strategy until 2030, National plan for sustainable tourism until 2027 and an Action plan for the implementation of the National plan for sustainable tourism until 2025;Development plan of Međimurska county till 2027 (; Spatial plan of Međimurska county; Development plan of Varaždinska county for the period 2021-2027; Spatial plan of Varaždinska county; Development plan of Koprivničko-križevačka county for the period 2021-2027; Spatial plan of Koprivničko-križevačka county; Development plan of Bjelovarsko-bilogorska county for the period 2022-2027 ; Spatial plan of Bjelovarsko-bilogorska county; Development plan of Virovitičko-podravska county for the period 2021-2027; Spatial plan of Virovitičko-podravska county; Development plan of Požeško-slavonska county for the period 2021-2027; Spatial plan of Pozeško-slavonska county; Development plan of Osiječko-baranjska county for the period 2021-2027; Spatial plan of Osiječko-baranjska county; Development plan of Vukovarsko-srijemska county for the period 2021-2027; Spatial plan of Vukovarsko-srijemska county
Other	United Nations 2030 Agenda for Sustainable Development (A/RES/70/1); United Nations Framework Convention on Climate Change (UNFCCC, 1992); European Convention on the Protection of the Archaeological Heritage 1992 (Revised); Paris Agreement (2015); Situation Analysis and SWOT Analysis of the VI-A Hungary-Croatia Programme 2021-2027; 1st Draft of the VI-A Hungary-Croatia Programme 2021-2027; The European Commission's orientation paper on INTERREG NEXT Programmes and its Annex III; Joint paper on Interreg NEXT Strategic Programming 2021-2027; Annex 2 to the Regulation of the European Parliament and of the Council on the ERDF and CF (proposal); Indicator Fiches of additional common output and result indicators for the ERDF for Interreg; EU Green Deal; European Climate Law; EU Strategy on Adaptation to Climate Change; EU Water Framework Directive; Directive 2007/60/EC on the assessment and management of flood risks; EU Biodiversity Strategy for 2030 – Bringing nature back into our lives biodiversity Strategy (until 2030); European Landscape Convention; EU Strategy for Energy System Integration; EU Hydrogen Strategy; European Union Strategy for the Danube Region; EU Invasive Alien Species (IAS) Regulation

List of data resources	
Hungary	Hungarian Central Statistical Office (ksh.hu); TEIR – Official database of the Hungarian Central Statistical Office (TeIR)
Croatia	Croatian Bureau of Statistics (https://dzs.gov.hr/); Croatian environmental protection information system and nature protection information system (http://www.haop.hr/hr, https://envi.azo.hr/, https://www.bioportal.hr/gis/; https://mingor.gov.hr/ and other sources)
Other	Eurostat (ec.europa.eu/eurostat)

2 Observation of potential alternatives

As the VI-A Hungary-Croatia Programme 2021-2027 is not a classic strategy preceding some major works contract and negative environmental effects, but a financial framework for cross border cooperation programme the observation of alternatives shall be narrowed down to a no-project scenario and one that includes the implementation of the Hungary-Croatia Programme and observes its possible positive and negative environmental effects.

The specific objective (SO) (iii) *enhancing sustainable growth and competitiveness of SMEs and job creation in SMEs, including by productive investments* under the policy objective PO 1 targeting a smarter Europe was selected by the Hungary-Croatia Programme. The priority identified under SO (iii) is aimed at building a competitive border region through fostering the business and innovative cross-border cooperation. As formulated in the Hungary-Croatia Programme document, one of the main reasons for the poor and stagnating economic performance typical in the Croatian-Hungarian border region is the lack of cross-border business cooperation and joint R&D and innovation activities. The factual economic data for the programme area indeed justify the selection of SO (iii) *enhancing sustainable growth and competitiveness of SMEs*, and through the implementation of the planned actions under this SO, the SMEs will be given the chance to increase their presence on each other and foreign markets, increase their competitiveness and ultimately improve the labour market situation in the region.

Further aspects of creating a competitive border region are the enhancement of digitisation SO (ii) *improving access to inclusive and quality services in education*) and the fostering of digital connectivity (SO (v)), which specific objectives were not selected by the Hungary-Croatia Programme. Digitalisation was only mentioned among some of the planned activities under the five programme priorities.

It is common knowledge that digitalisation might simplify the cooperation between local citizens, companies and public authorities, therefore the Hungary-Croatia Programme should place greater emphasis on the digital transformation and the elimination of the digital divide in the Hungary-Croatia Programme area, as well as encourage local SMEs to implement advanced digital solutions a more sustainable social and economic development in the region. It also should be kept in mind that the EU supports the creation of climate-resilient and sustainable regions, the key elements of which are digitalisation and enhancement of technology innovation.

Under the PO 2 aimed at a greener, low-carbon Europe, SOs (i) and (iv) (enhancing energy efficiency, and adaptation to climate change) were selected with the priority of promoting a greener and low-carbon border region. In the framework of the SOs, in line with the EU decarbonisation goals the Hungary-Croatia Programme will support initiatives promoting energy consciousness to ensure clean and fair energy transition in the area. Since the programme area is characterised by high potential for the use of solar, biomass and geothermal energy, the Hungary-Croatia Programme intends to increase the use of renewable energy sources as well.

Both SOs are correspondent to most of the remaining SOs under PO 2 to some extent, however, developments and investments related to increasing the economic relevance and competitiveness of SMEs formulated in SO (iii) *enhancing sustainable growth and competitiveness of SMEs* under PO 1 shall be achieved in a sustainable, fair, resource-efficient and environmentally sound manner, while bearing in mind the potential cross-border effects of investments and not impede the fulfillment of the PO 2 specific objectives.

Agriculture is a prominent sector in the programme area with a performance above the national averages. Relying on the available resources, the favourable ecological and weather conditions, the professional experience and its R&D&I potential, the sector holds many opportunities for further development. Therefore, we recommend SMEs in the primary sector as key target groups for initiatives realised under Priority 1 and 2. It is important to note that climate change is adversely affecting agriculture, forestry and fishing sectors as well, therefore, in addition to the development, great emphasis should be also placed on preparedness and the elaboration of environmental adaptation strategies (under SO (iv) climate change adaptation, disaster risk prevention, resilience).

Under PO 3 SO (ii) was selected which aims at "developing and enhancing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross-border mobility" with priority 3 focusing on creating a more connected border region. The inclusion of SO (ii) in the programme can be justified by the border area's unfavourable infrastructural background: the average distance between road border crossings is 72 km. Enhancing the infrastructure and creating new possibilities to cross the border will decrease the travel time between the two countries contributing to a more connected Europe in social and economical terms alike.

Similarly to the priority objective 2, the Hungary-Croatia Programme also selected two SOs (culture and sustainable tourism (vi), inclusive and quality services in education (ii)) under the PO 4 aimed at a more social and inclusive Europe. In order to create an inclusive border region, the Hungary-Croatia Programme will support projects targeting the development of sustainable nature and culture-oriented tourism under SO (vi) enhancing the role of culture and sustainable tourism and joint educational initiatives under SO (ii).

Tourism, especially after the downturn caused by the Covid-19 virus, will be the main driving force in the region, therefore its development has rightly become one of the main development areas of the Hungary-Croatia Programme. The programme area, due to its natural and cultural values, acquired considerable experience in cross-border tourism cooperation. The long-standing viticultural collaboration in the region can serve as a good basis for deepening further cross-border tourism cooperation. The region holds particular potential for the integration of cross-border services and inclusive territorial development, which can be achieved through future service and infrastructure developments. The integrated development of tourism, sport and

culture leads to a predictable improvement in the labour market situation, the realisation of which is in line with the non-selected SO (i) as well. The Mura-Drava-Danube Transboundary UNESCO Biosphere Reserve as a tourist attraction offers great opportunities to enhance green tourism in the region. However, the promotion of close-to-nature tourism holds the high level risk of over-utilisation and -exploitation of the natural environment. Thus, in line with PO 2 *a greener, low-carbon Europe*, it is recommended that a detailed eligibility criteria regarding natural asset protection be included in the calls for proposals.

The SO (ii) *improving access to inclusive and quality services in education* selected under PO 4 places great emphasis on educational development and the adaptation to the digitalisation education trends caused by Covid-19. Compared to the respective EU average, the programme area is characterised by low labour productivity, and the main reason for the lag is the disproportion between the labour market needs and the supply of the education system in the border region. In addition to the actions outlined by the Hungary-Croatia Programme, particular attention should also be paid on digitalisation and the improvement of network coverage, as well as to access to inclusive and quality education services to transform the programme area in order to achieve a more competitive and sustainable economic region.

During the programming process, the partners aimed to concentrate the financial resources of the Hungary-Croatia Programme. Policy objectives PO 5 supporting sustainable and integrated urban and rural development fell out of the scope of the Hungary-Croatia Programme. Coordinated measures in these themes would be highly beneficial rather on the long run, and it is questionable how other SOs - including ISO1 b) - can contribute to this challenge.

As the Hungary-Croatia Programme places a strong emphasis on protecting the environment and does not ignore the EU objectives related to sustainability and decarbonisation, the exclusion of the PO 5 is considered justified.

Under the Interreg-specific objective ISO 1 targeting a better cooperation governance two SOs (enhancing efficient public administration (b), and building mutual trust (c)) were selected. The aim of these SOs is to make the territorial cooperation functional at all level, the programme strategies feasible and the sustainability permanent. The priority of fostering governmental cooperation under the SO (b) aimed at the enhancement of efficient public administration is key, as in addition to the thematic SOs, there is a need to focus on ensuring the institutional background cooperation as well. Initiatives under the SO (b) *enhancing efficient public administration*, by overcoming obstacles to cooperation will allow for a deepening of stakeholders' interactions, as well as the expansion of capacities in themes not covered by other SOs. The SO (c) aiming to build up mutual trust, in particular by encouraging people-to-people actions was selected by the programme as well. Although the partner countries have traditionally maintained a close cooperative relationship with each other, maintaining and forming civil and cultural interchange between societies, as well as bringing all age groups of the society closer is

a forward-looking step. Within the framework of the Hungary-Croatia Programme, civil organisations, sport and youth associations, minority organisations will be connected through joint initiatives promoting the cultural exchange and supporting the dialogue. Given the long-standing partnership and the number of previous joint projects, the selection of SO (c) *building up mutual trust* and thus the encouragement of actors to further cooperation is indeed justified.

The Interreg-specific objective ISO 2 on security and defence was not selected, however due to the concentration of resources and focusing on direct benefit thematic areas this decision is justified.

It can be generally concluded that the selected specific objectives provide the right combination of key interventions, while meeting the requirement to focus the limited financial sources of the Hungary-Croatia Programme. Besides all, it is important to take into account the potential hazards and adverse effects on the environment, in line with the protective recommendations highlighted in Chapter 7 of the current SEA.

3 Main objectives of the Programme

The VI-A Hungary-Croatia Programme 2021-2027 is under development. Draft of the Chapter 1 of the programme plans to organize the development activities of the next 7-year period along four priorities, which are the following:

- 1. Competitive border region
- 2. Greener and low-carbon border region
- 3. Connected border region
- 4. Inclusive border region
- 5. Cooperating border region

The table below shows the relationship between the identified programme priorities and the selected Policy objectives / Interreg specific objectives. The relationships between the priorities, the internal consistency of the programme documents are described in Chapter 4.2.

Table 1. Defined Hungary-Croatia Programme priorities and their relationship to the selected Policy Objectives/Interreg Specific Objectives.

Programme priority	Selected policy objective or selected Interreg-specific objective	Selected specific objective
1. Competitive border region	PO 1 – a smarter Europe by promoting innovative and smart economic transformation	(iii) enhancing sustainable growth and competitiveness of SMEs and job creation in SMEs, including by productive investments
2. Greener and low-carbon border region	PO 2 – a greener, low-carbon Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate adaptation and risk prevention and management	(i) promoting energy efficiency and reducing greenhouse gas emissions
		(iv) promoting climate change adaptation and disaster risk prevention, resilience, taking into account ecosystem based approaches
3. Connected border region	PO 3 – a more connected Europe by enhancing mobility	(ii) Developing and enhancing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross-border mobility
4. Inclusive border region	PO 4 – a more social and inclusive Europe implementing the European Pillar of Social Rights	(vi) enhancing the role of culture and sustainable tourism in economic development, social inclusion and social innovation
		(ii) improving access to inclusive and quality services in education, training and lifelong learning through developing accessible infrastructure, including by fostering resilience for distance and on-line education and training
5. Cooperating	ISO 1 – a better cooperation governance	(b) enhance efficient public administration by promoting legal and administrative cooperation and

Programme priority	Selected policy objective or selected Interreg-specific objective	Selected specific objective
border region		cooperation between citizens, civil society actors and institutions, in particular with a view to resolving legal and other obstacles in border regions (c) build up mutual trust, in particular by encouraging P2P actions

4 Cohesion and consistency of documents

4.1 Relationship with other relevant plans, programmes

The next Chapter presents the relationship of the programme document with relevant international documents and EU directives, strategies as well as with national and regional level legislations and strategies of the Partner countries involved in the VI-A Hungary-Croatia Programme 2021-2027. The list of documents involved in the context of the cohesion analysis has been extended by the national authorities in some cases during the review process of the SEA's description of content.

Relevant International and European Union documents

Name of the relevant document, strategy	Cohesion
United Nations 2030 Agenda for Sustainable Development (A/RES/70/1)	The Agenda is an action plan that aims to strengthen universal peace freeing the human race from the tyranny of poverty as well as healing and securing our planet, while not being afriad of taking bold and transformative steps. The UN urges all countries and all stakeholders to implement this plan, and to act in partnership collaboratively along the Sustainable Development Goals. The HUHR Programme supports all Goals of the UN Agenda in general, besides having a great deal of Goals that show a close allience with the Programme: Goal 4. ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all accompanied by Goal 7. aimed at affordable, reliable, sustainable and modern energy for all are both perfectly in line with PO 2 (iv) and PO 4 (vi) respectively. Goal 9. aimed at building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation is well supported by PO 3 (ii). Goal 15. protecting, restoring and promoting sustainable use of terrestrial ecosystems, sustainably manage forests, combating desertification, and halting and reversing land degradation and biodiversity loss also has close relations with PO 4 (vi). Goal 16. promoting peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels is strongly aligned with ISO 1 – a better cooperation governance. The HUHR Programme can be considered as an example for Goal 17. which focuses on strengthening the means of implementation and on revitalising the Global Partnership for Sustainable Development.

Name of the relevant document, strategy	Cohesion
Paris Agreement (2015)	The Agreement enhances the implementation of the UN Convention on Climate Change, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty. The main objectives of the Agreement are the following: holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change; increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production; and; making finance flows consistent with a pathway towards low; greenhouse gas emissions and climate-resilient development. These objectives are all supported mainly by PO 2 (iv) – promoting climate change adaptation and disaster risk prevention, resilience, taking into account ecosystem based approaches – of the HUHR Programme. Transportation is also a key factor when it comes to climate change which is why PO 3 (ii) of the HUHR Programme which aims at enhancing sustainable and climate resilient mobility also plays an important role.
United Nations Framework Convention on Climate Change (UNFCCC, 1992)	The objective of the Convention is to achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The Convention suggests that a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner. Lately this has been extended by and reviewed in the Paris Agreement (2015) and the United Nations 2030 Agenda for Sustainable Development, which have strong connections with the HUHR Programme as previously examined.
The European Green Deal	The European Green Deal is the response of the Community to the current climate and environmental-related challenges. It is a new growth strategy that aims to transform the EU into a resource-efficient and competitive economy. It also aims to protect, conserve and enhance the EU's natural capital, and protect the health and well-being of citizens from environment-related risks and impacts. The Hungary-Croatia Programme contributes to the realisation of the European Green Deal through all of the selected Policy objectives and Specific objectives.
European Climate Law	Linked to the European Green Deal, the European Climate Law aims to create the framework needed to achieve climate neutrality in the EU by 2050. Priority 2 – PO 2 (iv) promoting climate change adaptation, and disaster risk prevention, resilience, taking into account ecosystem-based approaches – of the Hungary-Croatia Programme is integral to the objectives set out in the proposal.

Name of the relevant document, strategy	Cohesion
EU Strategy on Adaptation to Climate Change	The European Green Deal, the EU's growth strategy for a sustainable future, is predicated on the realisation that the green transformation is an opportunity and that failure to act has a huge cost. The EU has already taken action to boost its resilience over the past years under the 2013 Adaptation Strategy, all Member States now have a national adaptation strategy or plan. In line with the Green Deal, the new Adaptation Strategy aims to realise the 2050 vision of a climate-resilient Union by making adaptation smarter, more systemic, swifter, and by stepping up international action. The Hungary-Croatia programme contributes to the realisation of the climate adaptation goals through the PO 2 (iv) promoting climate change adaption and disaster risk prevention and resilience by enhancing protection and preservation of biodiversity and green infrastructure, including in urban areas, and reducing all forms of pollution.
EU Water Framework Directive	In line with the objectives of the Water Framework Directive (Article 1 of the DIRECTIVE 2000/60/EC), the Hungary-Croatia programme (Priority 2 – "Greener and low-carbon border region") contributes to improving water quality, protecting aquatic ecosystems and reducing water damage (PO 2 (iv)). Priority 4 – "Inclusive border region" " – of the programme can enhance efficient public administration by promoting legal and administrative cooperation and cooperation between citizens, civil society actors and institutions, in particular with a view to resolving legal and other obstacles related to watermanagement challenges in border regions which is also a significant part of the Directive. According to the framework, "common principles are needed in order to coordinate Member States' efforts … to contribute to the control of transboundary water problems… (23)" and according to Article 3. (4) "Member States shall ensure that the requirements of the Directive for the achievement of the environmental objectives (…), and in particular all programmes of measures are coordinated for the whole of the river basin district. For international river basin districts the Member States concerned shall together ensure this coordination and may, for this purpose, use existing structures stemming from international agreements." VI-A Hungary-Croatia Programme by its shear existance provides an alternate basis for cooperation in watermanagement issues as well, while enhancing sustainable tourism (at natural sites such as the Drava's river basin) under Priority 4 PO 4 (vi).
Directive 2007/60/EC on the assessment and management of flood risks	According to the Directive floods have the potential to cause fatalities, displacement of people and damage to the environment, to severely compromise economic development and to undermine economic activities. EU Member States shall, for each river basin district, or certain coastal areas or individual river basins, or the portion of an international river basin district lying within their territory, undertake a preliminary flood risk assessment (Article 3(2)(b) and 4(1)). The HUHR Programme area contains many of the above mentioned terrains, therefore

Name of the relevant document, strategy	Cohesion
	it aids in reducing flood risks under PO 4 (iv) and ISO (b) by putting an enphasis on risk prevention measures and also enhancing efficient public administration also resolving legal and other obstacles in the programme area in order to avoid floods and minimise risks.
EU Biodiversity Strategy for 2030 – Bringing nature back into our lives	The Strategy linked to the European Green Deal aims to put Europe's biodiversity on a path to recovery for the benefit of people, the climate and the planet by 2030. In the post-COVID-19 context, the strategy aims to increase the resilience of our societies to future threats, such as: the impacts of climate change; forest fires; food insecurity; disease outbreaks – including the protection of wildlife and fighting against illegal wildlife trade. Priority 2 and 4 – "Greener and low-carbon border region" and "a more social and inclusive Europe implementing the European Pillar of Social Rights " – of the Hungary-Croatia programme, in connection with the policy objectives PO 2 (iv), PO 4 (ii) and PO 4 (vi) directly serve the achievement of the actions set out in the EU Biodiversity Strategy in the CBC region.
European Landscape Convention	The aims of the Convention are to promote landscape protection, management and planning, and to organise European co-operation on landscape issues. Article 9 of the Convention (Transfrontier landscapes) declares that the Parties shall encourage transfrontier co-operation on local and regional level and, wherever necessary, prepare and implement joint landscape programmes. Priority 4 – PO 4 (vi) enhancing the role of culture and sustainable tourism in economic development, social inclusion and social innovation – of the Hungary-Croatia Programme is fully in line with the objective set out in this article. The priorities of the Hungary-Croatia Programme, in connection with policy objectives PO 2 (iv); and ISO 1 (b) contribute to the coordinated development of European landscapes and their sustainable use.
European Convention on the Protection of the Archaeological Heritage 1992 (Revised)	In line with the Convention the Hungary-Croatia Programme recognizes archaeological heritage sites as being important for historical and scientific research. The revised text of the Convention is focused precisely on preserving archaeological heritage in the context of planning and implementation of development projects, which is adequately incorporated in the Hungary-Croatia Programme, since local, and regional spatial development documents and strategies have been considered during the programming process.
EU Strategy for Energy System Integration	Energy system integration is the coordinated planning and operation of the energy system across multiple energy carriers, infrastructures, and consumption sectors, for a more efficient, circular, and reliable energy

Name of the relevant document, strategy	Cohesion
	system. The EU Strategy for Energy System Integration sets out a vision on how to accelerate the transition towards a more integrated energy system, including concrete policy and legislative measures at EU level. The Hungary-Croatia Programme through PO 2 – a greener, low-carbon Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate adaptation and risk prevention and management – (i) and (iv) directly contributes to the goals of the EU Strategy for Energy System Integration.
EU Hydrogen Strategy	According to the European Union, (green) hydrogen "is a key priority to achieve the European Green Deal and Europe's clean energy transition". In line with the European Green Deal, the aim of the EU Hydrogen Strategy is to decarbonise hydrogen production and expand its use in sectors where it can replace fossil fuels. The Hungary-Croatia Programme both directly – through the PO 2 (i) "promoting energy efficiency and reducing greenhouse gas emissions" – and indirectly – under PO 2 (iv) "promoting climate change adaptation, and disaster risk prevention, resilience, taking into account ecosystem-based approaches" – contributes to the goals of the EU Hydrogen Strategy.
European Union Strategy for the Danube Region	The EUSDR is a macro-regional strategy, the main objective of which is to coordinate existing provisions and initiatives across the Danube Region to address common challenges, as in many cases cross-border cooperation and a transnational solution are needed. The strategy addresses a wide range of issues and development policies, which have been coordinated along 4 pillars and 12 priority areas. The HUHR programme is most strongly linked to the following DRS priorities: PA 2 – Sustainable Energy; PA 3 – Culture & Tourism ; PA 6 – Biodiversity, Landscapes and Air & Soil Quality; PA 8 – Competitiveness of Enterprises; PA 9 – People & Skills; PA 10 – Institutional Capacity & Cooperation. It is important to emphasize that there is no financial resource behind the strategy that can be applied for. The objectives of the strategy must be embedded in existing policy frameworks and operational programs with funding. EUSDR activities are mainly supported by the Danube Transnational Programme. In addition, most of the objectives are implemented in the form of projects with the support of the European Territorial Cooperation Programs (CBC Programs, Interreg, etc.) and the National Operational Programs.
EU Invasive Alien Species (IAS) Regulation	The Regulation sets out rules to prevent, minimise and mitigate the adverse impact on biodiversity of the introduction and spread within the Union, both intentional and unintentional, of invasive alien species. IAS are animals and plants that are introduced accidentally or deliberately into a natural environment where they are

Name of the relevant document, strategy	Cohesion
	not normally found, with serious negative consequences for their new environment (biodiversity and related ecosystem services, other social and economic impact), which should be prevented. Prevention of further degradation of biodiversity and ecosystem based approaches are included in PO 2 (iv) of the HUHR Programme, while PO 4 (vi) aims to mitigate environemntal damage caused by tourism, thus protecting indigenous natural habitats located in the Programme area.

Relevant Hungarian documents

Name of the relevant document, strategy	Cohesion
National Development and Territorial Development Concept of Hungary (until 2030)	By implementing cross-border actions, the HUHR programme contributes to the sustainable, coordinated development of the south-western part of the Carpathian Basin, which is one of the specific territorial goals of the Concept (Specific territorial goal: 'Strengthening the country's macro-regional role; Intervention field: establishing and strengthening economic and rural development cooperation in the Carpathian basin; strengthening Hungary's role in spatial organisation in the Carpathian basin; and extending territorial and inter-community relations in the Carpathian basin). Moreover the Concept recognises the need for "development of rural areas with significant social disadvantages and problems" one of which is the historical territory of "Ormánság" located in Baranya County along the border between Hungary and Croatia.
National Spatial Planning Plan (OTrT) and Decree No 9/2019. (VI. 14.) of the Minister in charge of the Prime Minister's Office	The OTrT was established by Act CXXXIX. of 2018 – later supplemented with Decree No 9/2019. (VI. 14.). The scope of the Act and the Decree is to define the conditions for regional landuse, the coordinated spatial order of infrastructure networks for the whole country as well as for certain priority areas containing provisions for various types of "protection zones" located all over the country that each serve at least one of the following: sustainable development and the preservation of landscape, natural-, ecological- and cultural environment and values, resources, defence interests and traditional land use. The OtrT also lists several existing and planned roads of national and international importance including ones that would create a better infrastructural connection between Croatia and Hungary. In light of the above both the Plan (OTrT) and the Decree are perfectly in line with PO 2 (iv) – promoting climate change adaptation and disaster risk prevention, resilience, taking into account ecosystem based approaches –

Name of the relevant document, strategy	Cohesion
	as well as PO 3 (ii) –Developing and enhancing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross-border mobility – of the Programme.
National Transport Infrastructure Development Strategy of Hungary (2014-2050)	The selected Policy Objectives and related Specific Objectives of the VI-A Hungary-Croatia Programme 2021-2027 programme do not prioritize the development of cross-border transport infrastructure. Although the strategy does not explicitly mention Croatian-Hungarian cross-border plans, it is in lince with PO 3 (ii). In connection with the development of cross-border networks of tourist attractions (PO 4 (vi)), small-scale actions for the development of cross-border transport may be implemented under the program.
National Climate Change Strategy (2018-2030)	The second National Climate Change Strategy (NCCS) of Hungary is a comprehensive framework for climate policy, green economy development and social adaptation, reflecting climate protection goals in line with international and EU commitments, and directions for actions in both sectoral and territorial dimensions for policy and economic planning and for society as a whole. The strategy builds on the three pillars of tackling climate change, such as mitigation, adaptation and awareness-raising. Close coherence can be detected between the Strategy and the HUHR Programme, as PO 1 and PO 2 both reflect the main goals of the NCCS.
National Tourism Development Strategy 2030 of Hungary (until 2030)	The Hungary-Croatia Programme focuses on the development of tourism as one of the drivers of cross-border economic development, social inclusion and social innovation (Programme Priority 4 – Inclusive border region connected to PO 4 (vi). The tourism development actions implemented within the framework of the Hungary-Croatia Programme can contribute to the increase of the tourism offer of the cross-border region in many areas (cultural tourism, gastronomy and wine tourism, event tourism, active and nature tourism) defined in the Strategy. The programme territorially affects the southern part of the Southern Transdanubian Turistical Region where the city of Pécs is located and is considered as a major cultural hub winning the title for Europe's Cultural Capital in 2010. Also in terms of wine tourism the Villány Wine Region – close to the hungarian-croatian border – has a significant role as part of the programme area.
National Energy and Climate Plan of Hungary	When launching the "Clean energy for all Europeans package", the European Commission required all Member States to prepare a National Energy and Climate Plan in line with the EU decarbonisation goals. The objectives of the Plan show close coherence with the ones of the VI-A Hungary-Croatia Programme 2021-2027, including

Name of the relevant document, strategy	Cohesion
	the specific objective (iii) enhancing sustainable growth and competitiveness of SMEs and job creation in SMEs, including by productive investments under PO 1, the SO (i) promoting energy efficiency and reducing greenhouse gas emissions and (iv) promoting climate change and disaster risk prevention, resilience, taking into account eco-system based approaches under PO 2. Actions supported under PO 1 and PO 2 will contribute to the main objectives of the National Energy and Climate Plan targeting decarbonisation, increasing energy efficiency, security of supply and the promotion of research and innovation.
Jenő Kvassay Plan – National Water Strategy of Hungary (2017-2030)	One of the long-term goals of the Plan is 'Preventive flood and inland water protection'. Actions implemented under Programme Priority 2 – Greener and low-carbon border region – and thorugh PO 2 – greener, low-carbon Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate adaptation and risk prevention and management – support reducing disaster risks in the region.
Hungary's River Basin Management Plan 2021	The measures needed to achieve the objectives set out in the Water Framework Directive are summarized in the, so-called, river basin management plans. The Government of Hungary published Hungary's latest river basin management plan by the Government Decision No. 1242/2022. (IV.28.) This is the third version of the Plan which contains the revision of the second period (2016-2021) of the plan and sets new targets from 2022 to 2027. According to Chapter 1..3.4. (Transboundary Water Relations) of the Plan, international cooperation is vital for Hungary, as more than 95% of our watercourses come from across the border and much of our groundwater resources also come from there. The Hungary-Croatia Programme, in relation to the specific objectives PO 2 (iv) and PO 4 (vi), contributes in general to the achievement of the objectives set out in the plan, in particular to the performance of transboundary water management tasks.
"Healthy Hungary 2021–2027" – Health Sector Strategy (2021-2027)	The specific objective PO 4 (ii) of the HUHR programme is linked to the activities set out in the Specific objective 1 and 4 of the Strategy. SO2 of the strategy aim at promoting healthy lifestyles, reducing health risks through raising awareness, health education and health development, while SO4 supports the development of human resources in health care.
National Framework Strategy on Sustainable Development of Hungary (2012-2024)	Mainstreaming sustainability in actions under the Hungary-Croatia Programme ensures that the programme contributes to the achievement of the objectives set out in the Framework Strategy. Due to the nature of the Framework Strategy, the link is relevant to all priorities of the HUHR programme.

Name of the relevant document, strategy	Cohesion
National Nature Protection Plan V. (2021-2026)	The Plan sets out the key nature conservation responsibilities of the country as part of the V. National Environmental Programme of Hungary. The Hungary-Croatia Programme contributes to a number of the objectives of the Plan through the PO 2 (iv), PO 3 (ii) PO 4 (ii) and ISO 1 (b) specific objectives, such as: Nature protection planning; Social relations, attitude formation, presentation; International cooperations, sustainable mobility etc.
National Landscape Strategy of Hungary (2017-2026)	One of the important objectives of the strategy is to contribute to the creation of a livable urban landscape by using land wisely (Specific objective II. of the Strategy). Actions implemented within the framework of the Programme Priority 2 – Greener and low-carbon border region – can contribute to the development of urban green infrastructure, reduction of pollutions and to support more conscious land use, while PO 4 – a more social and inclusive Europe implementing the European Pillar of Social Rights – directly supports Specific objective III. of the Strategy related to the culture and education in terms of landuse.
National Forest Strategy (2016-2030)	The Forest Strategy, in addition to the forest and nature protection objectives prioritises the increase of forest areas that are more resilient to the impacts of climate change and supports the transition from single crops to mixed tree stands. In order to increase the forest areas in Hungary, in parallel with the Strategy a national afforestation programme has also been announced, with the aim to mobilise the population to participate in tree planting actions. The HUHR border area is heavily afforested and provides excellent opportunities for actions related to touristic activities under PO 3 (vi) or biomass-based energy production under PO 2 (i) and (iv). However, when promoting these types of activities, the objectives of the Forest Strategy such as nature protection, the sustainable management and rational use of forests shall be respected and pursued by each beneficiary.
National Strategy for the Conservation of Biodiversity (2021-2030)	The strategy identifies several vectors posing threats to biodiversity, which are in line with the nature of the Hungary-Croatia Programme. Mitigating these threaths there is a strong connection between Objective 9 – "Better understanding of the links between climate change and biodiversity conservation, improving the resilience of ecosystems to climate change, and preserving biodiversity to reduce the effects of climate change and to facilitate adaptation" – of the Strategy and PO 2 (iv) of the Hungary-Croatia Programme – promoting climate change adaption and disaster risk prevention and resilience, taking into account ecosystem-based approaches. Besides threaths there are many opportunities in education (e.g. awareness rasing, lifelong learning) recognised by the Strategy also supported by the Hungary-Croatia Programme under PO 4.

Name of the relevant document, strategy	Cohesion
National Waste Management Plan (2021-2027)	The strategic goal of the Plan is to form the Hungarian waste management sector a prime example for circular economy in Europe. The main targets of the Plan are the prevention of generation of waste, the increase of recycling for all waste streams, the reduction of landfill and the formation of the attitude of the general public. The Plan, in line with the SO (iii) under PO 1 of the Programme sees solution in the enhancement of competitiveness of relevant SMEs targeting sustainable growth and in the promotion of climate change adaptation and the improvement of access to inclusive and quality education, corresponding to SO (iv) under PO 2 and SO (ii) under PO 4. The Plan also places great emphasis on mutual cooperation, which is also supported by ISO 1 of the Programme.
Sludge Treatment and Recovery Strategy (2014-2023)	The Strategy serves as a standard guide for efficient treatment and recovery of sewage sludge, as it shall be not considered as waste but a usable secondary raw material and a renewable energy source. The Strategy shows the closest connection with SO (i) and (iv) under the PO 2 to the VI-A Hungary-Croatia Programme 2021-2027, targeting a Greener Europe
National Clean Development Strategy of Hungary (2020-2050)	Hungary aims to achieve climate neutrality by 2050 with the adoption of Act no. XLIV of 2020 on Climate Protection. The National Clean Development Strategy (NCDS or Strategy) outlines a 30-year vision of socioeconomic and technological development pathways. The Strategy identifies key action areas such as Energy efficiency improvement (1), Research, development, and innovation as well as corresponding education and training programs (8), which are closely related to PO 2 (i) – promoting energy efficiency and reducing greenhouse gas emissions – and PO 4 (ii) – improving access to inclusive and quality services in education, training and lifelong learning through developing accessible infrastructure, including by fostering resilience for distance and on-line education and training. One of the visions for 2050 described in the strategy is about transportation namely making it mor sustainable, greener, safer and better connected which directly supports PO 3 (ii) – Developing and enhancing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross-border mobility – of the Programme.
Integrated territorial development programme of Baranya County 2021-2027	The Integrated territorial development programme merges the objectives and priorities of two development programmes by linking Baranya County's Territorial development programme to Hungary's Territorial and settlement development OP (TOP Plusz).

Name of the relevant document, strategy	Cohesion
	Therese is a strong alignment between Action 2.1 and 1.2 – "Climate friendly county", "Urban development, municipal services" – of TOP Plusz connected to Priority V – "Creating conditions for environmental management based on the sustainable use of natural resources" – of the county's Territorial development programme and PO 2 – a greener, low-carbon Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate adaptation and risk prevention and management – of the Hungary-Croatia Programme. Piority VI. – "Improving accessibility, promoting the creation of sustainable transportation systems" – is supported by PO 3 (ii).
Territorial development concept and programme of Baranya County 2030	The VI-A Hungary-Croatia Programme 2021-2027 supports many of the objectives and priorities set out in the county's Territorial Development Concept and Programme: Priority II. and III. of the Concept and the Programme aim to build capacity in production and resilience focusing on the structure of education by encouraging R&D&I and sustainable development investments, fostering cooperation between higher education institutions and the private sector, all of which is perfectly in line with PO 1 – a smarter Europe by promoting innovative and smart economic transformation – and PO 4 (ii) – improving equal access to quality services in education, lifelong learning etc. – of the Hungary-Croatia Programme. Piority VI. – "Improving accessibility, promoting the creation of sustainable transportation systems" – is supported by PO 3 (ii).
Integrated territorial development programme of Somogy County 2021-2027	The Integrated territorial development programme merges the objectives and priorities of two development programmes by linking Somogy County's Territorial development programme to Hungary's Territorial and settlement development OP (TOP Plusz). Tematic specific objective 5 – including small scale rural project development, enhancing social services – of the Territorial development programme in connection with all actions of Priority 3 – "Development of human resources" – of the TOP Plusz, is strongly supported by PO 4 (vi) and especially by ISO 1 (b) – enhance efficient public administration by promoting legal and administrative cooperation and cooperation between citizens, civil society actors and institutions, in particular with a view to resolving legal and other obstacles in border regions – of the Hungary-Croatia Programme.

Name of the relevant document, strategy	Cohesion
Municipal Decree No. 6/2020 (III.16.) of the President of the Somogy County General Assembly on the Spatial Planning Plan of Somogy County	On a local scale the Munincipal Decree is a more detailed version of the earlier analysed National Spatial Planning Plan (OTrT). Therefore it is also perfectly in line with PO 2 (iv) – promoting climate change adaptation and disaster risk prevention, resilience, taking into account ecosystem based approaches – of the HUHR Programme
Territorial development concept and programme of Somogy County 2030	There is a close territorial and thematic connection between the examined documents: The county level programme, similar to the Hungary-Croatia Programme, pays special attention to sustainable use of resources as well as to environmental management in order to improve the quality of life, creating conditions for a self-sustaining social economy based on local production in the county. Hungary-Croatia Programme Priority 2 – Greener and low-carbon border region is connected to General objective II. of the concept – Sustainable and efficient use of internal resources, taking into account the ecological, social and economic aspects.The concept also names the "Development of the border region" as one of its tematic goals.
Integrated territorial development programme of Zala County 2021-2027	The Integrated territorial development programme merges the objectives and priorities of two development programmes by linking Zala County's Territorial development programme to Hungary's Territorial and settlement development OP (TOP Plusz). The Integrated territolrial programme fosters liveability and the quality of social services in the county (Objective 1 and 4), while also paying attention to building resilience against climate change (Objective 6). These 3 objectives are perfectly in line with objectives of the Hungary-Croatia Programme such as PO 1 (iii) – enhancing sustainable growth and competitiveness of SMEs and job creation in SMEs, including by productive investments –, PO 4 (iv) and ISO 1.
Territorial development concept and programme of Zala County 2030	The main objective of both documents is to create a wealthy and harmoniously developing green Zala County. Strategic objectives of the concept and the programme such as Priorities III, IV and V. – "Realisation of integrated environmental programmes" – are closely ralated to the VI-A Hungary-Croatia Programme 2021-2027 PO 4 – a more social and inclusive Europe implementing the European Pillar of Social Rights – and PO 2 – a greener, low-carbon Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate adaptation and risk prevention and management. The state of road infrastructure is mentioned as one of the key problems by most of the priorities in the county's development programme. This problem may be mitigated by the inclusion of PO 3 (ii) in Hungary-Croatia Programme.

Relevant Croatian documents

Name of the relevant document, strategy	Cohesion
National development strategy of the Republic of Croatia until 2030	National development strategy of the Republic of Croatia until 2030 (hereinafter NDS) is a fundamental document and a comprehensive act of strategic planning which directs the long-term development of society and economy in all important issues for the Republic of Croatia. Strategic framework includes vision of the Republic of Croatia in 2030, development directions (sustainable economy and society, strengthening crisis resilience, green and digital transition, balanced regional development) and strategic goals defined within development directions whose realisation will contribute to achieving the vision of the Republic of Croatia. Priorities and objectives of the Hungary-Croatia Programme contribute to all development direction of the NDS and in particular to its following strategic goals: competitive and innovative economy, education and employment, global recognition and strengthening of the Republic of Croatia international position and role (bilateral relations), security for stable development (disaster risk prevention and improvement of the civil protection system), transition to climate neutrality (resource efficiency, climate change, energy efficiency and self-sufficiency and transition to clean energy), sustainable mobility (transport connectivity is necessary for the quality of life and is an instrument of balanced development; transport infrastructure is an instrument of national and regional development and territorial cohesion), and digital transition of society and economy.
Spatial development strategy of the Republic of Croatia	Spatial development strategy of the Republic of Croatia (hereinafter SDS) is a fundamental document for guiding the spatial development of the Republic of Croatia. It determines general objectives of spatial development up to 2030: initial state, priorities, guidelines, and implementation framework. Development priorities of the SDS are: sustainability of spatial organisation; preservation of the identity of the space; traffic connection; energy system development;and resilience to changes. PO 1 (iii), PO 2 (i), PO 2 (iv), PO 3 (ii), PO 4 (ii) and PO 4 (vi) of the Hungary-Croatia Programme contribute to the SDS in particular to its following priorities: sustainability of spatial organisation (reducing regional disparities and sustainable planning for development of specific areas, development of comfortable and developed cities; improving accessibility of transport infrastructure), preservation of the identity of the space (sustainable development of nature protected areas and ecological network areas, preservation and sustainable use of cultural heritage), traffic connection (developing a transport system, joining the European transport network) energy system development (increase of the share of renewable energy sources) and resilience to changes (adaptation to climate change, strengthening natural capital by planning the development of green

Name of the relevant document, strategy	Cohesion
	infrastructure, increase of energy efficiency, sustainable waste management, adaptation to changing business environment, sustainable tourism).
Strategy and Action plan for nature protection of the Republic of Croatia for period 2017-2025	The Strategy and Action plan for nature protection of the Republic of Croatia (hereinafter SNP) is a fundamental document of nature protection. It determines goals and guidelines for conservation of biodiversity and geodiversity and its implementation framework. Policies and objectives of the Hungary-Croatia Programme contribute to the goals of the SNP but partly present a threat to biodiversity. Possible threats are related to PO 2 (i) as it promotes reduction of greenhouse gas emission among other through growth in the share renewable energy. Renewable energy sources (RES) are crucial to tackle and mitigate climate changes which represent one of the biggest threats to biodiversity at global level. RES largely contribute to decarbonisation of energy sources and enable economic development but RES power plants often take spaces that are habitats of endangered species. Therefore, SNP emphasizes need of harmonisation of biodiversity protection and development of RES through cross-sectoral approach in physical and strategic planning, including implementation of strategic environmental assessment and environmental impact assessment, as well as ecological network appropriate assessment. Possible threats are also related to PO 3 (ii) as construction of transport infrastructure may result in habitat fragmentation, increased noise and pollution, i.e disturbance of animals and unfavourable living conditions in the surrounding habitats. But PO 2 (iv) of the Hungary-Croatia Programme emphasizes protection of natural assets (protection of environment and nature, habitat connectivity, restoration of natural habitats etc). Balanced and inclusive development of diferent sectors in line with nature, natural resources and environemnt is sustainable development. Thus, Hungary-Croatia Programme implementation contributes to the goals of SNP.
Climate change adaptation strategy in the Republic of Croatia for the period up to 2040 with a view to 2070	According to Article 15 of the Climate Change and Ozone Layer Protection Act (Official Gazette No. 127/19) all development documents in Croatia have to be harmonised with the Climate change adaptation strategy and the Low carbon development strategy. Climate change adaptation strategy in the Republic of Croatia for the period up to 2040 with a view to 2070 (hereinafter CCAS) determines goals and priorities in climate change adaptation. It focusses on 8 key sectors (water resources, agriculture, forestry, fisheries, biodiversity, energy, tourism and health) and 2 cross-sectoral areas (spatial planning and management and risk management) for which CCAS determines climate change adaptation measures.

Name of the relevant document, strategy	Cohesion
	PO 2 (iv) of the Hungary-Croatia Programme emphasizes the importance of climate adaptation and risk prevention and management. Thus, its implementation contributes to the goals of CCAS.
Low carbon development strategy of the Republic of Croatia until 2030 with a view to 2050	According to Article 15 of the Climate Change and Ozone Layer Protection Act (Official Gazette No. 127/19) all development documents in Croatia have to be harmonised with the Climate change adaptation strategy and the Low carbon development strategy. Low carbon development strategy of the Republic of Croatia until 2030 with a view to 2050 (hereinafter LCDS) determines through guidelines and measures the path of the Republic of Croatia towards a competitive economy with low greenhouse gas emissions. The LCDS applies to all sectors of the economy and human activities and is particularly relevant to energy sector, industry, traffic, agriculture, forestry and waste management. PO 3 (ii) of the Hungary-Croatia Programme promotes better connected border region. Road traffic is significant source of greenhouse gasses as result of fuel combustion in road vehicles engines. But result of PO 3 (ii) will be shortening of travel time between Hungary and Croatia. Shorter travel time results in reducing of fuel consumption i.e. in reducing of greenhouse gas emissons. PO 2 (i) emphasize the importance of low carbon development and PO 2 (iv) emphasizes cooperation initiatives of preparing joint sustainable energy and climate action plans. Thus, Hungary-Croatia Programme implementation contributes to guidelines and measures of the LCDS.
Agriculture strategy until 2030	Agriculture strategy determines vision and plan of the strategic transformation of agriculture and rural areas of the Republic of Croatia for the period until 2030. The vision is to produce more high-quality food at competitive prices, increase the resilience of agricultural production to climate change with sustainable management of natural resources and contribute to improving the quality of life and increasing employment in rural areas. PO 2 (iv) of the Hungary-Croatia Programme in particular contributes to Agriculture strategy as it emphasizes need of climate change adaptation to reduce climate change impacts as well as it promotes green land use.
Water Management Strategy	National water management strategy (hereinafter WMS) is a long-term planning document that defines the vision, mission, goals and tasks of the state policy in water management. PO 2 (i) of the Hungary-Croatia Programme promotes reduction of greenhouse gas emission among other through growth in the share renewable energy. Solar and geothermal energy are pointed in the Hungary-Croatia

Name of the relevant document, strategy	Cohesion
	Programme to have real potential for development. Development of hydropower plants that may pose a threat to water bodies is not presented in the Hungary-Croatia Programme.
River Basin Management till 2027	National water management plan (hereinafter WMP) is a fundamental instrument for water management and flood risk management. The WMP determines measures for achievement of water management and water protection goals and other specific goals defined in line with EU and national regulations. PO 2 (i) of the Hungary-Croatia Programme promotes reduction of greenhouse gas emission among other through growth in the share renewable energy. Solar and geothermal energy are pointed in the Hungary-Croatia Programme to have real potential for development. Development of hydropower plants that may pose a threat to water bodies is not presented in the Hungary-Croatia Programme. Importance of climate change adaptation and eco-system based approach emphasized in PO 2 (iv) is also recognized in WMP in flood risk management. PO 3 (ii) promotes better connected border. Road traffic is source of water bodies pollution through emission of heavy metals and PAHs from tires, brakes and mineral (engine) oil. But result of PO 3 (ii) will be shortening of travel time between Hungary and Croatia thus, reduction of heavy metal and PAHs emission.
Multi-annual Programme of Constructing Water Regulation and Protection Facilities and Amelioration Facilities and the Multi-annual Programme for the Construction of Municipal Water Structures for the Period up to 2030	Multi-annual programmes of construction in water management are long-term programmes for construction of (1) water utility facilities (for period until 2030) and (2) regulation and protection water facilities and amelioration facilities (refers to period 2013-2022). Policy objectives of the Hungary-Croatia Programme emphasize the importance of circular economy and green investments (PO 2) and innovative and smart economic transformation (PO 1). These objectives aim the same results as multi-annual programmes, such as sustainable development and protection of environment. Importance of climate change adaptation and eco-system based approach emphasized in PO 2 (iv) is also recognized in multi annual programme for regulation and protection water facilities and amelioration facilities.
Air pollution control programme for the period from 2020 to 2029	Air pollution control programme for the period from 2020 to 2029 aims (1) to achieve air pollutant emission reduction commitments defined by international treaties and EU obligations for sulphur dioxide, nitrogen oxides, non-methane volatile organic compounds, ammonia and particulate matter ($PM_{2.5}$) for the period 2020-2029 and from 2030 onwards, (2) to contribute achieving the goals of limiting anthropogenic emissions of certain pollutants into the air and (3) to make progress in achieving air quality levels that do not lead to significant negative effects and risks to human health and environment.

Name of the relevant document, strategy	Cohesion
	PO 2 (i) of the Hungary-Croatia Programme promotes energy efficiency and reduction of greenhouse gas emissions leading to reducing of fossil fuel consumption. Reduction of fossil fuel consumption contributes to air pollution reduction. PO 3 (ii) promotes better connected border. Road traffic is source of air pollution through emission of different substances produced by fuel combustion in road vehicles engines. But result of PO 3 (ii) will be shortening of travel time between Hungary and Croatia. Shorter travel time results in reducing of fuel consumption i.e. in reducing of air pollutant emisson.
Waste management plan of the Republic of Croatia for period 2023-2028	Waste management plan of the Republic of Croatia for period 2023-2028 (hereinafter WMP) determines the goals in waste management and measures achieving the set goals. Its integral part is the Waste prevention plan. Waste prevention, separative collection, reuse and recovery of waste are integral part of circular economy. PO 2 (iv) of the of the Hungary-Croatia Programme emphasizes the importance of circular economy, green investments etc. Thus, its implementation contributes to goals of WMP.
Integrated national energy and climate plan for the Republic of Croatia for the period 2021-2030	Integrated national energy and climate plan for the period 2021-2030 (hereinafter NECP) is based on to the five key dimensions of the Energy Union: decarbonisation, energy efficiency, energy security, internal energy market and research, innovation and competitiveness. It sets out key targets for 2030 and for achieving of key targets measures in line with other national strategies are determined. PO 3 (ii) of the Hungary-Croatia Programme promotes better connected border. Road traffic is source of greenhouse gasses as result of fuel combustion in road vehicles engines. But result of PO 3 (ii) will be shortening of travel time between Hungary and Croatia. Shorter travel time results in reducing of fuel consumption i.e. in reducing of greenhouse gas emissons. PO 2 (i) and PO 2 (iv) emphasize importance of low-carbon development, clean and fair energy transition, energy efficiency, green investments etc. Thus, Hungary-Croatia Programme implementation contributes to NECP targets.
Energy development strategy of the Republic of Croatia until 2030 with a view to 2050	Energy development strategy of the Republic of Croatia until 2030, with a view to 2050 (hereinafter EDS) presents a step towards achieving the vision of low-carbon energy production and ensures transition to a new period of energy policy. The EDS represents a wide range of energy policy initiatives, which will strengthen security of energy supply, gradually reduce energy losses and increase energy efficiency, reduce dependence on fossil fuels, increase domestic production of electicity and use of renewable energy sources.

Name of the relevant document, strategy	Cohesion
	PO 2 (i) and PO 2 (iv) of the Hungary-Croatia Programme emphasize importance of low-carbon development, clean and fair energy transition, energy efficiency, green investments etc. Thus, its implementation contributes to strategic goals and policies of the EDS.
Programme for the development of green infrastructure in urban areas for the period 2021-2030	Programme for the development of green infrastructure in urban areas for the period 2021-2030 (hereinafter: GIP) aims to establish sustainable, resilient, safe and comfortable cities and municipalities. It seeks to create preconditions for a better quality of life and human health and to contribute to sustainable social, economic and spatial development. PO 2 (iv) of the Hungary-Croatia Programme emphasizes climate change adaptatation and disaster risk prevention, resilience taking into account eco-system based approaches. Thus, its implementation contributes to GIP implementation.
Transport development strategy of the Republic of Croatia for the period from 2017 to 2030	Transport development strategy of the Republic of Croatia for the period from 2017 to 2030 (hereinafter TDS) determines general and specific goals for transport sectors and measures to achieve the set goals. PO 3 (ii) of the Hungary-Croatia Programme promotes better connected border i.e. development of cross-border transport infrastructure. This contributes to more TDS goals of which in particular to specific (cross sectorial) goal of better harmonization of transport operations with neighbouring countries (BiH - Ploče Port and Slavonski Brod, road and rail connections BiH, Slovenia, Serbia, Italy, Montenegro and Hungary).
Plan for the development of the geothermal potential of the Republic of Croatia until 2030	The purpose of the Plan for the development of the geothermal potential of the Republic of Croatia until 2030 (hereinafter GPP) is to ensure the further development and use of geothermal energy as a domestic renewable potential that should be more used more in energy transformations for the production of electricity, i.e. for heating and cooling. PO 2 (i) of the Hungary-Croatia Programme promotes reduction of greenhouse gas emission among other through growth in the share renewable energy. Solar and geothermal energy are pointed in the Hungary-Croatia Programme to have real potential for development. Thus, its implementation contributes to GPP implementation.
Sustainable tourism development strategy until 2030	Sustainable tourism develoment strategy until 2030 (hereinafter STDS) is a strategic planning act that serves to shape and implement development tourism policies. In line with development needs and potential, strategic goals STDS determines strategic goals and priority areas within strategic goals. Strategic goals are: year-round

Name of the relevant document, strategy	Cohesion
	and more regionally balanced tourism; tourism with preserved environment, space and climate; competitive and innovative tourism; and sustainable tourism. PO 4 (vi) of the Hungary-Croatia Programme emphasizes the importance of enhancing the role of culture and sustainable tourism in economic development, social inclusion and social innovation. It is stated that tourism infrastructure and services should be developed in a coordinated way and respecting nature preservation aspects on basis of local natural and cultural heritage, focusing on development and promotion of tourism attractions, green mobility (cycling, hiking, kayak/canoe tours), improving physical connection of tourism attractions, developing tourism-related active and sport infrastructure as well as infrastructure related to cultural tourism, further strengthening the existing emerging brands (Mura-Drava-Danube Transboundary UNESCO Biosphere Reserve, EuroVelo 13, Amazon of Europe), for the sake of generating unique and competitive tourism products. Thus, its implementation contributes to all STDS strategic goals.
National plan for sustainable tourism until 2027 and an Action plan for the implementation of the National plan for sustainable tourism until 2025	National plan for sustainable tourism until 2027 (hereinafter NPST) defines the implementation of the Sustainable tourism develoment strategy strategic goals and National development strategy of the Republic of Croatia until 2030 strategic goals in the field of tourism. Based on strategic goals NPST determines ten specific goals and measures to achive them. Action plan elaborates in detail NPST measures until year 2025. PO 4 (vi) of the Hungary-Croatia Programme emphasizes the importance of enhancing the role of culture and sustainable tourism in economic development, social inclusion and social innovation. It is stated that tourism infrastructure and services should be developed in a coordinated way and respecting nature preservation aspects on basis of local natural and cultural heritage, focusing on development and promotion of tourism attractions, green mobility (cycling, hiking, kayak/canoe tours), improving physical connection of tourism attractions, developing tourism-related active and sport infrastructure as well as infrastructure related to cultural tourism, further strengthening the existing emerging brands (Mura-Drava-Danube Transboundary UNESCO Biosphere Reserve, EuroVelo 13, Amazon of Europe), for the sake of generating unique and competitive tourism products. Thus, its implementation contributes to mayority of NPST specific goals.
Development plan of Međimurska county till 2027	Development plan of Međimurska county till 2027 (hereinafter DP) is the main document for Međimurska county sustainable development. It includes medium-term vision, public policy priorities with special goals, as well as measures to achieve them. Public policy priorities are: (1) sustainable development, (2) healthy, inclusive and resilient society and (3) green and digital Međimurje.

Name of the relevant document, strategy	Cohesion
	PO 1 (iii), PO 4 (ii), PO 4 (vi) of the Hungary-Croatia Programme contribute to priority (1) sustainable development. PO 2 (iv), PO 4 (vi), ISO 1 (b) and ISO (c) contribute to priority (2) healthy, inclusive and resilient society. PO 2 (i), PO 3 (ii) and PO 4 (vi) contribute to priority (3) green and digital Međimurje. In DP priority (3) green and digital Međimurje, in its special goal modern transport infrastructure, among other things, the need to re-establish passenger traffic Kotoriba - Murakeresztur is highlighted.
Spatial plan of Međimurska county	Spatial plan of Međimurska county (hereinafter SP) elaborates the principles of spatial planning and determines organisation, protection, use and purpose of Međimurska county territory. Spatial development should be rational in order to preserve and protect the county area. PO 2 (i) and PO 2 (iv) of the Hungary-Croatia Programme emphasize the importance of low-carbon development, green investments, circular economy, climate adaptation, etc. Reduction of greenhouse gas emissions emphasized in PO 2 (i) by increase of energy efficiency represent rational use of natural resources. Protection of natural assets emphasized in PO 2 (iv) is in line with the SP as its provisions protect area of natural values, landscape and forests. Climate adaptation and disaster risk management also emphasized in PO 2 (iv) is directed in the SP primarily to flood protection and erosion. PO 4 (ii) related to educational infrastructure is in line with the SP as distance and on-line education and lifelong learning are important in balanced development of society of county. Importance of culture and sustainable tourism emphasized in PO 4 (vi) of the Hungary-Croatia Programme is also recognized within the SP. PO 3 (ii) promotes better connected border i.e. development of cross-border transport infrastructure. SP determines provisions for the development of transport infrastructure.
Development plan of Varaždinska county for the period 2021-2027	Development plan of Varaždinska county for the period 2021-2027 (hereinafter DP) is the main document for Varaždinska county sustainable development. It includes medium-term vision, public policy priorities with special goals, as well as measures to achieve them. Public policy priorities are: (1) smart (and creative) county, (2) green (and sustainable) county and (3) healty (and active and inclusive) county. PO 1 (iii), PO 4 (ii), PO 4 (vi), ISO (b) and ISO (c) of the Hungary-Croatia Programme contribute to priority (1) smart (and creative) county. PO 1 (iii), PO 2 (i), PO 2 (iv), PO 3 (ii) and PO 4 (vi) contribute to priority (2) green (and sustainable) county. ISO (c) contributes to apriority (3) healty (and active and inclusive) county.

Name of the relevant document, strategy	Cohesion
Spatial plan of Varaždinska county	Spatial plan of Varaždinska county (hereinafter SP) elaborates the principles of spatial planning and determines organisation, protection, use and purpose of Varaždinska county territory. Spatial development should be rational in order to preserve and protect the county area. Protection of natural asset emphasized in PO 2 (iv) of the Hungary-Croatia Programme is in line with the SP as its provisions protect area of natural values, landscape, and forests. Disaster risk management emphasized also in PO 2 (iv) is directed in the SD primarily to flood protection. Importance of sustainable tourism emphasized in PO 4 (vi) is also recognized within the SP. PO 3 (ii) promotes better connected border i.e. development of cross-border transport infrastructure. SP determines provisions for the development of transport infrastructure.
Development plan of Koprivničko-križevačka county for the period 2021-2027	Development plan of Koprivničko-križevačka county for the period 2021-2027 (hereinafter DP) is the main document for Koprivničko-križevačka county sustainable development. It includes medium-term vision, special goals with development priorities, as well as measures to achieve them. The DP goals are: (1) better connected county with circular economy, (2) socially sensitive county and (3) smart and green county. PO 2 (iv) and PO 3 (ii) of the Hungary-Croatia Programme contribute to achieving goal (1) better connected county with circular economy. PO 4 (ii), PO 4 (vi), ISO 1 (b) and ISO 1 (c) contribute to achieving goal (2) socially sensitive county. PO 1 (iii), PO 2 (i), PO 2 (iv) and PO (vi) contribute to achieving goal (3) smart and green county.
Spatial plan of Koprivničko-križevačka county	Spatial plan of Koprivničko-križevačka county (hereinafter SP) elaborates the principles of spatial planning and determines the organisation, protection, use and purpose of Koprivničko-križevačka county territory. PO 2 (i) of the Hungary-Croatia Programme promotes reduction of greenhouse gas emission among other through growth in the share renewable energy. The SP envisages development of renewable energy sources depending on county's natural specifics and economic potentials. Protection of natural asset emphasized in PO 2 (iv) is in line with the SP as its provisions protect area of natural values, landscape, and forests. Climate adaptation and disaster risk management emphasized in PO 2 (iv) is recognized in the SP as need, and its provision are directed mainly to flood protection and green infrastructure. It is recognized by the SP that for all vulnerable projects appropriate climate adaptation measures should be determined. PO 3 (ii) promotes better connected border i.e. development of cross-border transport infrastructure. SP determines provisions for the development of transport infrastructure.

Name of the relevant document, strategy	Cohesion
Development plan of Bjelovarsko-bilogorska county for the period 2022-2027	Development plan of Bjelovarsko-bilogorska county for the period 2022-2027 (hereinafter DP) is the main document for Bjelovarsko-bilogorska county sustainable development. It includes medium-term vision, public policy priorities with special goals, as well as measures to achieve them. The DP public policy priorities are: (1) development of innovative and sustainable economy, (2) increase the quality of life, (3) green and digital transition and (4) high quality county managment. PO 1 (iii), PO 4 (ii) and PO 4 (vi) of the Hungary-Croatia Programme contribute to priority (1) development of innovative and sustainable economy. ISO 1 (c) contributes to priority (2) increase the quality of life. PO 2 (i),PO 2 (iv) and PO 3 (ii) contribute to priority (3) green and digital transition. ISO 1 (b) and ISO 1 (c) contribute to priority (4) high quality county management.
Spatial plan of Bjelovarsko-bilogorska county	PO 1 (iii) of the Hungary-Croatia Programme emphasizes importance of SMEs in economic progress and PO 4 (vi) emphasizes importance of sustainable tourism in economic development. Spatial plan of Bjelovarsko-bilogorska county (hereinafter SP) recognizes importance of SME and sustainable tourism as well. PO 2 (i) promotes reduction of greenhouse gas emission among other through growth in the share renewable energy and the SP envisages development of renewable energy as well. Protection of natural asset emphasized in PO 2 (iv) is in line with the SP as its provisions protect area of natural values, landscape, and forests. Part of the SP are provisions related to disaster risk management, emphasized also in PO 2 (iv) of the Hungary-Croatia Programme. PO 3 (ii) promotes better connected border i.e. development of cross-border transport infrastructure. SP determines provisions for the development of transport infrastructure.
Development plan of Virovitičko-podravska county for the period 2021-2027	Development plan of Virovitičko-podravska county for the period 2021-2027 (hereinafter DP) is the main document for Virovitičko-podravska county sustainable development. It includes medium-term vision, public policy priorities with special goals, as well as measures to achieve them. The DP public policy priorities are: (1) strengthening the county's economy, (2) improving the quality of life, (3) green transition and good management of space and environment and (4) improving quality of development management. PO 1 (iii), PO 4 (ii), PO 4 (vi) and ISO (c) contribute to priority (1) strengthening the county's economy. PO 4 (vi) and ISO (c) contribute to priority (2) improving the quality of life. PO 2 (i), PO 2 (iv) and PO 3 (ii) contribute to priority (3) green transition and good management of space and environment. PO 2 (iv) and ISO (b) contribute to priority (4) improving quality of development management.

Name of the relevant document, strategy	Cohesion
Spatial plan of Virovitičko-podravska county	PO 1 (iii) of the Hungary-Croatia Programme emphasizes importance of SMEs in economic progress and PO 4 (vi) emphasizes importance of sustainable tourism in economic development. Spatial plan of Virovitičko-podravska county (hereinafter SP) recognizes importance of SME and sustainable tourism as well. PO 2 (i) promotes reduction of greenhouse gas emission among other through growth in the share renewable energy and the SP envisages development of renewable energy as well. Protection of natural asset emphasized in PO 2 (iv) is in line with the SP as its provisions protect area of natural values, plant and animal species landscape, and forests. Part of the SP are provisions related to disaster risk management, emphasized also in PO 2 (iv) of the Hungary-Croatia Programme. PO 3 (ii) promotes better connected border i.e. development of cross-border transport infrastructure. SP determines provisions for the development of transport infrastructure.
Development plan of Požeško-slavonska county for the period 2021-2027	Development plan of Požeško-slavonska county for the period 2021-2027 (hereinafter DP) is the main document for Požeško-slavonska county sustainable development. It includes medium-term vision, public policy priorities with special goals, as well as measures to achieve them. The DP public policy priorities priorities are: (1) development of a competitive innovative economy through green and smart development, (2) increase the quality of life, (3) efficient public administration and asset management, spatial and strategic planning and (4) balanced regional development. PO 1 (iii), PO 4 (ii) and PO 4 (vi) of the Hungary-Croatia Programme contribute to priority (1) development of a competitive innovative economy through green and smart development. PO 2 (i), PO 2 (iv), PO 3 (ii), PO 4 (ii), ISO 1 (b) and ISO 1 (c) contribute to priority (2) increase the quality of life. PO 2 (iv) and ISO 1 (b) contribute to priority (3) effective public administration and asset management. PO 1 (iii), PO 2 (i), PO 2 (iv), ISO 1 (b) and ISO 1 (c) contribute to priority (4) balanced regional development.
Spatial plan of Požeško-slavonska county	Spatial plan of Požeško-slavonska county (hereinafter SP) elaborates the principles of spatial planning and determinesand organisation, protection, use and purpose of Požeško-slavonska county territory. PO 1 (iii) of the Hungary-Croatia Programme emphasizes importance of SMEs in economic progress and PO 4 (vi) emphasizes importance of sustainable tourism in economic development. SP recognizes importance of SME in economic progress and in balanced development of county territory as well and recognizes also need of developing tourism in sustainable way. PO 2 (i) promotes reduction of greenhouse gas emission among other through growth in the share renewable energy and the SP envisages the development of renewable energy as

Name of the relevant document, strategy	Cohesion
	well. Protection of natural asset emphasized in PO 2 (iv) is in line with the SP as its provisions protect area of natural and landscape values, and forests. Part of the SP are provisions related to disaster risk management, emphasized also in specific objective PO 2 (iv) of the Hungary-Croatia Programme. PO 3 (ii) promotes better connected border i.e. development of cross-border transport infrastructure. SP determines provisions for the development of transport infrastructure.
Development plan of Osječko-baranjska county for the period 2021-2027	Development plan of Osiječko-baranjska county for the period 2021-2027 (hereinafter DP) is the main document for Osiječko-baranjska county development. It includes medium-term vision, priority areas with special goals, as well as measures to achieve them. The DP priority areas are: (1) strengthening and improving the social system and the quality of life of citizens (2) quality, safe and preserved living space, (3) regional visibility, competitiveness and innovation of the economy and (4) effective and efficient management. PO 4 (ii), ISO 1 (b) and ISO 1 (c) of the Hungary-Croatia Programme contribute to priority (1) strengthening and improving the social system and the quality of life of citizens. PO 2 (i), PO 2 (iv) and PO 3 (ii) contribute to priority (2) quality, safe and preserved living space. PO 1 (iii), PO 4 (vi), ISO 1 (b) and ISO 1 (c) contribute to priority (3) regional visibility, competitiveness and innovation of the economy. ISO 1 (b) and ISO 1 (c) contribute to priority (4) effective and efficient management.
Spatial plan of Osječko-baranjska county	Spatial plan of Osiječko-baranjska county (hereinafter SP) defines the spatial development of Osiječko-baranjska county territory. PO 2 (i) of the Hungary-Croatia Programme promotes reduction of greenhouse gas emission among other through growth in the share renewable energy. The SP envisages the development of renewable energy as well. Protection of natural asset emphasized in PO 2 (iv) is in line with the SP as its provisions protect area of natural and landscape values, and biodiversity. Climate adaptation and disaster risk management emphasized in PO 2 (iv) are directed in the SP primarily to flood protection. PO 3 (ii) promotes better connected border i.e. development of cross-border transport infrastructure. SP determines provisions for the development of transport infrastructure.
Development plan of Vukovarsko-srijemska county for the period 2021-2027	Development plan of Vukovarsko-srijemska county for the period 2021-2027 (hereinafter DP) is the main document for Vukovarsko-srijemska county sustainable development. It includes medium-term vision, public policy priorities with strategic and special goals, as well as measures to achieve them. The DP public policy priorities are: (1) development of a competitive, innovative and sustainable economy and the improvement of the quality of life, (2) security for stable development, demographic revitalization and strengthening resilience to

Name of the relevant document, strategy	Cohesion
	crises, (3) green and digital transition and (4) increasing regional competitiveness and balanced regional development. PO 1 (iii), PO 4 (ii), PO 4 (vi) and ISO (c) of the Hungary-Croatia Programme contribute to priority (1) development of a competitive, innovative and sustainable economy and the improvement of the quality of life. PO 2 (iv) contribute to priority (2) security for stable development, demographic revitalization and strengthening resilience to crises. PO 2 (ii), PO 3 (ii) and ISO (b) contribute to priority (3) green and digital transition. PO 1 (iii), and PO 4 (vi) contribute to priority (4) increasing regional competitiveness and balanced regional development.
Spatial plan of Vukovarsko-srijemska county	Spatial plan of Vukovarsko-srijemska county (hereinafter SP) determines goals in use and management of Vukovarsko-srijemska county and provides guidelines for achieving the defined goals. PO 2 i) of the Hungary-Croatia Programme promotes reduction of greenhouse gas emission among other through growth in the share renewable energy. The SP envisages development of renewable energy as well. Protection of natural asset emphasized in PO 2 (iv) is in line with the SP as its provisions protect area of natural and landscape values. Climate adaptation and disaster risk management emphasized in PO 2 (iv) of the Hungary-Croatia Programme are recognized in the SP as need, and it is pointed out that for all vulnerable projects appropriate climate adaptation measures should be determined. PO 3 (ii) promotes better connected border i.e. development of cross-border transport infrastructure. SP determines provisions for the development of transport infrastructure.

4.2 Internal consistency of the programme document

In this Chapter, we examine the internal consistency of the Hungary-Croatia Programme document, paying particular attention to the following:

- possible contradictions between Chapter 1 and Chapter 2 of the programme documents, and
- possible contradictions between the actions of the planned priorities.

The Territorial Analysis (Chapter 1) of the programme document contains a detailed presentation of the natural endowments, spatial characteristics, the social and economic features, the challenges, the needs and the great potential inherent in the programme area. Chapter 1 also includes the justification for the selected policy objectives (PO), Interreg-specific objective (ISO), the specific objectives and the corresponding prioirities, which are thoroughly detailed in Chapter 2. In Chapter 1, the POs and SOs are analysed in the light of the conclusions and lessons learned from the previous programme, and compared to other EU and national programmes and strategies as well.

The conclusions drawn confirm that although the two countries have a common history on the field of cross-border cooperation, there are still cooperation areas to improve. According to the Territorial Analysis, actors from counties not directly situated by the border shall be better involved and motivated through the programme implementation period. The 2021-2027 Hungary-Croatia Programme will take this finding into account and place greater emphasis on territorial integrity. Based on the previous experiences, accurate and appropriate definition of the indicators is a priority of the current Hungary-Croatia Programme as well, however, according to the document, the output and result indicators related to the priorities are currently not final and might be amended during the negotiation process.

Regarding the synergies with other regional strategies, there was some logical contradiction between the wording and the tables (Chapter 1.2, page 14 of the Hungary-Croatia Programme document) included in the document:

- according to the wording, with the exception of PA 1a Waterways Mobility, PA 1b Rail-Road-Air Mobility and PA11 Security, all of the EUSDR' PAs have synergy with the SOs of the Programme. However, as shown in the table, a moderate connection was detected between the PO 4- SO (vi) with the EUSDR PA 1a and the Programme's ISO 1 and the EUSDR PA 11.

Chapter 1 reveals that the Hungary-Croatia Programme area is characterised by no sector specialisation, thus it is indeed appropriate that the Hungary-Croatia Programme equally offers opportunities through the Interreg-specific objective to public authorities and institutions and through the thematic objectives; to SMEs from various sectors, civil organisations and the general public.

Chapter 2 introduces the selected priorities and contains a more detailed justification of the selected SOs, including for each case the expected results, the intervention areas, a list of future actions supported, the most important principles for the selection criteria, the indicators, the target groups and the indicative breakdown of the EU programme resources by type of intervention. For the 2021-2027 Hungary-Croatia Programme, four priorities were identified.

Priority 1 targets a competitive border region, and the initiatives launched under the SO (iii) *enhancing sustainable growth and competitiveness of SMEs and job creation in SMEs, including by productive investments* will be one of the projects with the highest cross-border relevance. The priority of the previous Hungary-Croatia Programme aimed at to strengthen business cooperation has now been expanded by the intention of promoting innovation cooperation in the border region as well. The enhancement of the business cooperation is built on solid foundations as the partner countries have significant previous experience. Since the region lacks large enterprises, the definition of SMEs as the target group of the SO is also rational. The expected results, such as the more competitive SMEs operating in the programme area, the decrease of the extent of brain drain on both sides of the border and the achievement of the integrated economic development and the actions under this priority are consistent.

The aim of Priority 2 is a greener and low-carbon border region for the achievement of which two SOs were selected under PO 2 by the Hungary-Croatia Programme. Between SO (i) *promoting energy efficiency and reducing greenhouse gas emissions* and SO (iv) *promoting climate change adaptation and disaster risk prevention, resilience, taking into account ecosystem based approaches* there is a close connection and the activities related to them reinforce each other's effect. As the Hungary-Croatia Programme tends to focus on supporting small-scale investments and soft activities, according to experts involved in the programming process, selecting SO (i) was not necessarily rational, since energy related projects require a large amount of support. The programme document also justifies that due to limited sources, larger infrastructural investments are out of the scope of the Hungary-Croatia Programme. Thus, the actions listed under SO (i) related to pilot and infrastructure investments shall be reconsidered as the effective implementation of these require financial expenditures.

The goal of priority 3 is to create a more connected border region. SO (ii) "Developing and enhancing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross-border mobility" has been included in the programme in order to combat the unfavourable conditions of the road network in the border region. These conditions derive from the fact that most of the border area is situated in the triangle of three TEN-T networks elements, with an average distance of 72 km between border crossings. Improving these conditions, creating more infrastructural connections between the two countries may help reduce the economic, commercial and social difficulties experienced in the region. The reduction in travel time caused by the improved road network would not only be economically beneficial but it would also create a greener transportation in the area.

Priority 4 is aimed at an inclusive border region. For this priority, two SOs were selected under PO 4 by the Hungary-Croatia Programme: SO ((vi) *enhancing the role of culture and sustainable tourism in economic development, social inclusion and social innovation* and SO (ii) *improving access to inclusive and quality services in education, training and lifelong learning through developing accessible infrastructure, including by fostering resilience for distance and on-line education and training*. The selection of both objectives is justified and the related, however, the SOs selected under PO 4 represent quite diverse themes. The actions under SO (vi) place great emphasis on post-Covid recovery by taking into account the outdoor and nature-friendly touristic activities. Supporting tourism which is a key factor of the programme area is a viable choice. It is important to recognize that, in order to compensate for the difficulties caused by the Covid-19 pandemic, the Hungary-Croatia Programme aims to boost tourism in the lagging behind areas and promote green tourism as well. SO (ii) focuses on education and the activities under the specific objective are closely related to Priority 1 and 2. One of the main objective of the Hungary-Croatia Programme is to increase the economic competitiveness of an inclusive border area, which is conditional on improving the employment situation by matching the labour market supply and demand. Since most of the SMEs in the Hungary-Croatia Programme area are still lacking business and entrepreneurship skills, greater emphasis will be placed on vocational education and trainings. However, launching educational and vocational programmes defined by the Hungary-Croatia Programme might restore the balance of the market and eliminate the socio-economic disparities in the area. In summary, the mainly soft activities under Priority 4 meet indeed the regional needs and make the development of an inclusive border region enable.

The final priority of the Hungary-Croatia Programme, Priority 5 aims to create a cooperation border region through the implementation of actions supporting the enhancement of efficient public administration (ISO 1 (b)), and the people-to-people cooperation (ISO1 (c)). Activities under this priority will contribute to strengthening cooperation and capacity building on issues not covered by other SOs. The selected actions will allow the widest possible range of interactions between citizens, the civil society, institutions, while facilitating the social inclusion in line with Priority 4. In this context, it is important to note that a final decision has yet been made by the PC on small-scale projects within the small project funds (SPF).

In summary, it can be concluded that the priorities planned within the framework of the Hungary-Croatia Programme respond to relevant problems and challenges of the border region, and the actions planned under the programme priorities complement each other. The target group of the Hungary-Croatia Programme include all groups of the society and the actions under the priorities are in line with the environmental objectives of the European Union. There is no significant contradiction between Chapter 1 and Chapter 2, and apart from minor logical misunderstandings and errors, the internal consistency of the document is ensured. Regarding the wording of the document, the haste caused by the circumstances hindering the programming process is moderately perceptible, however this cannot constitute an obstacle to achieving the objectives set by the Hungary-Croatia Programme in the 2021-2027 period.

5 Socio-economic and environmental characteristics of the CBC landscape

Based on the Territorial analysis, the Chapter briefly describes the current socio-economic and environmental situation of the Hungary-Croatia Cross Border Cooperation (CBC) area and its expected evolution without the implementation of the Hungary-Croatia Programme, in particular the cross-border systems, including the advantages and disadvantages of the cross-border location.

Within the first subchapter, the socio-economic system of the region is described on the basis of the relevant Chapter(s) of the Situation Analysis, examining the following main areas:

- Demography
- Spatial structure and built environment
- Economy and innovation
- Infrastructural connectivity
- Social inclusion
- Cultural heritage and institutional cooperation

The second subchapter is a brief description of the environmental status of the CBC region based on relevant Chapter(s) of the Situation Analysis, focusing on the following aspects:

- Environment
- Low-carbon & green perspective

5.1 The socio-economic characteristics of the areas which are likely to be affected by the programme objectives

5.1.1 Demography

Regarding the demography of the Hungary-Croatia CBC area most processes are relatively the same. The counties are facing serious demographic erosion which affects local infrastructure, economy and environment. Between 2016 and 2021 the rate of the population decreasing in the Hungarian counties was 2.6-3.6% while in Croatia this data was higher, between 4.2-12.3%. The most severe population loss were in Vukovarsko-srijemska, Osjecko-baranjska, Viroviticko-podravska, Pozesko-slavonska counties which lost more than one tenth of its residents in six years.

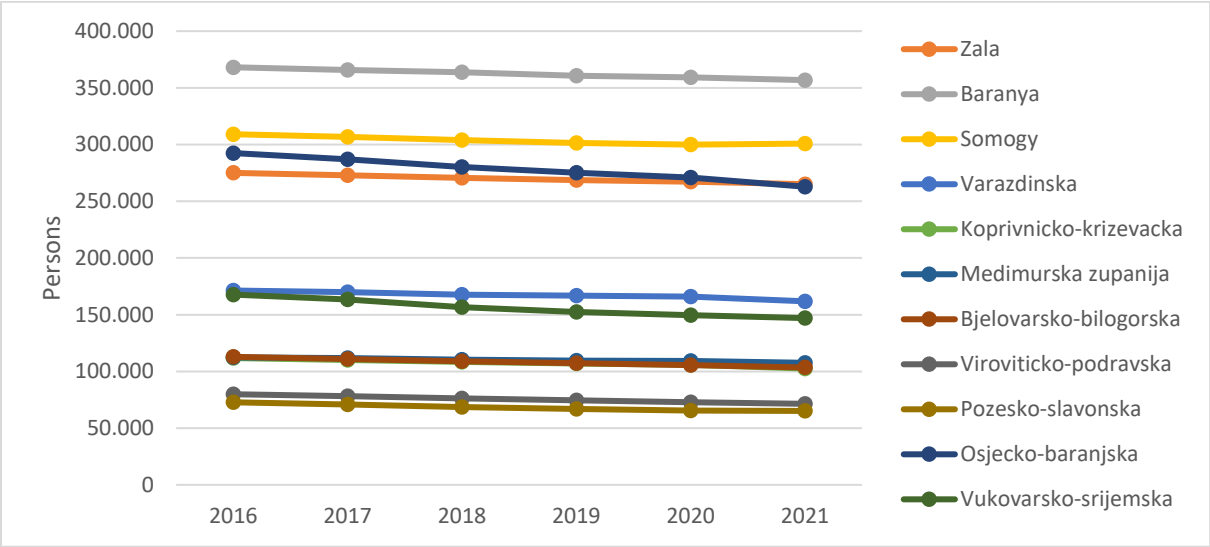

Figure 1. Population change of the CBC area, 2016-2020

Source: Eurostat

Rural areas are more effected by the process of depopulation, young and skilled population often migrates to cities within the country or abroad. Due to the demographic erosion, the rate of the lower income or pensioner population may increase which lead to a significant loss in the municipal budget. This effect is limiting the capabilities of municipalities in maintaining local infrastructure such as road network, healthcare and education. Regarding the Croatian counties, within the country these areas are less affected by the international migration, the Adriatic region is a more popular destination for temporary or permanent migration. Moreover, Zagreb and Budapest are close the CBC area, the capitals have good position in attracting the quality workforce.

One of the main causes of the decreasing number of local residents is the low fertility rate of the population. The indicator shows the average number of children which one woman has in a lifetime. For maintaining the population this number should be at least 2. The figure below shows the difference in fertility rate in the CBC area.

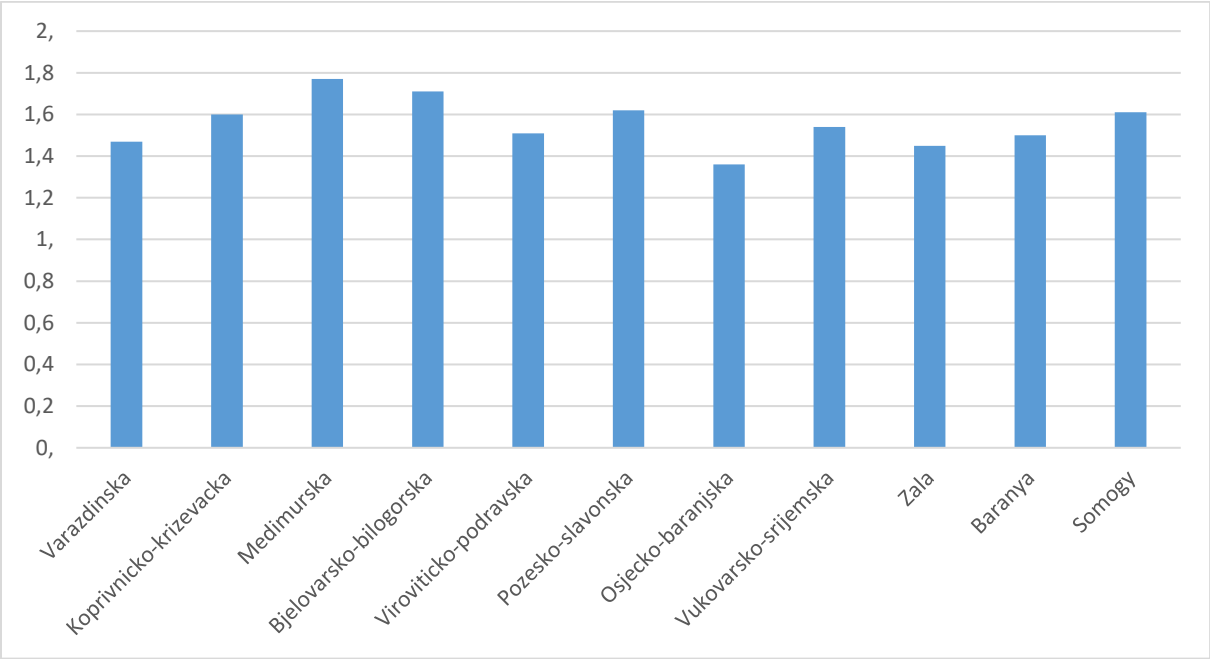

Figure 3. Total fertility rate of the CBC area, 2019

Source: Eurostat

All counties within the area have lower fertility rate than it is needed for the long-term sustaining of the population, however in Osjecko-baranjska, Zala and Varazdinska counties the situation is critical with values below 1,5. With the decreasing number born children the median ages of the local populations are rising, while the population of the counties shows the problems of an ageing society. Without changing the counties fertility situation, only one factor could alleviate the rapid falling number of population, which is internal or external migration.

Ageing of the population has various effects on the local economy:

- decreasing the amount of the skilled and available workforce, while the number of pensioners is increasing;
- changing the structure of the local economy with new consumption patterns (e.g., more frequent need for healthcare services, fewer investments in building industry);

All the mentioned effects are causing significant disadvantage in the ability to attract foreign direct investment.

According the forecasts of the Eurostat all counties of the CBC area will face a dramatic loss of population, in which the numbers of 6 of 8 Croatian counties will be halved (in Vukovarsko-srijemska and Pozesko-slavonska counties it is 67%!).

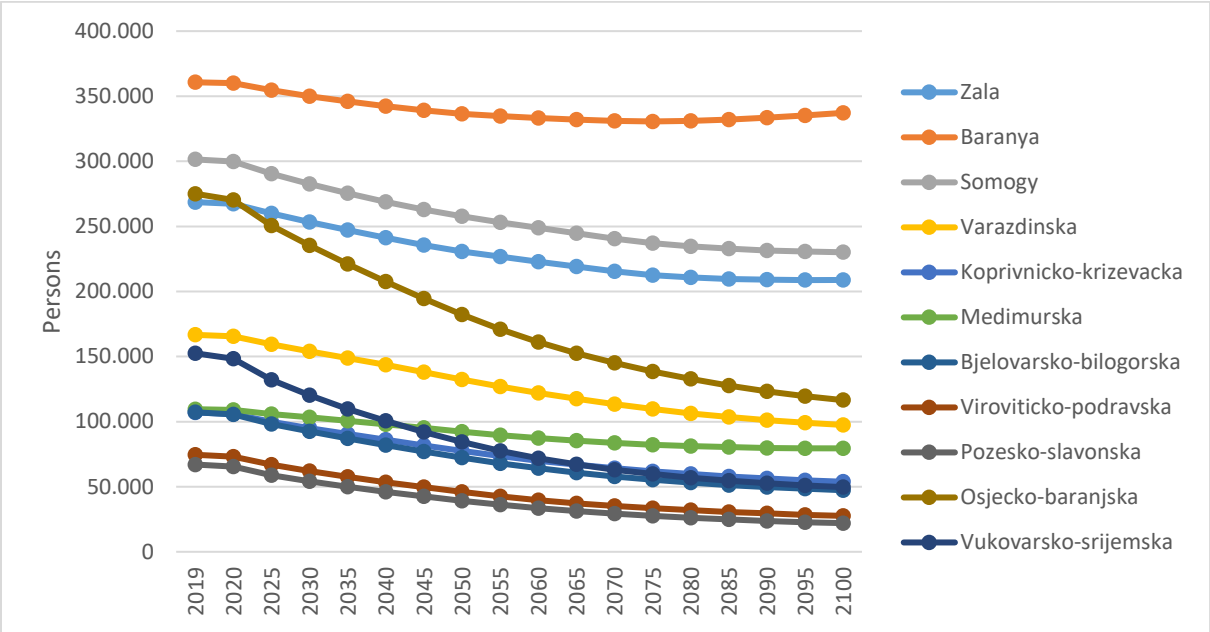

Figure 4. Population forecast of the CBC area, 2019-2100

Source: Eurostat

One of the key problematic areas which EU funds should target is changing or at least sustainably manage the depopulation process where despite the decreasing number population the local economic performance and quality of life can be maintained.

5.1.2 Spatial structure and built environment

Regarding spatial structure, Hungary and Croatia have different physical geography parameters, counties within the Carpathian basin have smaller difference in altitude, therefore the settlement structure is denser. In the Croatian counties more than third of the population is living in settlements with population less than 1000 souls. As the figure shows below, the greatest city and regional center is Pécs in the CBC area, and 4 out of 5 most populated cities are in the Hungarian counties.

The greatest cities within the CBC area are the following:

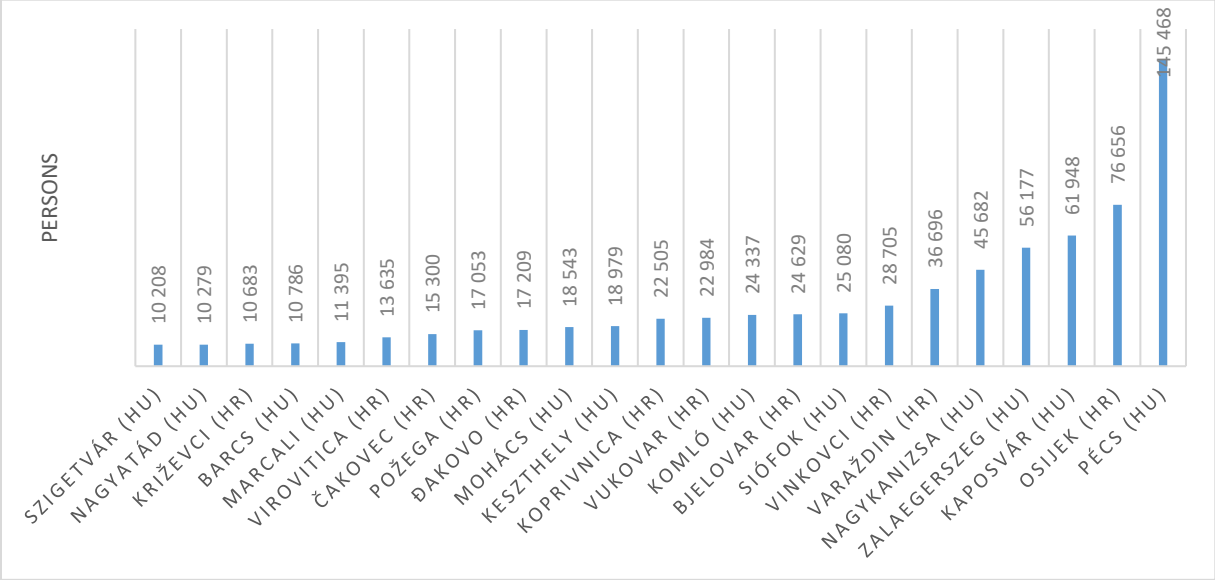

Figure 5. Cities by population in the CBC area, 2021

Source: popis2021.hr; ksh.hu

Cities are concentrating variety of services from commerce, healthcare, education, industrial activities which gives people more opportunities compared to rural spaces. Urbanisation has been a key spatial structure changing process since the 19th century Industrial Revolution, and cities still have comparative advantages. In Europe many axles of regional development can be observed, where the engines are great cities as London, Paris, Munich, Berlin, Budapest, Warsaw, Moskov.

There are special elements in the spatial development of the area, one is the road network. The Hungarian counties are connected by the M7 and M6 highways and the interconnecting road network. The main axis of the road freight and commerce is between Budapest-Zagreb and Budapest-Pécs-Osijek, which is an important factor for settling new businesses, and attracting foreign capital. For cities outside of the highway network have worse capabilities to connect the national commerce and business development.

Regarding the railway network the figure below shows the main transportation corridors in the Croatian part of the CBC area. The most used lines are between Varazdin, Osijek and Zagreb, while in the Hungarian part between Zalaegerszeg-Székesfehérvár/Győr, Nagykanizsa-Székesfehérvár, Pécs-Budapest.

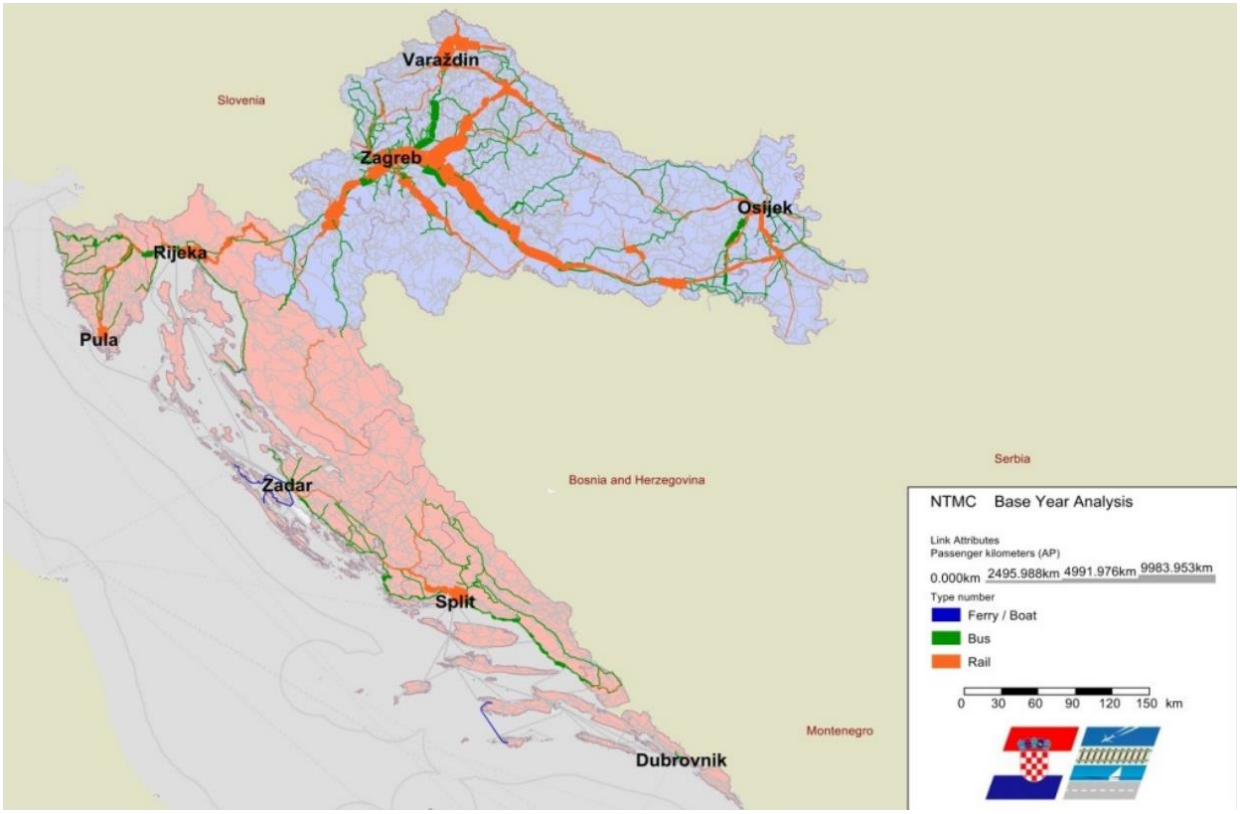

Figure 6. Awerage passenger transport volume

Source: Transport Development Strategy of the Republic of Croatia (2017-2030)

Spatial structures as infrastructure are highly dependent on the natural environment. In Hungary Balaton and the other natural landmarks (as hills of Somogy, Mecsek mountain) are describing the possibilities of the growing settlement structure and development of the road network. On the other hand, in Croatia higher mountains with dense forests giving the place for spatial structures. Another main natural obstacles between the two countries' road connectivity are rivers. Having recognized this obstacle the two countries' have addressed this challenge by initiating the strategic project: "Preparation for constructing Mura Bridge and connecting road infrastructure facilities at Murakeresztúr (HU) and Kotoriba (CRO)/MuKoBridge" (HUHR/1902/2.1.4/0002).

The need and intention to improve transport connections between Croatia and Hungary was acknowledged by both parties in the "Declaration of Intent between the Republic of Croatia and Hungary with the aim to foster economic cooperation and the related transport connections between the border regions of the Republic of Croatia and Hungary" signed on 5th March 2020. In 2023 Croatia has joined the Schengen area which created a significant opportunity to reach this goal as crossing the border has become much more flexible both in terms of development and regulation.

5.1.3 Economy and innovation

The most common indicator for measuring economic performance of different regions is the indicator of Gross Domestic Product. Regarding GDP two group of counties can be observed within the CBC area, while the 3 Hungarian and Osjecko-baranjska, Varazdinska counties showed economic development between 2011-2019, 6 other Croatian counties produced relatively the same, stagnant performance. The lines also show the effect of the Covid-19 pandemic crisis where the economic downturn is more significant in counties which have had greater increase in GDP.

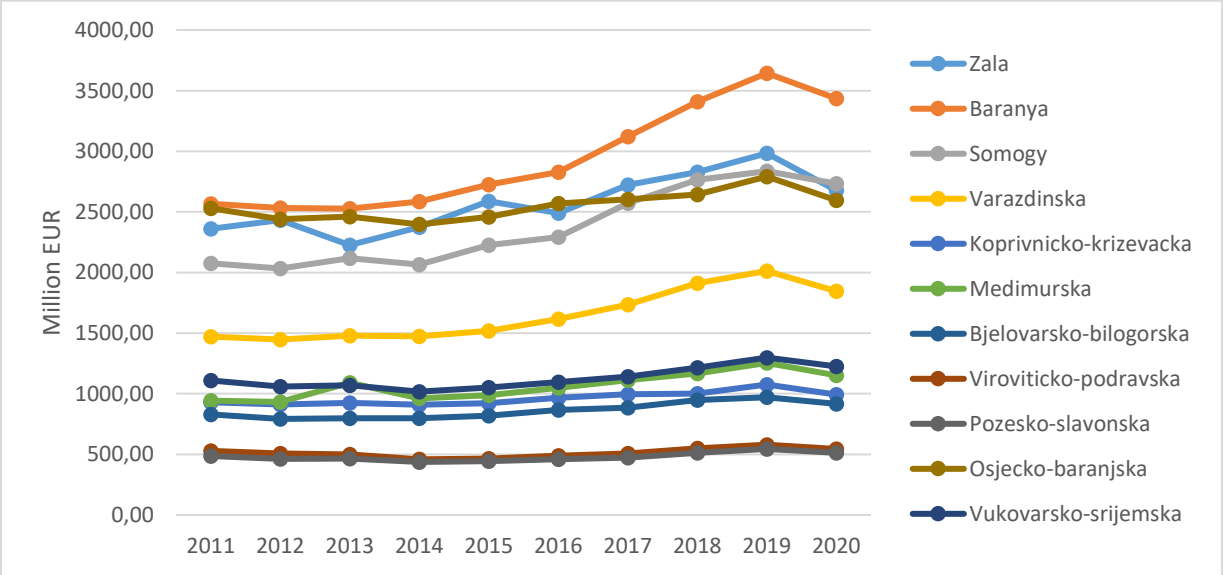

Figure 7. GDP values of the CBC area, 2011-2020

Source: Eurostat

The counties as part of the European Union are highly dependent on the available support of the community, as all the area is part of a cohesion region, the counties are the main beneficiaries of the EU funds.

One of the other indicators of the economy's performance in the CBC area is the risk of poverty. According to Eurostat 2020 data, 18.3% of the population in continental Croatia and 19.5% in Hungary are at risk of poverty. The worsening poverty situation in the counties is in close connection with the critical effects of the pandemic lockdown and the rising inflation – which were more severe in Hungary.

Regarding employment, all counties of the CBC area have relatively limited potential in creating jobs as quality workforce gravitates capitals and more developed countries. The figure below shows the distribution of employees within the countries. Two Croatian counties have relatively higher rate of the national employment, Osjecko-baranjska and Varazdinska. The data shows the relative economic role of the counties which shows a stagnant or decreasing situation (except Bjelovarsko-bilogorska county).

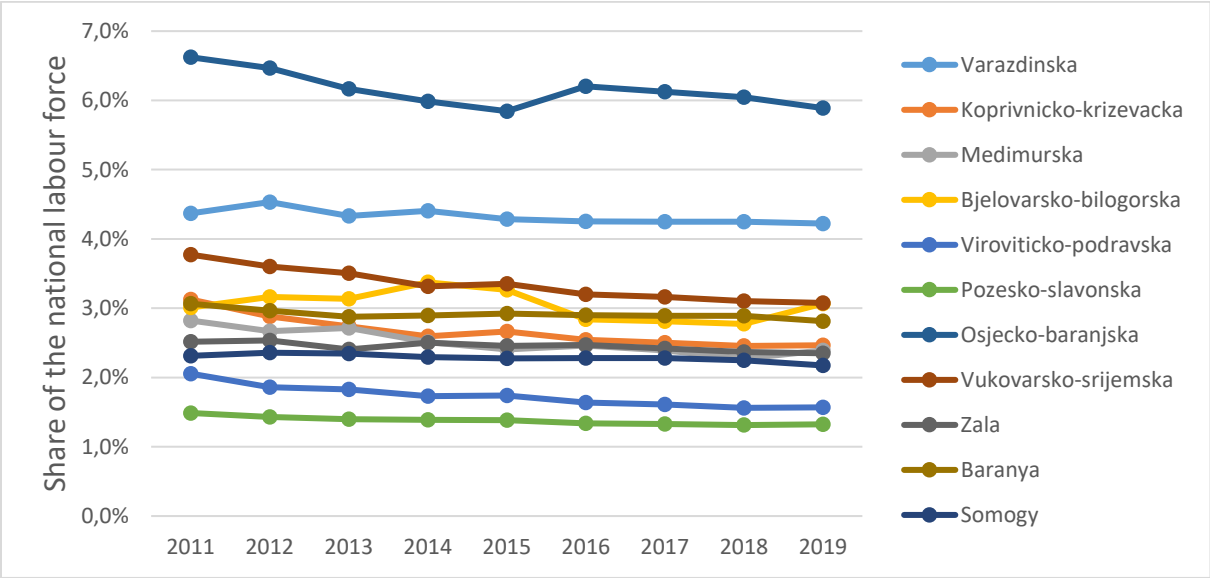

Figure 8. Distribution of workforce in the two countries, 2011-2019

Source: Eurostat

Regarding the economic and demographic challenges in the CBC area, EU funds should target the creation of high added value economic activities, jobs with which the decreasing local workforce could maintain the quality of life within the region.

5.1.4 Infrastructural connectivity

The transport infrastructure relatively well built in the CBC area, the M6 and M7 highway and their continuing parts in Croatia are securing safe and fast travel of people and goods. Minor roads are connecting the smaller settlements to the main network, which has varying quality. Although the road network is fundamental for import/export of goods and transportation of passengers, the share of CO2 emission of transport is rapidly increasing in both countries.

Regarding aviation, smaller state or private owned airports are available in the CBC area, of which following airports can be mentioned:

- Pécs-Pogány Airport;
- Hévíz-Balaton Airport;
- Kaposvár-Kaposújlak Airport;
- Osjecko Airport (international airport);
- Varazdin Airport;
- Čakovec Airport (flight school);

These airports have minor role in international aviation, although they have the potential for cooperation within the CBC area.

The two largest rivers in the CBC area is the Drava River, which is the borderline between the two countries, and the Danube. Water transport is relevant only on the eastern part of the programme area, which has access to the Danube and some part of the Drava river. The Danube is part of the TEN-T core network (corridor VII).

5.1.5 Social inclusion

The two countries have long history of the cooperation with different cultures, all the CBC area was once part of the Austro-Hungarian Monarchy. After the world wars and the war in former Yugoslavia, the ethnic and religious situation of the two countries have become more homogeneous, ethnic groups have been continuously assimilated to the leading ethnics. Both countries have specific strategies and programmes for integrating of the increasing number of roma population focusing on education and employment.

As Hungary and Croatia are part of EU they are obligated to follow social inclusion standards on all levels. Although new technologies and regulations are ensuring and developing the quality of life of people with disabilities, both countries still have significant obstacles in the built and online environment. With the financial support of the European Social Fund many of public places such as governmental buildings, public transportation have been reconstructed focusing on the needs of people with disabilities.

Hungary and Croatia are at the forefront of internal migration as they are the borderline of the European Union. Waves of numerous refugees and migrants means great border surveillance, administrative and humanitarian burden for the national authorities and non-governmental organisations. Counties of the CBC area at the borderline have to face the economic, social and environmental impact of international migration.

5.1.6 Cultural heritage and natural values

Both countries have long history with various influences from foreign culture, religion and economy. Marks of this history can be found in the CBC areas – e.g. from the UNESCO Representative List of the Intangible Cultural Heritage of Humanity –, although only one reached the level of the UNESCO Word Heritage: Early Christian Necropolis of Pécs (Sopianae) in Hungary.

According to the Register of Cultural Property of the Republic of Croatia, there are 1991 items of cultural property within the scope of the Programme, out of which 1513 items are immovable cultural property (individual buildings, cultural and historical units and archaeological sites), 410 movable cultural property and 68 items of intangible cultural heritage sites.

In the CBC area there are a number of sites of natural values including Natura 2000 areas, protected areas of nature (such as the Danube–Drava National Park in Hungary or Mura-Drava Regional Park in Croatia) and the Mura-Drava-Danube Transboundary Biosphere Reserve (Austria, Croatia, Hungary, Serbia and Slovenia). Besides these locations, numerous tourist

destinations can be found in both countries, which could help maintaining local economy and preserving rural culture.

As part of the European Union both Hungary and Croatia are obligated to cooperate in many levels – foreign policy, regulating common markets, harmonising laws. The main platforms of institutional cooperation are in research and development (e.g., universities, laboratories); environment protection initiatives and implementation of cross-border project.

Recommendation: build on the local tourism destinations, building a common sustainable/green brand and offering service packages in the two countries.

5.2 The environmental characteristics of the areas which are likely to be affected by the programme objectives

5.2.1 Environment

Soil

There is considerable diversity in the soils of the area, which is also very significant in terms of its natural value. In addition to arable farming, they are mainly used by forestry, vineyards and pastures. It is important to emphasize that the proportion of forest areas in the studied area is particularly high.

The increasing number of drought days in the area due to climate change, as well as the sudden heavy rainfall in mountainous and hilly areas, will increase soil degradation and soil destruction in the future. Improper agricultural practices (poor irrigation, excessive nutrient replenishment, ploughing in parallel with the slopes) significantly worsen the condition of the valuable arable land in the area (causing soil degradation and food safety problem). In terms of soil, the sites of the most significant soil pollution (at one point) in the area (Baranya County, Koprivničko-križevačka County) are still a threat to this day, and soil contamination from improper communal wastewater treatment is also a serious concern. Heavy metal pollution (Pb, Cd, Ni) of the soil is significant mainly in the former mining areas (Drava, Sava and, to a lesser extent, the Mecsek Mountains).

The area of the routes within PO3 consist of meadow soils regarding the Sárok-Kneževo route. The road's alignment entirely fits onto existing dirt or asphalt roads, so there will be *no soil disruption* on neighboring fields.

The soils in the area of the Zákány-Gotalovo route and the planned Kotoriba-Murakeresztúr route are characterized by Holocene riverine sandy and muddy deposits, found on the surface and near the surface throughout the intervention area.

Recommendation:

It is advisable to minimize additional soil cover during construction. Proper drainage from paved road surfaces is also paramount to mitigate the effects of erosion. Biodiversity can be enhanced by widening the road verge (5-5 meters) and planting hedgerows or rows of trees there. The preservation of forests and permanent grasslands helps to protect against erosion, and retain water in the case of excess precipitation and thus, contribute to climate-adaptation. It is also important to apply precision farming practices widely to avoid dispensing excess irrigation water and excessive amounts of soil fertilizer.

In connection with soil and environmental pollution in general during the planning and subsequent implementation of investments, particular attention should be paid to ensure that vibration and noise protection requirements are enforced, which are subject to the requirements of Gov. Decree No. 284/2007 X. 29), KvVM Decree No. 93/2007 (Xll.18.), and Joint Regulation (KvVM-EüM) 27/2008 (XII. 3) on certain requirements for environmental noise and vibration control in Hungary.

Water

The protection of surface and groundwater bodies is a priority throughout the region. Along the Lake Balaton, Kis-Balaton and Drava, as well as in several smaller areas, we also find areas with highly sensitive classification of water bodies (water source), so their more intensive utilisation in any form is not recommended as it is already unsustainable. In the case of Lake Balaton, the phenomenon of algal blooms is still a prominent problem, which causes a deterioration of water quality in connection with the eutrophication of the lake. Another challenge is the recent growth of built-in areas along its shore with the elimination of former reed stands that clean the water and function as habitats for diverse flora and fauna.

Due to the increase in extreme weather events as an effect of climate change, both water supply depletion and floods have to be reckoned with periodically. Flood protection measures on the Danube, Drava, Sava, and Mura rivers are particularly important, in line with maintaining their functions as valuable habitats (according to the EU Water Framework Directive and the Habitats Directive). Large cities along the rivers can be potential sources of pollution due to inadequate wastewater treatment. In the region, the river sections of the Danube and the Drava (further south of the Sava) can be navigated – so a larger increase in water transport means an increased load on the above-mentioned surface waters. However, the spring of 2022 faced an extremely low water level in the Drava, urging for the re-consideration of various water uses. In the case of the Drava it is important to mention that an improperly designed hydropower plant system can have a detrimental effect on the water dynamics of the groundwater system associated with a given body of water. A significant reserve of the drinking water base in Croatia is located in the Drava Valley (gravel-sand sediment layer), and their preservation in terms of quality and quantity is a

strategic task. From the point of view of the public water supply, the preservation of the condition and quantity of groundwater reserves and spring waters is an important task. The sediment transport of the rivers should also be considered at this point, as the bigger sediments (gravels) are stopped by the hydropower plants (Austria, Slovenia, and Croatia in the case of the Drava; Slovakia in the case of the Danube) and this leads to silting up in some river sections while deepening riverbed in other branches. Silting up may block navigation during low-water periods, while deepening riverbed leads to deepening groundwater levels in the surrounding croplands and natural areas, threatening drinking water supply as well; and losing huge amounts of groundwater (flowing through artificial drainage canals into the rivers) from the water catchment area that constantly dries out this way. There is also a significant geothermal water supply in the area, the protection of which is a priority. In the course of agricultural activities, the cultivation of arable crops causes a significant burden due to the use of fertilizers and pesticides – these are still a problem in the area despite the regulations of the European Union. The EU Biodiversity Strategy will lead to a significant decrease in the amount and toxicity of pesticides.

From a groundwater perspective, the planning area of the foreseen routes within PO3 are not situated in a sensitive area and there are no significant surface waters directly adjacent to the planned roads.

The areas of Murakeresztúr and Molnári are situated on a shallow porous water body within the Mura Valley from the perspective of subsurface water. The chemical quality of the water is good, but its overall quality (due to quantitative conditions) is weak. A water base is present in the water body, and its extraction is significant due to water withdrawal. Murakeresztúr is situated in a sensitive area in terms of subsurface water. The proposed road route for crossing the Mura river is classified as highly sensitive area in terms of subsurface water. The planned route intersects with hydrogeological protection zones. When planning the Mura bridge it must be taken into consideration that the road passes through a heavily silted Mura oxbow lake characterized by closed reed vegetation, where surface water appears only periodically.

Recommendation:

Care must be taken with water abstraction from sensitive water bodies; careless abstraction of both surface water and groundwater can carry hazards (local drought, extreme salinisation, depletion of groundwater resources). Furthermore, to a negligible extent, surface oil spills from potential accidents can also cause water pollution, it is advisable to operate as many electric vehicles as possible. Navigation standards should be re-considered in the face of water-level extremes (due to climate change) and sedimentation processes (due to hydropower plants on the upper river sections).

When planning the Mura bridge it must be taken into consideration that the road passes through a heavily silted Mura oxbow lake characterized by closed reed vegetation, where surface water appears only periodically.

Air

The background air pollution in the area is basically average. The largest emissions of air pollutants in the region come from transport, with a smaller share from industry (with a couple of significant point sources), agriculture and a much smaller proportion from households. Currently, the transport of big cities, tourist centers and the area of thermal power plants are major pollutant emissions. A significant proportion of rural households use solid materials for heating. In the case of firewood, it should be ensured that it originates from sustainable forest management (e.g., continuous cover forestry) and is used properly (dried out, not wet wood). The proportion of lignite and coal used in households should be minimised (along with EU-level recommendations); and the use of any other solid material for heating (household waste, construction debris such as painted wood) should be stopped.

The point of view of air pollution, activities related to infrastructure investments (e.g., expansion of the road network) pose a threat in the region. The immediate surroundings of construction sites are expected to be affected by particle pollution (PM_{10}, $PM_{2,5}$), depending on the location (distance from the construction site or e.g., meteorological conditions), air pollution may also increase in some of the surrounding areas (primarily particle concentration). Air pollution (SO_2, NO_2, NMVOC, PM_{10}) from traffic in the vicinity of the existing road network used by motor vehicles also causes air pollution, especially on roads to large cities (e.g., Zagreb, Eszék/Osijek, Pécs). With regard to the development of tourism in the area, it should be mentioned that due to the increase in the number of visitors, there may be an increase in air pollution due to the increase in car traffic, especially on public roads leading to popular tourist destinations. In the vicinity of the area affected by the developments planned within PO3, there are currently no roads. In the vicinity of the planned Mura bridge there are only low-traffic roads. There is *minimal air pollution impact* from the daily 5-10 cars that travel on these routes, and the emissions from these vehicles are negligible. Properties of significance in terms of noise are not present near the route alignments.

Renewable energy sources, which are important for air protection, are not sufficiently present in the area.

Recommendation:

Attention must be payed to the resources mentioned in Gov. Decree No 306/2010 (XII. 23) of Hungary on the protection of air and the possibilities for the use of the best available techniques developed under Directive 2010/75/EU of the Parliament and of the Council on industrial emissions.

Care must be taken to minimize the time involved in carrying out construction work, avoiding delays that go beyond what is necessary. Installation of protective plant strips necessary for the protection of air purity next to the routes used by motor vehicles during the operational phase. It is also necessary to ensure faster access to popular tourist destinations and the relief of certain frequented sections of road. The "Fűts okosan!" ('Heat smartly') campaign should be continued in order to decrease the emissions from household heating. Campaigns for insulating the buildings also serve cleaner air.

Biodiversity, flora, fauna

The studied area has diverse, protected natural values and high biodiversity. The forests of the hills as well as on some alluvial areas along the big rivers are dense due to the favorable climate and ecological conditions, and their species composition is varied, but due to anthropogenic influences, part of the natural vegetation has been transformed into anthropogenic vegetation (pastures, groves, fields, orchards); however, in case of proper management, some of these semi-natural areas may sustain important habitats for birds, butterflies, reptiles, plants etc. The area is home to significant wildlife and bird populations. In general, infrastructural expansions, especially linear infrastructural developments (to improve the accessibility of tourist destinations), have a negative impact on wildlife due to the loss and fragmentation of habitats in the affected areas: vegetation reduces during construction and weed infestation (sometimes with invasive alien species), or scrub encroachment override the desirable natural processes. Power supply facilities pose a particular threat to birds (transmission lines) and underground pipelines (natural gas pipelines) due to the frequent growth of invasive plant species in the conservation zone.

In the case of tourism developments, the negative impact on the living world must be taken into account in connection with the utilisation of the natural environment. Investments related to developments involve land occupation (e.g., construction of road sections leading to tourist destinations, construction of car parks, etc.) which may also increase fragmentation. The increasing number of visitors can cause damage to wildlife (trampling of vegetation, release of waste into nature, disturbance of sensitive animal species, e.g., nesting birds). In addition to habitat occupancy and disturbance, potential pollution must also be taken into account: typically, pollutants from transport networks (oil, heavy metals) that enter some nearby habitats through accumulation (wind, water). The discharge of waste water from thermal baths into watercourses in the affected Carpathian Basin is problematic: they endanger local ecosystems in terms of both heat pollution and salt pollution. Another important problem in the area is the algal bloom of Lake Balaton, for which, in addition to the increase in phosphorus concentration, the proliferation of partly invasive species may also be responsible. However, the phenomenon of algal blooms also adversely affects the local ecosystem of the lake. As a result of climate change, the chances of algal blooms and eutrophication increase in the Danube water systems and floodplains as the length of the dry periods increases.

In the valley of Drava lakes Varazdinsko and Dubrava also face seriuos ecosystem challenges in terms eutrophication. The Drava is one of the last really living big rivers in Europe, but the 22 hydropower plants in Austria, Slovenia and Croatia left only a short free-flowing section of it, located mostly in the joint Croatian–Hungarian section. This is why the Mura-Drava-Danube area (the only one with five participating countries in the world) was declared a Transboundary UNESCO Biosphere Reserve. Both Croatia and Hungary have high a responsibility in the various uses of this river, including river regulation works or possible navigation, in order to maintain the diverse habitats, flora and fauna along the river. In the case of the Danube, see also our notes on navigation in the Water subsection.

Recommendation:

In the development of the infrastructure network, the habitat types characteristic of the areas must be examined in connection with the decision-making their naturalness, the occurrence of rare and highly protected plant and animal species, the effects of construction, operation and maintenance must always be sought with the least damage. Likely short and long-term effects of climate change (e.g., extreme low waters in the rivers) should also be considered. Regular mowing and grazing can be a solution to the proliferation of invasive species. It is important to prevent water scarcity and reduce excessive water abstraction during these periods, which can further increase the effects of algal blooms and eutrophication.

Natura 2000

There are a significant number of Natura 2000 sites in the study region. Of these, several in the area of Croatia (the studied region is mainly the Danube-Drava area), as well as in the area of Lake Balaton and the associated catchment area in Hungary, the extent of the Brid Directive sites is significant, and their ornithological value is outstanding – Croatia has the highest proportion of SPA areas in the EU compared to the terrytory of the country. Valuable nature reserves (SAC areas) are located in the Danube-Drava area (both in Croatia and Hungary), and the Mura-Drava region (Croatia), which is home to valuable biotopes (botanical and zoological rarities). It is clear that a significant proportion of Natura 2000 sites are associated with aquatic habitats and wetlands – so the expected increase in shipping traffic in the future will have a negative impact on Natura 2000 species and habitats (most lakes and rivers are covered by the Natura 2000 network), while also having an effect on the coherence and functional connectivity of the ecological network.

The planned routes of PO3 must be observed regarding their potential Natura 2000 impact:

Regarding the Sarok-Kneževo-Popovac route: within a 20 m wide strip, the direct impact of the planned road, such as habitat destruction, disturbance, and pollution, will occur. Fragmentation and isolation affect different groups of organisms to varying degrees. The indirect impact area includes the spread of effects due to changes in the environmental conditions within the direct

impact area. The width of the indirect impact area depends on the species, its home range and habitat, ranging from 20-25 to 100 m on either side of the road centerline. The planned route does not affect Natura 2000 areas, so the assessment is not relevant in this regard.

Zákány-Gotalovo route: In Hungary, none of the three route variations intersect with Natura 2000 areas. The route on the Croatian side affects arable lands, non-characteristic wet grasslands, marsh habitats and alder forests. Natural or semi-natural habitats are prevalent along the route and in its vicinity. The following habitats and species are affected:

- 6510 - Lowland hay meadows: 140 m in length
- 91E0 - Alluvial forests: 60 m in length
- Key species potentially affected:
- Scarlet malachite beetle (Cucujus cinnaberinus)

No impact on protected plants is expected.

With regards the Mura bridge, current programme encompasses the planning of the route.

Recommendation:

Before developing the infrastructure of the rivers, ecological surveys and Natura 2000 impact assessments will be required.

Climate

In terms of climate change, the region is characterized by a further increase in the frequency of heat waves and heavy rains by the end of the century. The coming decades will become warmer, drier and more unequal in rainfall in the Carpathian Basin and the Drava-Sava region. Greenhouse gas (GHG) emissions from the agricultural and industrial sectors, as well as from transport, transportation and households, may exacerbate the negative changes. The emitted GHG in the area are predominantly CO_2, with only a minor proportion of CH_4 and NO_2. It is clear that the most significant GHG emissions (predominantly CO2 in this case) in all counties are from the energy sector and the cement industry (i.e. in Beremend, Baranya county), in addition it comes from a large proportion of road transport and transportation. However, due to the short paved section and expected volume of the anticipatory traffic resulting in the planned roads within PO3, both factors' impact is negligible. Also, increasing greenhouse gas emissions in the area can be caused by improper agriculture practices (organic carbon reduction). In connection with carbon dioxide emissions, the wetlands of Kis-Balaton in the territory of Zala County in Hungary should be highlighted, which may increase their emissions due to drought caused by climate change (loss of organic carbon content and increasing CO_2 emissions). The potential of the region's renewable energy source is very favourable: solar energy, wind energy, hydropower, biomass – but their sustainability depends significantly on the way they are utilized. By way of example, the

use of biomass can only be maintained for the soil if the biomass is produced (for the production of electricity or heat) in a way that does not exploit the soil and harm biological values. It is also important that investments in the use of solar energy do not take the form of greenfields and any kind of biologically productive area.

In terms of Croatia it is necessary to highlight the identified climate change mitigation and adaptation measures stated in the Low-Carbon Development Strategy (until 2030 with a view to 2050) and the Climate Change Adaptation Strategy (for the period until 2040 with a view to 2070), which should be considered during the formulation of calls under the HUHR Programme. Also, when preparing for climate change it is desired to strengthen resilience in the Programme area, while also aiming for climate neautrality since synergies between the two pillars of climate change mitigation have to be exploited during calls.

Recommendation:

It is expedient to develop road transport infrastructure in these areas in connection with the development of tourism (improving the quality of busy roads) and to develop and promote electric public transport (rail, electric bus) among visitors and to increase the number of cycle paths. We also recommend supporting good agricultural practices in the area (continuous coverage of arable land, thereby reducing the loss of carbon stored in the soil; shift towards organic production in order to conserve biotic and abiotic bases). Decreasing heating energy demand due to insulation and technological development (shift in used energy sources or means of heating) in households as well as institutions and industry will also lead closer to the climate aims.

5.2.2 Low-carbon & green perspective

Croatia and Hungary as part of the European Union are committed to the climate neutrality and sustainable development goals. It means every sector of the economy has to reach net-zero greenhouse gas emissions or compensate the emitted quantities with forestation or creating other artificial carbon sinks. In Hungary the industry dominant economy and the extensive agricultural production, while in Croatia the mass tourism are the key areas where low-carbon innovations and structural changes have to be implemented.

The European Green Deal was published in 2019, which outlined the main steps forward climate neutrality. Besides sectoral policies, it creates financial resources for the green transition. The goals and funds of the 2021-2027 operational programmes is highly connected with the climate goals of the Community. Financial support for promoting greenhouse gas mitigation, climate adaptation and attitude changing is very important in the CBC area in order to overcome the climate related issues. Climate change is proved to worsen the existing economic and social issues of the European countries (e.g., with internal and external migration, shortage of natural resources), therefore without investing green economy the counties will face an increasing

disadvantage in competitiveness. Messages towards the citizens should be highly different based on their financial possibilities, as several households still burn the waste (especially the plastic) in their furnace or stove and suffer from energy poverty; while others (especially in bigger towns) are open to ecological consumption patterns and messages about organic products etc.

5.3 Relevant environmental conflicts and problems

Based on the situation analysis, this Chapter describes the relevant environmental conflicts and problems of the HUSK CBC area, specifically those which relate to any areas of particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC.

Environmental conflicts and problems that are particularly threatening the protected areas contribute to the loss of certain species and habitats and result in ecosystem degradation and weakening ecosystem resilience. The main environmental conflicts and problems are:

- Habitat change – including loss, fragmentation and degradation – of natural and semi-natural habitats due to land-use change is a main pressure. The fragmentation of the rural landscape due to urban sprawl and linear infrastructure developments, the homogenisation and loss of habitats by the development of agriculture and land abandonment, and intensively managed forests are the main causes of natural habitat degradation;
- Over-exploitation of natural resources, in particular surface and ground water bodies or soils;
- The accelerated spread of invasive alien species is not only an important driver of biodiversity loss, but also causes significant economic damage.
- Some pollution pressures have decreased, such as the nutrient enrichment of European waters. However, the level of nitrogen still substantially exceeds ecosystem eutrophication limits in most of Europe and the eutrophication risk is predicted to remain unchanged in the coming decade. Air pollution (mainly from road traffic) has a significant impact not only on human health, but also on the health of ecosystems. The most harmful air pollutants in terms of damage to ecosystems are ozone, ammonia and nitrogen oxides.
- The increasing impacts of climate change (see above) are already affecting the distribution and interactions of species and habitats projected to become an increasingly significant threat in the coming decades. Studies investigated during the past two decades show a northwards and upwards shift of the most widespread forest ecosystems in the area, and highlight that the renewal of beech and hornbeam stands goes on with other species, meaning that the seedlings of the native tree species cannot keep up with climate change. Climate change is exacerbating many other environmental threats.

5.4 Environmental protection objectives relevant to the Programme

At international, Community or Member State level, there are a number of strategies – and related objectives – that are relevant to the environment and the region and that have been taken into account during the preparation of the program. In this Chapter, these – mainly community level – strategies are briefly described.

The European Green Deal, published in 2019, endorsed the objective of achieving a climate-neutral EU, an economy with net-zero greenhouse gas emissions, by 2050. The implementation of the European Green Deal requires the renewal and updating of the most important policies and measures. All EU actions and policies must contribute to the objectives of the European Green Deal.

In the context of the European Green Deal, a number of strategies have been developed and renewed. The European Green Deal, in 8 subchapters – and in the related strategies – discusses the challenges and outlined solutions in each area, which are:

- Increasing the EU's climate ambition for 2030 and 2050 (2.1.1.) – *European Climate Law and EU Strategy on Adaptation to Climate Change*
- Supplying clean, affordable and secure energy (2.1.2.) – *EU Strategy for Energy System Integration*
- Mobilising industry for a clean and circular economy (2.1.3.) – *Circular Economy Action Plan*
- Building and renovating in an energy and resource efficient way (2.1.4.) – *Renovation Wave*
- Accelerating the shift to sustainable and smart mobility (2.1.5.) – *Smart and Sustainable Mobility Strategy*
- From 'Farm to Fork': designing a fair, healthy and environmentally friendly food system (2.1.6.) – *Farm to Fork Strategy*
- Preserving and restoring ecosystems and biodiversity (2.1.7.) – *EU Biodiversity Strategy for 2030*
- A zero-pollution ambition for a toxic-free environment (2.1.8.) – *Zero Pollution Action Plan*

In this Chapter, in connection with the purpose of the document, we describe the "Forging a climate-resilient Europe – the new EU Strategy on Adaptation to Climate Change" and the "EU Biodiversity Strategy for 2030 – Bringing nature back into our lives" in more detail.

Tackling climate change is an urgent challenge. The atmosphere is warming, and this is affecting our everyday life already now. Climate change is having an increasingly severe impact on our planet's ecosystems and biodiversity, in addition to our health and food systems.

The IPCC (Intergovernmental Panel on Climate Change) estimates that in order to address the challenges posed by climate change and limit temperature rises to 1.5 °C, global net zero CO_2

emissions by 2050 and the neutrality of all other greenhouse gases by the end of the century must be achieved.

Biodiversity is one of the crucial topics of modern European environmental strategies. This complex topic is influenced by many green issues, as it is also reflected in the EU Biodiversity Strategy for 2030. In the Strategy, several actions have been formulated to reverse biodiversity loss.

Most of the activities in the EU Biodiversity Strategy are also crucial for the whole HUHR CBC area. Not only the management of the various environmental issues, but also the maintenance and preservation of the main ecological corridors and elements are a common task of the whole cross-border area. Most environmental issues are closely interlinked and require integrated solutions. Climate change is accelerating the destruction of nature through droughts, floods and fires, while the loss and unsustainable use of nature is a key driver of climate change.

Two main aims of the strategy, namely building a coherent Trans-Europe Nature Network and legally protecting a minimum of 30% of the EU's land areas will require the inclusion of the existing protected areas (mentioned earlier) and the creation of new ecological corridors in the whole HUHR CBC area to interconnect them. Another aim is that 10% of EU land should be under strictly Protected Areas and as part of this strict Protected Areas network, it is highlighted the necessity of protecting the remaining primary and old-growth forests along the main rivers (Danube, Drava, Sava) and hilly or mountainous areas.

The aim of restoring freshwater ecosystems means that 25 000 km of free-flowing rivers must be restored in the EU, and the above-mentioned main rivers, as well as smaller watercourses, are of outstanding potential to achieve these aims within Croatia and Hungary.

Considering the aim of greening urban and peri-urban areas, some cities and towns have already elaborated their Urban Greening Planning or started a community planning of blue and green infrastructure. Riverine, aquatic, wetland, and terrestrial habitats of the HUHR CBC area can create the main ridge of these networks.

Most of the agricultural areas in the HUHR CBC area create the good potential to realize the aim of the reduction of the use of fertiliser by at least 20% by 2030 as well as the aim of the Zero Pollution Action plan for Air, Water and Soil because their environmental conditions are favourable for organic production.

Implementation of the EU Invasive Alien Species (IAS) Regulation will also affect these territories favourably because, among the natural and semi-natural habitats, the alluvial forests and other riverine ecosystems suffer from the greatest pressures of IAS.

6 Potential environmental effects of programme implementation

In the main Chapter of the environmental assessment, the potential environmental impacts on environmental elements – such as soil; air; surface water and groundwaters; biodiversity, flora, and fauna; Natura 2000 territories and other nature protected areas; climate; built environment, settlement surroundings, and cultural heritage; human health and lifestyle; environment consciousness; emerging environmental conflicts and potential problems, the escalation of existing problems; interrelationship and cumulative effect of threats to the above systems – are assessed. All planned interventions of the Hungary-Croatia Programme are considered, and the assessment of potential – negative, neutral, contrary, positive – environmental impacts are highlighted.

6.1 Potential effects of the programme on soil

Priority 1. Competitive border region PO 1 – a smarter Europe by promoting innovative and smart economic transformation
Projects and activities planned under PO 1 (iii) that involve infrastructure development, construction or installation of new hardwares might have negative effects on soil if not managed properly. Usually, infrastructure developments consist of the construction of buildings, ancillary structures like roads, public utility installations using grading and filling which all contribute to soil sealing, loss of topsoil (therefore organic matter), loss of biological activity, possible pollution with chemicals and heavy metals through runoff and waste generation, occasionally deforestation, changes in the composition of species and reduction in the permeability of water and air in the soil that helps to combat pests and diseases. Thus, leading to widespread erosion on site and indirectly off site as well negatively affecting surrounding flora and fauna. On site erosion may result in excess of nutrients and sediments that will eventually end up in above and underground waterbodies traveling off site and posing threat to other organisms as well. Hardware installation, depending on density, weight and place of installation, might additionally lead to soil compaction. It is important to note that soil always will be exposed during these infrastructural, construction activities, this can not be avoided, however the impact can be minimized through establishing soil cover as soon as possible. Clean-up and disposal of all construction-related waste and chemicals should be done in accordance with national environmental regulations. These mitigation measures needs to be highlighted in the relevant actions of PO 1 (iii). Since the cross-border region is very important for its agricultural production, the protection of these soils or the minimisation of erosion and pollution are paramount. Therefore it is suggested that infrastructural activities, constructions should be carefully planned on fertile soils or near agricultural production fields.
Priority 2. Greener and low-carbon border region PO 2 – a greener, low-carbon Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate adaptation and risk prevention and management
PO 2 (i) does not contain actions or planned projects that might have negative effect on soils. However, indirectly, for the renovation of low-emmission buildings, installation of renewable energy or infrastructural equipments, clean transport solutions that might include construction activities, the same

effects needs to be considered as described in relation to PO 1 (iii). Moreover, renewable energy installations depending on size and the purpose of utility might be land intensive, involving landscape alterations, land clearing and leveling which affects soil biodiversity and ultimately lead to soil compaction, increased runoff and erosion. Solar power facilities affect soil hydrologic and carbon dynamics by altering its microclimate. However, small solar installations built on residential or commercial buildings have minimal or no effect of land use. Also, the photovoltaic panels may contain hazardous materials which in case of damage or improper disposal, have spill risk, so can result in soil contamination. Direct use and residential heat pump installations for geothermal energy generation can result in small temperature changes in soil, and in case the technology applies surface discharge, then can risk soil pollution. Residential biomass heating systems (also power plants) might have greater negative effects on soil than the previous two options, since in order to fuel these systems crops, wood or different types of waste is necessary. Deforestation for the purpose of obtaining wood, or the intensive production of energy crops result in soil erosion and degradation.

PO 2 (iv) might have very beneficial effects on soils, especially joint activities that aim at the maintenance of biodiversty, ecosystem services, restoration of wetlands, green infrastructure, habitats, application of nature-based solutions and all educational programs that aim to spread the importance of climate change adaptation and sustainable lands use. Among others, the restoration and maintenance of wetlands in and around the Danuve-Drava-Mura Transboundary Biosphere Reserve, Őrségi National Park in Zala county helps to increase the organic matter content, biological activity of soils. Wetlands are important for their enhanced carbon storage and sequestration capacity (carbon sinks), which increases the resilience and adaptive capacities of the local areas to the effects of climate change.

Since the border region is in high propotion characterized by agricultural land use and production activities (arable cropping, horticulture, forestry) important for economic purposes, it is suggested that this ascpect is reflected in the description. It is proposed to include joint activities that focus on the widespread usage of and transition to sustainable land use practices that ranges from agroecological techniques, regenerative, organic (reduced till, leguminous cover crops, no-till for certain soil types etc.) to agroforestry practices which all put great emphasis on buiding back or maintaining soil health. For this, conditions for soil protection/building practices needs to be considered in the affected and surrounding agricultural areas together with the changes in quality of affected soils. Also, it would be important to have joint activities that aim at the education, training of local farmers, landowners, agri-food SMEs to learn these practices or exchange already existing good practices in order to have sustainable agricultural land use that respects and builds on biodiversity and ecosystem services. In addition to this, joint activities that raise awareness in the wider civil society, local citizens and other stakeholders on why these practices are important and how they contribute to the local adaptation to climate change, to the improvement of well-being and to the enhanced added value of the local agri-food products resulting from these practices and healthy soils. Right now, agricultural stakeholders (mainly farmers) are completely absent from PO 2 (iv), they are not even included in the main target groups. It is suggested to involve them, and take into account agricultural land use in the planned activities.

Priority 3. Inclusive border region

PO 4 – a more social and inclusive Europe implementing the European Pillar of Social Rights

PO 4 (ii) does not contain actions or planned projects that will have negative effect on soils. However, during the infrastructure development and construction activities planned, the same negative effects on soil and suggestions needs to be taken into account as detailed in PO 1 (iii).

PO 4 (vi) has the potential to have positive effects on soils due to the sustainable nature of the planned touristic projects and activities. However, attention needs to be paid to possible negative impacts as well since still the touristic activities planned such as development of attractions, services, mobility,

infrastructure will enhance the number of people and vehicles visiting a given cultural or natural sites. This greatly contributes to topsoil loss, organic matter loss, loss of biological activity, loss of vegetation (through trampling) and permeability of soils which lead to decreased resilience and buffer capacity. Construction activities that are associated with (vi) needs to take into account the effects and suggestions mentioned in PO 1 (iii).

Also, heightened turistic activity foreseen in the cross-border region will ultimately lead to littering and unwanted waste generation which may present threat of soil pollution, therefore above and groundwater pollution might occur. Thus, these will have eventually a deteriorating effect on the natural value of the sites which is often the added value or purpose of the touristic visit.

To minize these impacts, it is suggested to include joint activities focusing on education and training of local touristic companies, local residents and other relevant stakeholders about the prevention of waste generation and/or appropriate disposal at natural and cultural touristic sites following national regulations or municipal guidances. It is suggested to develop and implement harmonized practices or guidelines among touristic companies, hotels cross-country that forbid the use of single-use plastics, cutlery, single-portion foods, excessive packaging or hazardous, harmful cleaning products, rather collect the waste in canvas bags or carts etc. Harmonized guidelines should detail the collection and treatment of wastewater coming from touristic service providers or related companies. If sustainable wastewater treatment facilities and equipments are not available for stakeholders, it is proposed to include actions that support the development and procurement of the necessary equipments. Moreover, in parallel with the above-mentioned, not only touristic companies, but visitors need to be educated before their arrival and during their stay with the help of digital applications, online promotional materials or personal exchanges on the rules and proper conduct of waste disposal, but rather on how they can prepare before their visit to prevent the generation of waste.

Priority 4. Cooperating border region

ISO 1 – a better cooperation governance

Projects under ISO 1 (b) are not relevant from the perspective of soils.

ISO 1 (c) contains projects and actions that promote the organisation of various cultural, sport festivals and events which also has the same threat on soils as detailed in case of PO 4 (vi) as these events contribute to increased touristic activities, movement of large number of visitors and vehicles, cause littering or alterations at natural sites. It is suggested to only organize such events at natural sites if the number of people and vehicles can be limited and the already mentioned precautions are taken for waste prevention.

6.2 Potential effects of the programme on air

Priority 1. Competitive border region

PO 1 – a smarter Europe by promoting innovative and smart economic transformation

PO 1 (iii) might have negative effects on air due to the proposed activities involving infrastructure developments and constructions as these actvities result in air pollution. The risk of air pollution is even greater if these developments happen near settlements, residential areas. Air pollution contributes to several respiratory problems such as chocking of the lungs, asthmatic or allergic reactions, viral and bacterial diseases, especially if a nearby population is exposed to it for a long period of time.

It is suggested to include joint activities for the creation of harmonised guidelines or handbooks for SMEs about best practices in development and contruction activity between the two countries respecting national regulations.

Also, besides the enlarging, restructuring, refurbishment or modernisation of building for SME development, it is suggested to include the repurposing of existing buildings in maximal possible extent. Repurposing does not require large-scale, physical construction and land clearing therefore prevents or minimizes air pollution.

Priority 2. Greener and low-carbon border region

PO 2 – a greener, low-carbon Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate adaptation and risk prevention and management

PO 2 (i) will have some positive effects on air since indirectly the renovation of buildings to be more energy efficient, better use of low emission technologies, increase of renewable energy share and directly fostering e-mobility solutions will lead to the decrease of fossil fuels consumption. Reduction of fossil fuels consumptions means lower air pollutants emissions and greenhouse gas emissions, leading to improved air quality (and climate), thus in the better well-being of inhabitants – which is mainly relevant in Pécs, Hungary where air quality is often poor.

However, both in case of biomass power plant and residential/home installations, there is a great risk of the release of several harmful pollutants (nitrogen oxide, sulphur oxide, or particulate matter) through biomass combustion leading to air pollution. This can negatively affect the health of residents and other organism as well by increasing the risk of cardiovascular and respiratory problems.

It is proposed to put greater emphasis in the low carbon projects on biophylic design that is the incorporation of natural materials like vegetation into the interior or exterior design of buildings through which the indoor air quality can be greatly improved.

PO 2 (iv) will have positive effects on air as the planned actions in relation to the protection of biodiversity, habitat reconstruction, revitalisation of green areas, parks contribute to better air quality through cleansing the air from pollutants, plus an increased CO_2 absorbing capacity. Green infrastructure projects and nature-based solutions in cross-border area cities (but also in small settlements, industrial parks) also help to mitigate air pollution, have a shading effect, therefore contribute to better local climate adaptation.

Priority 3. Connected border region

PO 3 – a more connected Europe by enhancing mobility

Transport is of importance for balanced territitorial development and quality of life. Upon Croatia's access to Shengen on the 1st Jan 2023 new opportunities in cross border transport have been open. Therefore, PO 3 (ii) emphasizes development of road connections which should support links between isolated peripheral areas, in order to connect neighbouring communities, to improve and to speed up access to TEN-T and other major road/rail infrastructure, generating time savings in cross-border mobility. Construction of local roads on the sections Sarok-Kneževo-Popovac and Zákány-Gotalovo and preparation of technical documentation for constructing of the Murakersztúr-Kotoriba bridge are highligted in Hungary-Croatia Programme.

Road traffic is source of air pollution dominant through emission of different substances produced by fuel combustion in road vehicles engines. The EEA Report 04/2023 states that road transport sector is the primary sector group for NO_X emissions. Although NO_X emission from road transport sector has been trending downward over a long period of time, it accounts for about 36% of the total NO_x emissions

in the EU in 2021. EEA Report 04/2023 also states that road transport sector in 2021 contributed 17% (CO) and 8% (NMVOCs) to the total emissions of these pollutants in the EU.

Although the negative impact on air quality of new roads may be noticeable in narrow strip along roads, in broader area i.e. in cumulative aspect positive effect of PO 3 (ii) is expected. As it is stated in the Hungary-Croatia Programme, new local road connections in cross-border region aim to improve cross-border connection, to shorten travel time and to generate time savings in cross-border mobility. The result is a reduction in fossil fuel consumption in relation "to-do-nothing" and thus reduction of air pollutants emission. Reduction of air pollutant emissions from road traffic means a reduction in air pollution in the cross-border region. An additional positive effect on air quality is expected through EU "Fit for 55" package by which, among other, an increase in share of vehicles with zero and low emissions in road traffic is expected meaning also further reduction in air pollutant emission from road traffic.

Lower emisison of air pollutants from road traffic contributes to the overall reduction of air pollutant emissions in the cross-border region.

Priority 4. Inclusive border region

PO 4 – a more social and inclusive Europe implementing the European Pillar of Social Rights

PO 4 (vi) might have some negative effects on air due to actions mentioning infrastructure developments and construction which leads to air pollution. The harmful effects on air and mitigating solutions was already discussed in PO 1 (iii).

Transport-related air pollution can be expected during enhanced touristic activitiy due to increased presence of vehicles at cultural and natural sites. Air pollutants are risks for site visitors and local residents, but the chance of ecotoxicity for flora and fauna is also an issue.

Therefore, it is suggested that the e-mobility, low emmission transport solutions (not only cycling) planned in PO 2 (i) are taken into account in PO 4 (vi) as well. Creating local opportunities for e-mobility technologies used in sustainable tourism would greatly contribute to decreasing local or regional air pollution.

It is also proposed to include joint actions to develop harmonized rules and standards between touristic stakeholders in cross-border area to prevent, monitor and regulate the number of fossil fuel run vehicles at cultural and natural sites.

PO 4 (ii) does not contain actions or planned projects that will have negative effect on air. Only during the infrastructure development and construction activities planned, the same negative effects on air and suggestions needs to be taken into account as detailed in PO 1 (iii).

Priority 5. Cooperating border region

ISO 1 – a better cooperation governance

Projects under ISO 1 (b) are not relevant from the perspective of air.

ISO 1 (c) contains projects and actions that promote the organisation of various cultural, sport festivals and events which also has the same threat on air as detailed in case of PO 4 (vi) as these events contribute to increased touristic activities, movement of large number vehicles at cultural and natural sites.

6.3 Potential effects of the programme on surface waters and groundwaters

Priority 1. Competitive border region PO 1 – a smarter Europe by promoting innovative and smart economic transformation
Actiones listed in PO 1 (iii) including infrastructural development, contruction of buildings and roads might have direct negative effects on waterbodies if not managed properly. Any construction might result in off-site impact through the excess of different pollutants that eventually end up in above and ground waters resulting in water quality decrease. Therefore, developments taking place near the rivers (Danube, Mura, Dráva etc.), lakes or other waterbodies needs to be paid special attention to. Excess of sediments make the water turbid preventing sunlight to penetrate the water, therefore photosynthetic activity decreases in aquatic vegetation. Decrease in oxigen level results in loss and decreased naturalness of aquatic habitat. As sediment can build up in stream channels decreasing flow capacity, it increases the threat of receiving great amount of water in a short period of time which leads to frequent flooding (even in places where flooding was never a risk). That is why it is important to develop an erosion and sediment control plan mentioned in 6.1 accompanied by the best practices handbook for development activities highlighted in 6.2(including the prevention of water pollution, the control of runoff or appropriate storage and disposal of construcion materials)..
Priority 2. Greener and low-carbon border region PO 2 – a greener, low-carbon Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate adaptation and risk prevention and management
PO 2 (i) might have some negative effects on waterbodies. Suggestions regarding waste prevention and disposal mentioned in PO 1 (iii) and 6.1. should be paid attention to during renovation and retrofitting of buildings or infrastructural activities – as the waste generated during these developments might end up in waterways. Regarding the installation of renewable energy sources, like geothermal power, it has the potential to cause surface water instability, since the removal of water (and steam) from underground reservoirs might cause slow sinking or overusage overtime. Therefore, it is suggested to apply techniques in geothermal power generation that mainly involve re-injection of used water into the earth in order to decrease the risk of land subsidence. In case of solar energy use, depending on the type of technology applied, these installations can consume water for cooling purposes, therefore they can increase local water demand, contributing to restrains in water usage. Also, spill risks of toxic materials of the photovoltaic panels mentioned in 6.1. might lead to surface and groundwater pollution. Residential biomass installations have similar indirect negative effects as mentioned in case of soils since the cultivation of energy crops as fuels might require irrigations that lead to water shortages worsening drought periods and has a negative effect on aquatic ecosystems as well. Additionally, larger biomass facilities release used water back into the environment at a higher temperature disrupting local ecosystems. PO 2 (iv) will have positive effects on waterbodies especially the ones planned for flood disaster mitigation, improvement of waterbodies, their quality and blue infrastructure, restoration of natural habitats and awareness raising actions. The two major risks from the perspective of waterbodies are floods, especially at rivers of the cross border area and drought. The occurance of floods will increase due to climatic and precipitation

extremities. Drought periods result in the decrease of water flow and volume which lead to increased salinity due to reduced dilution and the changes in the pH alters and threatens aquatic ecosystems. Decrease in water levels leads to watershortages that cause irrigation disruptions in the local agricultural production – which have been more and more common at the border region as well.

As mentioned in 6.1., it must be highlighted here as well that agricultural land use should be included especially with regards to the water retention measures. It is suggested to include joint activities to develop harmonized water retention and storage strategies and practices cross-border among farmers with the support of nature conservation and flood prevention experts. Also, training and education of stakeholders about already existing measures or harmonized ones should be included. Organic, regenerative, agroecological practices that improve soil structure therefore making it able to limit surface runoff should be widespreadly applied in the border region just as the reconstruction of natural ponds and small reservoirs, construction of weirs for storage in rivers canals and adequate irrigation-drainage system that regulate outflow.

It is proposed to have joint actions that aim at the transformation of river management following ecological approaches and reconstruction of deteriorated river sections and floodplains. In order to achieve its expected outcomes, (iv) should ensure that any hydro power plant constructions planned in the future on Mura and Drava will not be granted until further progress has been made to improve hydropower systems/technologies to be more environmentally friendly and to decrease the damage to aquatic ecosystems.

Moreover, in the event of a major accidents affecting waterways, European Union directives anf national laws and regulations in relation to disaster protection needs to be taken into account (CXXVIII. law of 2011; 219/2011. (X.20.) regulation; 96/82 / EC council directive; 2012/18 / EU directive).

Priority 3. Inclusive border region

PO 4 – a more social and inclusive Europe implementing the European Pillar of Social Rights

PO 4 (vi) might have negative effects in the border region rich of waterbodies. Touristic activity – even if it is called ecotourism – will eventually increase water consumption, resulting in overuse of this resource mainly for hotel accomodations, food production, sport, cultural activities or personal use. This leads to the deterioration in water quality, pollution with wastewater that contaminates above and groundwaters threatening aquatic ecosystems, surrounding flora and fauna and local inhabitants. Moreover, littering and waste disposals adds to this pollution and spoils the attractiveness of natural and cultural sites.

It is proposed to have joint actions to harmonize or develop regulations in relation to wastewater discharges and to adopt or support the development of physical or biological treatment of wastewater at touristic facilities across the two country.

PO 4 (ii) does not contain actions or planned projects that will have negative effect on waterbodies. Only during the infrastructure development and construction activities planned, the same negative effects on water and suggestions needs to be taken into account as detailed in PO 1 (iii).

Priority 4. Cooperating border region

ISO 1 – a better cooperation governance

Projects under ISO 1 (b) are not relevant from the perspective of waterbodies.

ISO 1 (c) contains projects and actions that promote the organisation of various cultural, sport festivals and events which also has the same threat on waters as detailed in case of PO 4 (vi) as these events contribute to increased touristic activities.

6.4 Potential effects of the programme on biodiversity, flora, and fauna

Priority 1. Competitive border region PO 1 – a smarter Europe by promoting innovative and smart economic transformation
Projects and actions listed in PO 1 (iii) that involve infrastructure development, construction of buildings or ancillary structures (roads) may have negative effects on biodiversity, flora and fauna. These activities almost always entail land clearing often deforestation, which directly leads to habitat loss, alterations and decline in biodiversity. They also make native habitats fragmented, and the extent and connectivity of remaining habitats reduced, therefore threatening the survival of species, increasing mortality, and reducing populations (mainly bigger vertebrates that have larger home range). Also, accompanying noise pollution increase stress, distrubs feeding, hunting, breeding behavior and often results in relocation. Moreover, waste and wastewaters from construction sites present threat for plant life, aquatic ecosystems and vertebrates altogether, so negatively influences the adaptive capacity and ability to react to climatic changes, natural disaster or extreme weather, and support the penetration of invasive alien species as well. Therefore, it is important that the planned developments only occur in accordance with relevant national environmental regulations (definitely for long-standing developments and in protected natural areas like the Mura-Drava-Danube Transboundary UNESCO Biosphere Reserve, Natura 2000 sites or forest reserves (mainly in Zala, Somogy, Bjelovar, Pozega-Slavonia counties) in the two countries. In case of other non-protected natural areas, it is suggested to develop harmonized biodiversity reperation strategies and practices for infrastructure development activities (for mainly greenfield projects) with the support of conservation experts cross-border including measures such as restoring and linking together existing habitats which could support wildlife, retaining existing tracts of habitat within development sites to save ecological strips or recreating similar features, improving the surrounding landscape with buffer areas to support wildlife or relocating habitats if necessary. Also, depending on the purpose of development, environmental impact assessment should be elaborated in case of greenfield and built area projects. In addition, proper analysis of remaining biodiversity value for built areas should be done accompanied with harmonized best practice guidelines for biodiversity protection.
Priority 2. Greener and low-carbon border region PO 2 – a greener, low-carbon Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate adaptation and risk prevention and management
PO 2 (i) will have negative effects on biodiversity if the construction of solar, biomass and geothermal power plants are foreseen in the actions. The construction of these power plants might require deforestation, land use change from permanent grasslands (previously used as pastures or hayfields), large land clearings that result in loss or fragmentation of natural habitats and possible disappearance of species (e.g. protected flora and fauna). In addition, let it be residental solar panels or solar parks, the interaction of wildlife with these installations will increase the causing of injury or death (insect, birds) – this might be especially problematic for protected species. In case of biomass facilities, even the operation poses risk to biodiversity through the converted agricultural land or the cutting of forests necessary to provide fuel. In the meantime, PO 2 (i) will indirectly have some positive effects on biodiversity if the decrease in GHG emmissions and pressure on natural resources will actually result from the funded projects and activities. Due to this contradiction, it is important to harmonize national biodiversity strategy targets with

renewable energy development plans in a cross-sectoral manner with the elaboration of environmental impact assessment.

Suggestions detailed in 6.2. and 6.6 in relation to the incorporation of biophylic design in the energy efficient renovation and retrofitting of buildings would also greatly contribute to have better biodiversity or more vegetation cover in the cities.

PO 2 (iv) will have direct positive effects on biodiversity, flora and fauna especially the joint activities that aim to improve the connectivity between habitats, to build back ecological corridors, restoration of wetlands, protection of native species and related joint awareness raising actions.

Although one of the most significant wetland areas of Europe, the Mura-Drava-Danube Transboundary Biosphere Reserve (TBR) can be found at the border of the two countries, there was very little mentioned in the planned projects and activities about that. There is a substantial support behind TBR now thanks to the inter-govermental agreement between the five bordering countries, which hopefully will drive the restoration of waterside areas, riverbranches and habitats.

Therefore it is suggested to include specific actions dedicated solely to the Mura-Drava-Danube TBR, not only because it has a unique biodiversity with rare habitats such as floodplain forests and islands, gravel and sand-banks or oxbows that provide shelter, resting and nesting place for large number of migratory and protected birds. But because it stretches along the border of both countries signifying the importance of crossborder cooperation and relations (which is an outstanding purpose of this program). Besides joint water retention strategies, dedicated joint actions should put emphasis also on the creation of protective grassland zones around wetlands.

In harmony to the suggestions of 6.1., joint actions to educate and train agricultural stakeholders about the environmentally friendly, organic or agroecological practices that can be used to preserve biodiversity in the region should be included such as the usage of shelter belts, preserving landscape features and maintaining traditional landscapes, landscape diversity, in accordance with natural characteristics, agroforestry practices, avoidance of synthetic fertilizers, desiccants, chemical pesticides (especially neonikotinoids).

The planned soft educational and awareness-raising actions should focus on the impacts of climate change on biodiversity in the two countries and also on the role of biodiversity in climate control and climate change adaptation (e.g. carbon sinks, carbon storage, water storage, type of ecosystem services it provides etc.).

PO 2 (iv) does not mention forests in any way, which is a shortcoming since forests are just as important from a biodiversity perspective (they also maintain species-rich communities) as regional waterbodies which seems to be the focus of PO 2 (iv). The cross border area is rich in forests and protected forests, therefore, it is proposed to have dedicated joint actions focusing on the exchange and/or adoption of good forest management practices that aim at achieving structurally diverse forests, maintenance of native trees or replacement of invasive tree species to native ones.

It is also suggested to have joint efforts to evaluate the status of regional ecosystem services, and to create a data sharing system not only among conservation bodies and public authorities, but intersectorally working with all the relevant stakeholders (agriculture, hunting and game management etc.)

Besides altering the sedimentation processes and the formation of gravel bars and islands, the existing hydropower plants make high pressures on the riverine habitats (and their species) as well, causing extremely low water in some stretches, and floods during short peak periods (when the turbines operate). This is why no further hydropower plants should be built in the area.

Priority 3. Inclusive border region PO 4 – a more social and inclusive Europe implementing the European Pillar of Social Rights
PO 4 (vi) might have negative effects on the biodiversity specially in relation to the impacts mentioned in PO 1 (iii) concerning infrastructural developments and contructions. Moreover, the enhanced touristic activity and development of service infrastructure foreseen here inevitably will clear and convert land in some way or form resulting in biodiversity loss, fragmented habitats and populations. This also leads to overexploitation since there will be a high demand for natural resources (food, water, materials). So it is strongly recommended to avoid any prestige or luxury driven touristic service developments such as artifical sport grounds (golf course) or landscape structures which not only overuse resources, but disrupt habitats and related biodiversity. Tourism also can result in the emergence of invasive species in a given habitat. These species act as weeds or pests by pressing out the native population when introduced to areas outside their local ecosystem. Since the presence of invasive species is already an issue to be dealt with in the target area (TBR, protected forest reserves, Natura 2000 areas, national park, nature parks, regional parks, special reserves, significant landscapes, park-forest, monuments of nature and monuments of park architecture), this should not be made worse through tourism. Another risk of tourism on biodiversity is waste generation and inapproriate disposal which leads to pollution with wastewater (sewage, solid waste, fertilizers, pesticides used in sport grounds, parks) resulting in the disruption in healthy ecosystem functions, water quality, toxicity and damage to vegetation and wildlife. Large number of visitors at natural sites can destroy vegetation via trampling and raising the risk of erosion. Moreover, the noise and disturbance accompanying touristic activity can alter breeding, feeding, nesting, hunting patterns of animals. Thus, it is recommended to add joint actions to develop harmonized codes of practices or guides on how biodiversity can be preserved through touristic services and how to adopt tourisitic area planning controls to protect key biodiversity sites in coorporation with touristic companies, public cultural and conservation institutes. The International Tourism Partnership guidance contains best practices on how to design and site touristic facilities that do not disrupt the environment – this should be widely used during the planned projects. Also, national biodiversity targets and considerations present in national biodiversity strategies should be harmonized and incorporated into national or regional touristic strategies and action plans. It is suggested to develop and adopt joint environmental management practices (following circularity principles) to prevent waste generation, to treat, to select or dispose waste in touristic facilities. It is also recommended to add joint action that aim at incentivising touristic companies to adopt sustainable purchasing schemes that ensure the procurement of environmentally friendly cleaning products, reusable, recyclable, composable materials from reliable sources. The adoption of tour group or visitor control measures are also suggested to minimize disturbance and degradation. It is also suggested to put greater emphasis not only on the development of infrastructure related to water tourism, but on the elboration of joint strategies and plans for environmentally conscious water-based touristic activities. As these activities (like trekking routes on water, observing aquatic birds, boat trips) have great potential to positively influence biodiversity conservation, visitors' awareness on local ecosystems and regional development. PO 4 (ii) does not contain actions or planned projects that will have negative effect on biodiversity. Only during the infrastructure development and construction activities planned, the same negative effects on biodiversity and suggestions needs to be taken into account as detailed in PO 1 (iii).

Priority 4. Cooperating border region ISO 1 – a better cooperation governance
Projects under ISO 1 (b) are not relevant from the perspective of biodiversity, flora and fauna. ISO 1 (c) contains projects and actions that promote the organisation of various cultural, sport festivals and events which also has the same threat on biodiversity as detailed in case of PO 4 (vi) as these events contribute to increased touristic activities.

6.5 Potential effects of the programme on Natura 2000 territories and other nature protected areas

Priority 1. Competitive border region PO 1 – a smarter Europe by promoting innovative and smart economic transformation
Infrastructural developments and contructions foreseen in PO 1 (iii) will have similar negative impacts on Natura 2000 territories as detailed in 6.4. However, the 'no deterioration' concept is more pronounced and needs to have priority when planning any development or construction activity near Natura 2000 sites (Croatian protected areas and Ekološka mreža Natura 2000: https://www.bioportal.hr/gis/; Hungarian protected areas: https://www.eea.europa.eu/soer/2010/countries/hu/nature-protection-and-biodiversity-state/bd3.jpg/image_view_fullscreen; Natura 2000 areas in Croatia and Hungary can be searched: https://natura2000.eea.europa.eu/). An appropriate, thorough impact assessment needs to be carried out as well before any, granted development work. If considerable changes in the protected habitat or even a slight chance of pollution is confirmed as a result of the developments, then these activities need to be considered as significant alterations, the habitat and species would be impacted directly, therefore permissions can not be granted.
Priority 2. Greener and low-carbon border region PO 2 – a greener, low-carbon Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate adaptation and risk prevention and management
PO 2 (i) will have similar negative effects as detailed in 6.4. But the same caution and the application of no deterioration principle needs to be taken into account as discussed in PO 1 (iii) when low emmission technologies, e-mobility, renewable energy utilisation and related installations are being considered near Natura 2000 sites. PO 2 (iv) will have positive impact on Natura 2000 sites since the projects and actions listed aim to protect and improve natural habitats, connectivity of habitats, endangered species and fight against invasive species, plus to increase resilience of protected areas against natural disasters or to the effects of climate change. Although, not mentioning Natura 2000 sites in PO 2 (iv) projects or actions is a shortcoming that needs to be addressed. The border region is especially rich in Natura 2000 protected areas, not only the Mura-Drava-Danube Transboundary Bioshpere Reserve, but Mecsek near Pécs, north and south Zselic, Forest of Szenta in Hungary or Biogora Kilnicko gorje, Ribnjak Našice, Papuk etc. in Croatia are just as important and they all impacted by and exposed to the negative effects of climate change. Therefore, it is suggested that the joint conservation actions planned in the Hungary-Croatia Programme should integrate and mention the development of harmonized dedicated conservation plans with clear targets for Natura 2000 areas in both countries' target region – in case they are absent. Based on the data of European

Biodiversity Information System, 45% of both species and habitats conservation status is bad or poor in Croatia and 48% of them are unknown. While protected forests are in good shape in the country, but the status of grassland is poor or bad. On the other hand, 65% of species and 85% of habitats conservation status can be considered poor or bad in Hungary. Mainly protected forests and grasslands can be found in the Hungarian target area and their status is rather unsatisfactory. This not only justifies the relevance of Natura 2000 conservation plan elaboration, but also shows the necessity to harmonize the plans and their objectives between the two countries. These should be complemented by joint monitoring and evaluation systems to map and assess territories of unknown status. E.g. it is recommended to have joint actions that aim at the status mapping of regional pollinators by developing a harmonized monitoring system with a sampling network cross-border.

It is recommended to add joint actions focusing on improving the understanding and cooperation between Natura 2000 site management actors and other sectors (forestry, agriculture, tourism, fisheries) and to embed Natura 2000 conservation targets into sectoral strategies and plans. In addition to this, legally binding, crossborder regulations should be explored and elaborated between the countries to achieve conservation plans (e.g. harmonized regulation of relevant special Natura 2000 land use rules for arable and grasslands, education of Natura 2000 landowners on best practices for forest, arable and grassland management).

It is also proposed to include joint actions aiming at raising investments, harmonising funds cross-border (e.g. co-financing LIFE program) or at making use of other EU funds (Horizone Europe projects, Biodiversa+ Partnership) to build capacity or conduct relevant research.

It is suggested to add cooperation actions that map and assess the socio-economic benefits of Natura 2000 sites together with wide range of stakeholders. The economic value and cost-saving nature of these territories should be estimated. This can be calculated by taking into account their carbon storage capacity, the synergies of biodiversity with climate change mitigation and adaptation, protection of ecosystems (forest, wetlands, grasslands), reduction in damage caused by extreme weather or natural disasters, maintenance of wide range of protected plants and animals, pollinating insects important for agriculture, food provision ad security, or water purification. Thus, it is suggested to add joint action to analyse the costs and benefits of Natura 2000 territories.

As written in Chapter 6.4 at Priority 2, the existing hydropower plants cause extremely low water in some river stretches in certain periods, while floods during short peak periods (when the turbines operate), create unbalanced circumstances for riverine species and habitats. Moreover, the hydropower plants have a negative effect on lateral connectivity as well (blocking fish migration or making it more difficult) and thus, harm the most important function of the Natura 2000 (i.e., creating and maintaining an ecological network). This is why no further hydropower plants should be permitted to be built in the area.

Priority 3. Inclusive border region

PO 4 – a more social and inclusive Europe implementing the European Pillar of Social Rights

PO 4 (vi) might have similar negative effects on Natura 2000 sites as detailed in 6.4. However, positive impacts can be achieved for tourism as well, since these territories enhance the attractiveness of the target region, so people naturally want to enjoy these sites.

Natura 2000 sites can be important for branding local and regional touristic attractions or products – thus, the protection and conservation of these territories become more significant as they contribute to local economic developments, alliviating poverty, attracting inward investments, enhancing local image and quality of life. Building on this, it is suggested to highlight joint actions, programs that support the education of local touristic companies, nature parks, other stakeholders on the general content and implications of Natura 2000 directives, and national conservation plans. It is also important to put in

place a joint management programme for ecotouristic activity at Natura 2000 sites between the two countries that integrates the joint Natura 2000 conservation plans guidance measures and complies with the national biodiversity strategies.

It is recommended to seperately have joint actions to educate and train visitors and local residents on the ideal desired state of Natura 2000 sites in order to ensure the protection and sustainable use of these territories.

PO 4 (ii) does not contain actions or planned projects that will have negative effect on Natura 2000 sites. Only during the infrastructure development and construction activities planned, the same negative effects and suggestions needs to be taken into account as detailed in PO 1 (iii).

Priority 4. Cooperating border region

ISO 1 – a better cooperation governance

Action 1: ISO 1 (b) projects are not relevent from the perspective of Natura 200 territories.

Action 2: ISO 1 (c) contains projects and actions that promote the organisation of various cultural, sport festivals and events which also has the same threat on Natura 2000 sites as detailed in case of PO 4 (vi) as these events contribute to increased touristic activities.

However, it must be highlighted that special event permits might be required respecting the 'no deterioration principle' in accordance with environmental regulations if cultural, sport events and festivals are planned near or at Natura 2000 sites – as these events might alter terrain, environment with the appearance of artificial, alien temporary structures. It is also suggested that planned events expecting large number of visitors through multiple days should not be allowed or granted permission at Natura 2000 sites since the noise and music might cause serious disturbance for wildlife.

6.6 Potential effects of the programme on climate

Priority 1. Competitive border region

PO 1 – a smarter Europe by promoting innovative and smart economic transformation

Actions listed in PO 1 (iii) that includes infrastructure development and construction activities may have negative impacts on climate. The processes at contructions such as the usage of fossil fuel run heavy machinery, inappropraite management of waste, and transportation leads to greenhouse gas emmissions. Compared to global warming patterns, these small-scale contructions might have negligable effects.

Still, the proposed best practices handbook for development activities detailed in 6.2. should be applied here as well.

It is also suggested to include sustainability/climate-positive expectations from SMEs in accordance with the targets of national climate change strategies in the selection criteria in order to ensure that the products and services innovated or improved during the planned projects and actions meet circular economy/organic/agroecological principles. Therefore, contributing to local adaptations in agriculture, industry or service sector to climate change and the products are produced in ways that do not contribute to GHG emmissions.

Priority 2. Greener and low-carbon border region PO 2 – a greener, low-carbon Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate adaptation and risk prevention and management
PO 2 (i) will have positive effects on the climate since the actions aimed at renovating and retrofitting of buildings with net-zero or energy efficient options, help the transition to renewable energy sources, e-mobility, and will contribute to cut GHG emmisions in the region, decrease carbon footprint or offsetting emmissions released during constructions. Although, biomass energy installations (plants or residential technologies) can be a source for carbon dioxide emmission, therefore contributing to climate change. Their emmission can be considered still lower than some fossil power plants, but it is greater compared to geothermal or solar energy installation. Their operation also require deforestation and harvesting of vegetation as fuel source, and green vegetation would normally absorb carbon dioxide, leading to biomass deficit. The PO 2 (i) should be in harmony with PO 2 (iv) in relation to green infrastructure development in urban areas. This action is just as important with regards to achieving net-zero buildings since the efficiency of these retrofitted buildings might be enhanced and the resilience of urban areas to combat climate change by improving local microclimates and ensure the long-term well-being of inhabitants. Not only the number of trees, parks, green surfaces should be increased, but the application of biophylic design (living walls, roof coverings, green facades) as described in 6.2. should be incorprated into the renovation of the building and sustanainable mobility solutions as they decrease energy consumption through vegetative climatic effects, reduce urban heat island effect, attenuate noise, provide better wind protection, and home for pollinators, cleanse the air from pollutants and they are renewable, and recyclable. Natural water retention measures and rainwater harvesting solutions should also be applied, and made popular among the households via campaigns and promoting best practices. However, it is important to take into account that the rebound effect might occur with low-emmission buildings, which means that the residents might have a relaxing, comforting feeling that they do not contribute to GHG emmissions, so they end up using more energy. Considering the mentioned greater negative impacts of biomass energy utilisation on climate (but on biodiversity, air and soil), – even the European Union is questioning whether biomass energy should be considered as renewable energy source due to its contribution to climate change and resulting biomass deficit in the long run – it is recommended that the programme prioritizes solar and geothermal energy solutions over biomass energy installations (especially types using wood and energy crops). In addition to this, if biomass solutions are considered then joint actions to develop harmonized and right selection of fuel sources, types of biomass, accompanying sustainable fuel source management and harvest practices should be developed. It is also suggested to add joint actions to develop cross-border plans on how to combine mainly solar and geothermal, but also biomass energy utilisations in order to avoid the dependence on single energy sources. PO 2 (iv) will have positive effects on the climate as the planned projects involving biodiversity preservation, improvement of green infrastructure, restoration of habitats contribute to the absortion of emmissions (CO_2) and act as carbon sinks. If they become healthy and well-functioning due to actions planned that will increase the resilience, adaptive capacity against extremities, disasters and will control the local climate.

Priority 3. Inclusive border region PO 4 – a more social and inclusive Europe implementing the European Pillar of Social Rights
Actions related to tourism development in PO 4 (vi) should be considered with care as they might have negative effects on the climate. Heightened touristic activity will lead to GHG and ozone depleting substance emmissions due to transportation, waste disposals and consumption of goods and services. Although actions against overtourism are welcome, but it is suggested to include joint action to harmonize sustainable touristic activities cross border and exchange of good practices that includes acceptable limits in emmissions, measurable indicators to monitor changes in emmissions, limits in number of vehicles and visitors coupled with limitations on fossil fuel run vehicles. Building on this, it is important to have joint educational actions of visitors, local residents, service providers on how to comply with the requirements and limitations set jointly in order to achieve acceptance, prepare visitors beforehand and preempt the deterioration of natural and cultural sites and uncontrolled emmissions. It is suggested to have joint actions to develop common food waste standards cross-border and incentives to procure organic products and produce from local organic or sustainable farms. It is proposed to harmonize (vi) with PO 2 (i) and add joint actions to improve touristic attractions, buildings, facilities to become energy efficient utilising local renewable energy resources like geothermal or solar energy. PO 4 (ii) does not contain actions or planned projects that will have negative effect on climate. Only during the infrastructure development and construction activities planned, the same negative effects and suggestions needs to be taken into account as detailed in PO 1 (iii). But it is proposed to add sustainability and environmental education topics to the actions that aim to integrate marginalized groups in order to meet the principles of the selection citeria and to ensure the consistency of POs.
Priority 4 Cooperating border region of the Programme ISO 1 – a better cooperation governance
Action 1: ISO 1 (b) projects are not relevant from the perspective of climate. Action 2: ISO 1 (c) contains projects and actions that promote the organisation of various cultural, sport festivals and events which also have the same threat on climate as detailed in case of PO 4 (vi) as these events contribute to increased touristic activities.

6.7 Potential effects of the programme on built environment, settlement surroundings, cultural- and archaeological heritage

Priority 1. Competitive border region PO 1 – a smarter Europe by promoting innovative and smart economic transformation
PO 1 (iii) could have a negative effect on the landscape surrouding settlements in the Hungary-Croatia Programme area. Scaling efficiency does not always come with the preservation nor renovation of the historically built environment thus transforming the image of settlements and their surroundings all of which may result in losing cultural- and archaeological heritage. Besides establishing conditions for SMEs to enter international markets by infrasturctural developments often reshape landscapes and can have negative effects on both traditonal and conventional ways of manufacturing, farming and other artisanal works.

However by having more jobs especially in rural areas help to elevate living standards – people have more to spend on their environment (homes, gardens etc.) – and to gain income for munincipalities who can fulfill more of its economically non feasible activities related to preserving cultural heritage such as renovation of the tradicional built environment and the protection of the landscape.

Priority 2. Greener and low-carbon border region

PO 2 – a greener, low-carbon Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate adaptation and risk prevention and management

PO 2 (i) promotes energy efficiency and the reduction of greenhouse gas emissions, thus creating a space for the built infrastructure serving innovative green solutions, which often cause quick and visible change in the landscape sourrunding settlements especially in rural areas.

On the other hand in less developed areas insulation of homes and public institutions is lacking behind causing inefficient use of resources, therefore it is crutial that the Hungary-Croatia Programme intends to improve energy efficiency specifically through this action. Moreover pratices in reducing green house emissions for remote locations offer off-grid systems (e.g. solar panels, household wind farms) doing less harm in terms of built environment and the overall picture of settlements by helping in the protecion of natural surroundings, lowering demand for energy gained from forestry and other fossil energy sources. It is important to increase energy efficiency with not only on the production side, but among the consumers as well, with attitude changing programmes excess energy usage can be avoided.

Type of actions in PO 2 (iv) will mostly have positive effects on the built environment, cultural- and archaeological heritage as they try to prevent and mitigate natural and human-induced disasters and reduce the impact of climate change. Disasters bring instability and unexpected changes to built environment through deterioration regarding cultural heritage (e.g. floods, bushfires, landslides) that cause economic hardship, loss living space and homes. In terms of subsidence affecting ground cables and pipes climate change poses a great threat to settlements built on clay dominant soil, in order to prevent such cases of physical and economic degradation planned actions are desired. Therefore joint programmes that aim to prevent and mitigate the effects of climate change and disasters on buildings and settlement surroundings enhance resilience by a decreasing risk of floods, heatwaves (insulation, shading and cooling) and other extreme weather events while also having positive impact on the durability and livability of civil and cultural buildings, settlements.

Priority 3. Inclusive border region

PO 4 – a more social and inclusive Europe implementing the European Pillar of Social Rights

Due to the economical differences detected between regions of the Hungary-Croatia Programme area there are several issues in the field of educational services. By enhancing quality of learning, distance and online education PO 4 (ii) will have a positive effect on the level of awareness in terms of preserving cultural heritige thus strenghening communities. Also education builds resilience by serving quality work to the local economy that makes the elevation of living standards possible thus preventing depopulisation that otherwise results in degradation of built environment and loss of cultural value.

PO 4 (vi) enhances the role of culture and focuses on renovation and restoration of cultural heritage sites. Built environment and infrastructure will benefit from these types of actions while having positive economic and social effects.

On the other hand construction of new buildings, facilities and utilities for touristic purposes change tendencies in land use at both urban and rural areas. It may also result in the overburdening of the surrounding infrastructure creating discrepancies between values represented by the built environment and cultural- and archaeological heritage destinations. Tourism can endanger vernacular technology,

and traditional constructions simply may vanish, giving space to modern buildings eager to supply demand for accomodation establishments. Furthermore, there is the risk of overuse and the degradation of quality at cultural heritage settlements and archaeological heritage sites in form of illegal touristic constructions, pollution, over-accelerated and uncontrolled urbanisation.

Moreover, it is common knowledge that any artificially produced light entering an area where it was not actually intended is designed to be considered as light pollution. Light pollution goes hand-in-hand with the contruction and renowation of the built environment, Croatia and Hungary being no exception. Thus, infrastructural developments facilitating access to different tourist destinations and new locations – construction investments driven by tourism (e.g. lighting of car parks, catering establishments, open-air axhibitions ect.) – are expected to cause light pollution in the area. Therefore care must be taken to position the luminaires correctly and to direct light. The usage of high luminous flux sources should be avoided in all cases. In addition, measures should be established in terms of timely lighting; e.g. in the case of tourist attractions, buildings that do not perform a night function, the duration of their illumination shall be determined to the extent necessary to avoid any unnecessary pollutions throughout the night. Last but not least it is reccomended to choose the right color temperature for the light in the luminaires keeping in mind that extensive emission of blue light is harmful to both humans and insects.

Priority 4. Cooperating border region

ISO 1 – a better cooperation governance

ISO 1 (b) enhance efficient public administration by promoting legal and administrative cooperation and cooperation between citizens, civil society actors and institutions, in particular with a view to resolving legal and other obstacles in border region is irrelevant in terms of built environment.

ISO 1 (c) aims to build up mutual trust may have slight positive effects in terms of encouraging citizens in organising events and forums to display traditions also in terms of built environment, emphasising preservation of cultural heritige sites thus putting socio-political pressure on administrative and legislative local bodies to act accordingly if needed.

6.8 Potential effects of the programme on human health, and lifestyle

Priority 1. Competitive border region

PO 1 – a smarter Europe by promoting innovative and smart economic transformation

PO 1 (iii) enhances sustainable growth and competitiveness of SMEs and job creation in SMEs which may result in undesired pollution in form of increased CO_2 emissions. In rural regions often used for recreational activities industrial development could change life of locals signicantly by increasing light and noise pollution levels even if all existing regulations, aimed at restrickting pollution, are followed. On the other hand at the same time small scale investments are needed to help impoverished regions in order to raise living standards and bringing some social and economic vividness.

Therefore it is crucial to put an emphasis on smart economic transformation which allows remote locations and underdeveloped areas to be corporated into the economic circulation without sudden urbanisation that brings undesired change in the way of living.

Priority 2. Greener and low-carbon border region PO 2 – a greener, low-carbon Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate adaptation and risk prevention and management
Lower carbon emissions and energy transformation in form of energy efficiency and cleaner sources will have great positive effects on health promoted by PO 2 (i). In underdeveloped regions insulation of private and public buildings can be severely obselete or simply non existent, therefore any measure that aims to mitigate this issue thus lifts up living standards is much welcome. Besides cities and the most remote locations are both subject to all kinds of pollution (e.g. plastic, soil, air) can be solved by promoting circular economy aiming to decrease the amount of thrown away tools and devices and leaving less waste behind that in the end harm human health. Climate change poses a serious threat to human health and security by destabilising natural systems. PO 2 (iv) aims to mitigate its effects as much as possible by building resilience. The ability to adapt to extreme weather conditions is going to be crucial in the upcoming decades to ensure food security and safety and decrease the number of people who will be affected by heat waves. Also there is a greater risk of floods, bushfires, landslides etc. that directly threat human life and livelyhood. Investments in these fields are vital for human health and lifestyle as well as the state of environmental services.
Priority 3. Inclusive border region PO 4 – a more social and inclusive Europe implementing the European Pillar of Social Rights
PO 4 (ii) intends to support inclusiveness and quality services in education, making people more conciuos about their lifestyle. Also by opening opportunities for lifelong learning and on-line education through PO 4 (ii) citizens even at remote locations can gain knowledge in order to be able to get paying jobs elevating their living standards meaning longer and healthier lives. However, adult education and online learning have a lower efficiency therefore, besides being indirect, the positive effect of this action on human health is smaller. Under PO 4 (vi) tourism has extremely important potential in the improvement of the economic and social status of the cross-border area. Through direct benefits in increased local income and number of workplaces it can contribute to fighting poverty and allowing the most vulnerable social groups to increase their health-related expenditures. Cross-border and international tourism also has a slight negative potential on the health of local communities through exposure to diseases transmissible from human to human.

Priority 4. Cooperating border region ISO 1 – a better cooperation governance
Institutional cooperation under ISO 1 (b) enhances efficient public administration by promoting legal and administrative cooperation and cooperation between citizens, civil society actors and institutions, in particular with a view to resolving legal and other obstacles in border regions, therefore having planned effects in various areas but have only narrow and/or very indirect effect on human health. Engaging citizens in cultural exchange from both countries participating in the Hungary-Croatia Programme helps to build mutual trust under ISO 1 (c) thus, besides having desired effects on cooperation, has slight positive effects on lifestyle. Inhabitants of the Hungary-Croatia Programme area are more likely to travel across the border for recreation when they feel safe while being accomodated by another nation if both are aware of the cultural differences or even understands the other language.

6.9 Potential effects of the programme on environment consciousness

Priority 1. Competitive border region PO 1 – a smarter Europe by promoting innovative and smart economic transformation
Although actions listed under PO 1 (iii) that inlcude infrastructure development and construction activities might have negative impact on the field examined, research and innovation activities and initiatives promoting sustainable joint product, technology and service development can enhance environmental consciousness in the Hungary-Croatia Programme area. Soft actions under Priority 1, such as trainings and seminars for SMEs to improve their knowledge on smart, innovative green solutions could provide ideas for further development. Moreover, targeted trainings and awareness-raising campaigns to promote the use of renewable energy sources to reach competitiveness will also have positive effects on environmental consciousness. Nevertheless, the small-scale infrastructural investments typically imply the usage of heavy machinery causing greenhouse gas emissions. We suggest to apply the air quality control plan and waste disposal measures detailed in 6.2. here as well. The inclusion of climate-positive and sustainability expectations of SMEs in the selection criteria is also suggested to ensure that the products and services innovated or improved truly meet the smart transition goals and contribute to the increase of environmental consciousness.
Priority 2. Greener and low-carbon border region PO 2 – a greener, low-carbon Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate adaptation and risk prevention and management
PO 2 (i) *promoting energy efficiency and reducing greenhouse gas emissions* and (iv) *promoting climate change adaption and disaster risk prevention and resilience, taking into account ecosystem based approaches* will both have positive effect on the examined field. Environmental consciousness will directly be improved by the joint education, awareness raising and knowledge sharing activities planned under this priority. Activities under PO 2 (i) will help the transition to renewable energy sources, resulting in the decrease of GHG emissions and the carbon footprint of SMEs, as well as the transformation of the society to be more energy and environmentally conscious. It should be not forgotten that, when developing green infrastructure, the two SOs under PO 2 shall be in harmony.

The other constructive element of the Hungary-Croatia Programme is the specific focus on forming the attitude of the general public. In the framework of the activities under PO 2 (iv), various actors of the society will be informed about climate change, the circular economy and environmentally conscious solutions. The planned actions under PO 2 (iv) will place great emphasis on the topics of biodiversity preservation, improvement of green infrastructure, leading directly to the rise of environmental awareness.

The "Fűts okosan!" ('Heat smartly') campaign should be continued, and broadened in Croatia, in order to decrease the emissions from household heating by encouraging for using dry firewood that originates from sustainable forest management (e.g., continuous cover forestry), use less lignite and coal, and do not use any household waste for heating.

Priority 3. Inclusive border region

PO 4 – a more social and inclusive Europe implementing the European Pillar of Social Rights

While social innovation and inclusion interventions have no direct impact on environmental consciousness, the promotion of sustainable means of tourism may have positive effects on both service providers and tourists. The programme specifically includes trainings for stakeholders of the tourism sector on topics associated with environmental sustainability, as well as studies and action plans exploring sustainable forms of tourism valorisation of the natural environment. The most positive elements under PO 4 (vi) are the actions related to the promotion of green tourism and environmentally-friendly destination management. As a result of the Covid-19 pandemia, close-to-nature tourism got more popular, therefore the Hungary-Croatia Programme will support initiatives related to the improvement of green mobility accessibility, such as the development of cycling paths, with particular regard to the existing international routes of EuroVelo.

The promotion of close-to-nature tourism might also have negative consequences; for the sake of sustainable tourism, the tourists must respect the environment, with particular regard to the Transboundary Bioshpere Reserve located in the cross-border area. Waste management and the operation of supplementary services in the area of the attraction must be regulated in favour of nature.

The actions against overtourism and the awareness raising campaigns on sustainable tourism are welcome. PO 4 (ii) attempts to improve equal access to inclusive and quality services in education, training and lifelong learning through developing accessible infrastructure, including by fostering resilience for distance and on-line education and training. The related actions that will be supported might have a positive effect on environmental consciousness, as education, the transfer of good practices and the exchange of knowledge might broaden the horizon of students, pupils, etc. It is suggested to include the presentation of environmentally-friendly aspects in each educational activity, so that participants enriched with expertise could carry out their future activities in an environmentally conscious manner.

During the infrastructure development and construction activities planned, the same negative effects and suggestions needs to be taken into account as detailed in 6.6, under PO 1 (iii).

Priority 4. Cooperating border region ISO 1 – a better cooperation governance
Institutional cooperation under ISO 1 (b) is planned in various thematic areas, including those focusing on energy efficiency and renewable energy sources. Interventions in this field have the potential to raise the environmental awareness of local communities. P2P actions under ISO 1 (c) can also serve as a platform for the transfer of good practices related to environmental consciousness. Although cultural festivals and sporting events can have a negative impact on the environment, in the same time they can all contribute to the development of environmental awareness through the proper communication and the promotion and use of appropriate recycled materials.

6.10 Potential effects of the programme on emerging environmental conflicts and potential problems, and on the escalation of existing problems

Priority 1. Competitive border region PO 1 – a smarter Europe by promoting innovative and smart economic transformation
Infrastructure development and construction works are potential tension-increasing factors from an environmental protection point of view. As highlighted in the previous Chapters, investments related to this priority have a number of negative environmental impacts, including the generation of non-recyclable waste, the emissions from transportation and noise pollution. However, the soft actions under this PO, such as (preferably online) trainings, events and the involvement of business support and R&D organisations serve less as a basis for potential conflicts. Regarding innovation, initiatives promoting smart economic transformation must not give rise to the escalation of existing problems and conflicts either. Encouraging SMEs to be environmentally conscious shall be a target action under this priority, therefore it is suggested to include a criteria regarding natural asset protection in the future calls for proposals.
Priority 2. Greener and low-carbon border region PO 2 – a greener, low-carbon Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate adaptation and risk prevention and management
Regarding green infrastructure development, the possible negative effects on the environment explained in the previous paragraph (Priority 1) can be interpreted under PO 1 - SO (i) as well. Actions supporting the clean and fair energy transition and energy efficiency can provoke conflict between the companies and the energy suppliers due to the decrease in demand. Switching to renewable energy sources might be costly but at the same time it is a forward-looking decision. In line with the climate and decarbonisation goals, the transition should be an interest of every actor in the region, as the lag and the launch of environmentally damaging solutions will in any event lead to conflict among consumers, producers or local and regional authorities. It shall be highlighted, that although the border region is characterised by favourable environmental conditions, the results of climate change; the increase of summer drought as well as river floods especially in the area of the Drava and Mura rivers might create a hostile atmosphere. Human factors are also playing an increasing role in the development of catastrophic events (eg. illegal logging, forest

fires, communal pollution of rivers, etc.). In relation to these impacts, the Programme shall improve the awareness and attitudes of local stakeholders. High fossil fuel dependency can be detected in the region as well: in both countries, over 2/3 of their total energy supply is currently based on fossil energy sources. The transition may result in conflicts however at the same time it is essential and expected from both countries. The waste management situation in the counties located in the border area is also a potential source of conflict, therefore to avoid the tension, the Hungary-Croatia Programme shall support a wide range of environmental and green transition projects.

It should be emphasised, that due to its limited financial resources, the 2021-2027 Hungary-Croatia Programme cannot provide significant contributions to mitigation and adaptation to climate change, however it can provide policies supporting more effective and coordinated efforts of the stakeholders.

The second SO (*iv) promoting climate change adaption and disaster risk prevention and resilience, taking into account ecosystem based approaches*, selected under the Hungary-Croatia Programme offers many options for conflict resolution. As the majority of buildings in the Hungary-Croatia Programme area do not meet the technical regulations nor the energy efficiency principles, the organisation of a number of awareness-raising programmes promoting renewable energy sources, supported by the Hungary-Croatia Programme is proposed for various age groups and actors of the society. The SO will contribute to the decrease of environmental conflicts through the planned projects involving biodiversity preservation, the improvement of green infrastructure, the restoration of habitats contributing to the absorption of emmissions (CO_2). If the actions will result in the increase of capacity against extremities and disasters as well as the region will be able to control the local climate, the tendency of conflicts shall decrease.

Priority 3. Inclusive border region

PO 4 – a more social and inclusive Europe implementing the European Pillar of Social Rights

Increasing tourism activity and preserving natural assets are generally controversial priorities. The high risk of over-exploitation of the natural environment must be taken into account and the funding decisions must be adequately offset by the application of the sustainability criteria, otherwise tourism development activities will lead to over-consumption and deterioration of natural resources in the long term. Infrastructural developments targeting touristic activities potentially threaten the biodiversity, especially in the case of attractions or programmess located close to natural heritage or protected sites. Increased touristic activity and the related visitor traffic, due to the traffic might result in air pollution, water and soil contamination and increased amount of communal waste generated, therefore increased energy consumption. Measures announced against overtourism might lead to conflict as well, however, in order to protect our environment or our health, keeping the determination in mind while evaluating the projects is certainly welcomed.

With regard to SO (ii) targeting the improvement of the quality of education, training and lifelong learning situation in the Hungary-Croatia Programme area, joint educational actions for the general public shall be supported in order to prepare local residents and all age groups for the transition and to inform them about the sustainable opportunities offered by circular economy. Knowledge and awareness might help to prevent the escalation of conflicts.

As highlighted in previous Chapters, it is suggested to harmonise SO (vi) promoting culture and tourism development with PO 2 (i) targeting energy efficiency and launch joint actions to improve cultural buildings and tourism facilities promoting local renewable energy resources in the possibility for application of which the region abounds.

Priority 4. Cooperating border region ISO 1 – a better cooperation governance
Cooperation, conversation and strengthening of cultural and professional links promoted by Action (b) and (c) under ISO 1 generally contribute to solving emerging conflicts and problems. The organisation of cultural and sports events might serve as a platform to transfer good practices on environmental consciousness which can prevent possible conflicts regarding climate change. If sustainability is included in the criteria against funded cooperation projects, these impacts can be especially positive.

6.11 Potential effects of the programme on the interrelationship and cumulative effect of threats to the above factors

Summary table of the potential effects on environmental and socio-economic factors of the CBC region

	Effects on soil	Effects on air	Effects on surface waters and groundwaters	Effects on biodiversity, flora, and fauna	Effects on Natura 2000 territories and other nature protected areas	Effects on climate	Effects on built environment, settlement surroundings, and cultural- and archaeological heritage	Effects on on human health and lifestyle	Effects on environment consciousness	Effects on emerging/escalating environmental conflicts and problems
PO 1 (iii) enhancing sustainable growth and competitiveness of SMEs and job creation in SMEs, including by productive investments										
PO 2 (i) promoting energy efficiency and reducing greenhouse gas emissions										
PO 2 (iv) promoting climate change adaptation and disaster risk prevention, resilience, taking into account eco-system based approaches										

PO 3 (ii) developing and enhancing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross-border mobility										
PO 4 (vi) enhancing the role of culture and sustainable tourism in economic development, social inclusion and social innovation										
PO 4 (ii) improving access to inclusive and quality services in education, training and lifelong learning through developing accessible infrastructure, including by fostering resilience for distance and on-line education and training										
ISO 1 (b) enhance efficient public administration by promoting legal and administrative cooperation and cooperation between citizens, civil society actors and institutions, in particular with a view to resolving legal and other obstacles in border regions										
ISO 1 (c) build up mutual trust, in particular by encouraging P2P actions										

Legend:	strong negative effect(s)	weak negative effect(s)	neutral or contrary effect(s)	weak positive effect(s)	strong positive effect(s)

The Hungary-Croatia Programme does not contain detailed measures, but loosely identifies intervention areas and sets boundary conditions. In the previous subsections (6.1-6.10) we analysed in detail the potential impacts of each selected SO on different environmental elements and categories.

Considering the various infrastructural developments, constructions, renovations planned in PO1 (iii) *enhancing sustainable growth and competitiveness of SMEs and job creation in SMEs, including by productive investments,* and increased consumption of natural resources with accompanying various forms of pollution anticipated due to touristic activities in PO 4 (vi) *enhancing the role of culture and sustainable tourism in economic development, social inclusion and social innovation* and I*SO* 1 (c) *build up mutual trust, in particular by encouraging P2P actions*, weak negative effects on soil, air, waterbodies, biodiversity, flora and fauna, Natura 2000 territories, and climate can be expected. However, PO 2 (iv) *promoting climate change adaptation and disaster risk prevention, resilience, taking into account eco-system based approaches* will have very positive or weak positive effects on them just as PO 2. (i) *promoting energy efficiency and reducing greenhouse gas emissions*) will have on the air, biodiversity and climate. Generally, it can be said that PO2 (i) will have contradicting effects overall since it contains renewable energy resource development actions that might have weak negative effects on soil, water, biodiversity, Natura 2000 and climate, but at the same time having positive effects as well by contributing to the mitigation of climate change and its pressure on natural resources.

PO 4 (ii) *improving access to inclusive and quality services in education, training and lifelong learning through developing accessible infrastructure, including by fostering resilience for distance and on-line education and training,* ISO 1 (b) *enhance efficient public administration by promoting legal and administrative cooperation and cooperation between citizens, civil society actors and institutions, in particular with a view to resolving legal and other obstacles in border regions* are not really relevant in respect to soil, air, waterbodies, biodiversity, flora and fauna, Natura 2000 territories, and climate. Also, PO 2 (i) *promoting energy efficiency and reducing greenhouse gas emissions,* however mentions some small-scale, low-emission infrastructural developments, it will have neutral effects on soil, waterbodies and Natura 2000 territories.

The presented table above is a summary of the evaluation. If the elements and categories of environmental impacts potentially affected by the 7 selected areas of intervention are analysed by simple mathematical methods (substituting positive and negative impacts with +1 and +2 and -1 and -2, respectively, taking the mixed impacts as zero, and averaging across different categories), we can read informative aggregate results from the diversified correlation system of the multi-element environmental impact assessment:

- Three SOs have an impact on all 10 assessed environmental elements: PO 1 (iii) supporting SMEs has an overall negative effect together with PO 4 (vi), however PO 2 (iv) taking measures of climate change has only strong positive effects. Sustainable tourism interventions of PO 4 (vi) besides having negative impacts are showing slight positive

effect in two areas as well as PO 1 (iii). Cooperation measures under ISO (b) affect the lowest number of environmental areas (only 1).

- The vast majority of assessed environmental elements are affected by 4 out of 7 SOs, and each of them is affected by 4 SOs at least.
- Considering the average impact on environmental elements, the mostly negative effect is realised by sustainable tourism measures of PO 4 (vi) and interventions for SMEs under PO 1 (iii): apart from joint effects on environment consciousness and separate effects on human health and built environment, while they both have potentially negative impacts on all the other environmental elements.
- PO 2 (i) promoting energy efficiency and reducing greenhouse gas emissions have the most mixed effects: strong positive impact on two areas (health, environmental consciousness) and slight similar effect in another (built environment), while having weak negative effects on six elements (soil, biodiversity, water, Natura 2000, climate, environmental conflicts).
- The most positive overall impact is expected in case climate change interventions under PO 2 (iv). Cooperation measures of PO 4 (ii) and ISO 1 (b) also have positive overall impact, but they are irrelevant for the majority of environmental elements.
- The environmental elements gaining the most positive effects from the planned interventions are human health, environment consciousness and built environment.

If the effects of the intervention are averaged, the following ranking is obtained:

- PO 2 (iv) Climate change: 2
- PO 4 (ii) Education: 0.2
- ISO 1 (b) Public administration: 0.1
- PO 2 (i) Energy: -0.1
- ISO 1 (c) Mutual trust: -0.2
- PO 1 (iii) SMEs and jobs, PO 4 (vi) Sustainable tourism: -0.8

From the above data, it can be seen that the areas of sustainable tourism, growth of SMEs and job creation are where a potential intervention can most probably violate or jeopardize an environmental aspect. Besides the area regarding mutual trust, interventions have a positive impact in general.

7 Protective measures

Within this section, our approach follows the focus of the SEA Directive as it is fully applicable for the present cross border Hungary-Croatia Programme.

If there are any measures envisaged to prevent, reduce and as fully as possible offset any significant adverse, unfavourable effects on the environment of implementing the Hungary-Croatia Programme, those shall be listed here together with the identification of those critical programme elements which can have a potentially negative environmental effect despite the measures taken to decrease these effects. The notes are grouped under key environmental areas, following the headings of Chapter 6 of the current SEA.

Soil

Agricultural activity in the cross-border area plays a vital role, the protection of soil or the minimisation of erosion, deflation and pollution is more than important. Infrastructural activities, constructions are suggested not to be planned on fertile soils especially in counties where the local economy greatly depends on agricultural production.

Joint activities on widespread use and transition to sustainable land use practices, ranging from agroecological, regenerative farming (no till, reduced tillage etc.) to organic agroforestry practices are advised, all of which focus on soil health. Among many activities education of agri-food SMEs is also vital and should focus on learning and sharing best practices, which result in having a more sustainable agriculture that relies its dependence on biodiversity and ecosystem services. Not forgetting the broader society, local citizens and other stakeholders should also learn about alternative ways of consumer behaviour such as "Farm to Fork" initiatives, local agri-food products and other ways of adaptation to climate change that improve the overall well-being while boosting local economies. Actors of the agricultural sector are currently absent from the Hungary-Croatia Programme as they are not included in the main target groups, which is totally unacceptable if the Hungary-Croatia Programme plans to carry out activities concerning land use.

Increased popularity resulting in crowded areas are challenging local waste management systems and threaten soil health. In order to minimize impacts from mismanagement of waste in terms of tourism joint activities are recommended in form of education and training of businesses, local residents, and other parties that have an impact on the prevention of waste generation. Visitors should be informed of the rules before their arrival and during their stay (digital applications, online promotional materials etc.), while also promoting the usage of environmentally sustainable products.

To natural sites crowds and vehicle traffic pose a serious threat, therefore events can only be organised if traffic is limited and kept away as much as possible from the site and precautions have been made to prevent waste pollution.

Air

Between the two countries joint actions for the creation of common guidelines for SMEs (e.g. handbooks) about best practices at construction sites and other related activities are recommended in order to minimise environmental demage and pollution in respect of national regulations.

To save valuable resources and to prevent unneccesary pollution during developments in terms of SMEs repurposing of underutilised buildings must be considered since it does not require physical construction, nor large-scale land clearing.

Ecosystem based approaches are recommended in various fields of design, paying special attention to the interior and exterior of buildings where green surfaces improve air quality. If enlivened, parks and other green areas also affect air quality through absorbing pollutants from the air. In terms of climate adaptation, cities (esp. Pécs) and even small settlements benefit in terms of climate adaptation from green infrastructure investments by providing nature-based solutions and lessening polluting factors.

Connected border region is promoted through development and improvement of sustainable and climate resilient mobility including development of transport infrastructure i.e. road connections. New road connections should support links between isolated peripheral areas, in order to connect neighboring communities, to improve and to speed up access to TEN-T and other major road/rail infrastructure, generating time savings in cross-border mobility. Although road traffic is source of air pollution, shortening of travel time in cross-border region will result in a reduction in fossil fuel consumption in relation "to-do-nothing" and thus reduction of air pollutants emission. In addition, with the implementation of EU "Fit to 55" package an increase in share of vehicles with zero and low emissions in road traffic is expected meaning also further reduction in air pollutant emission from road traffic. Nevertheless, harmonized rules in terms of fossil fuel run vehicles and continuous promotion of e-mobility in cross-border region are recommended

Surface waters and groundwaters

Harmonising regulations related to erosion and sediment control plan mentioned in 6.1. together with a handbook of best practeces (Chapter 6.2) are recommended preventing runoffs at construction sites, thus decreasing risk of water pollution.

Large scale water management problems can be solved by involving agricultural fields in water retention as mentioned in Chapter 6.1. These matters are best solved by joint activities that develop harmonized cross-border water retention and storage strategies together with best prectices for and provided by farmers with the support of nature conservation and flood prevention experts. In these issues education is vital where stakeholders should relies that regenerative, agroecological practices improve soil structure therefore making it able to limit surface runoff. Furthermore reconstruction of natural ponds and small reservoirs, construction of

weirs for storage in rivers canals and adequate irrigation-drainage systems also should be known to regulate outflow.

River management also calls for cross-border cooperation where reconstruction of deteriorated river sections and floodplains should be carried out with an eco-system based approach. In order to achieve expected outcomes in water management, both countries have to guarantee that no water powerplant is planned nor will be granted to be constructed in the future on Mura and Drava rivers until further progress has been made to improve hydropower systems/technologies to be more environmentally friendly and to decrease the damage to aquatic ecosystems.

Harmonized regulations are expected to be made regarding wastewater discarges (supporting the development of physical and/or biological treatment of wastewater at touristic facilities across both countries.

While putting a greater emphasis on the development of infrastructure related to water tourism, elboration of joint strategies and plans for environmentally conscious water-based touristic activities should not be forgetted, as well as raising visitors' awareness on local ecosystems before and during activities like trekking routes on water, observing aquatic birds, boat trips which besides can play a vital role in the preservation of natural sites.

Biodiversity, flora, and fauna

Planned developments should only occur in accordance with relevant national environmental regulations, while avoiding (definitely for large-scale, long-standing developments) protected natural areas like UNESCO Mura-Drava-Danube Transboundary Biosphere Reserve, Natura 2000 territories, national parks or forest reserves, nature parks, regional parks, special reserves, significant landscapes, park-forest, monuments of nature and monuments of park architecture mainly in Zala, Somogy, Bjelovar, Pozega-Slavonia counties if possible.

For non-protected natural areas it is essential to develop and harmonise biodiversity compensation plans for activities related to building infrastructure with involvement of conservations experts. One of the most significant wetland area of Europe is the Mura-Drava-Danube Transboundary Bioshpere Reserve. The Hungary-Croatia Programme area contains significant parts of this reserve at the border region of the two countries, however there was very little mentioned about this site in the planned projects and activities not acknowledging the substantial support behind TBR. It is strongly reccomended to include specific actions dedicated solely to this Bioshpere Reserve, not only because its unique biodiversity, but because it stretches along the border of both countries thus signifying the importance of crossborder cooperation and relations which is the ultimate purpose of Hungary-Croatia Programme.

Education and information of agricultural stakeholders about the environmentally friendly, organic or agroecological practices mentioned in (6.1.) is advised. Usage of shelter belts, preserving landscape features, agroforestry practices, avoidance of synthetic fertilizers, desiccants, chemical pesticides (especially neonikotinoids) are all crutial aspects in the protecion of nature which are all closely linked to agriculture. In addition, pollinators should be monitored

with a harmonised sampling cross-border network which is beneficial both environmentally and economically.

Evaluation of regional ecosystem services, and creation of data sharing services that realise intersectoral cooperation with all the relevant stakeholders (agriculture, wildlife management etc.) are also needed.

Tourism may result in overuse of natural sites. Thus, it is recommended to add joint actions to develop harmonized codes of practices or guides on how biodiversity can be preserved through touristic services. Environmental management practices (following circularity principles) to prevent waste generation, to treat, to select or dispose waste in touristic facilities is must in terms of nature protection, while not forgetting sustainable purchasing schemes that ensure the procurement of environmentally friendly products. The adoption of tour group or visitor control measures are also suggested to minimise disturbance and degradation. Furthermore, in case of greenfield and built area projects environmental impact assessments are recommended together with practices that aid in biodiversity protection.

Natura 2000 territories and other nature protected areas

The border region is especially rich in Natura 2000 protected areas, not only the Mura-Drava-Danube TBR, but the Mecsek near Pécs, north and south Zselic, Forest of Szenta or Biogora Kilnicko gorje etc. are just as important and impacted by and exposed to the negative effects of climate change. Therefore, it is suggested that the joint conservation actions planned in the Hungary-Croatia Programme should integrate and mention the development of harmonized dedicated conservation plans with clear targets for Natura 2000 areas in both countries, otherwise the current state of grasslands and forests countinues to be unsatisfactory. In addition co-operatively established monitoring systems for regional pollinator mapping with cross-border sampling networks are highly needed.

Joint actions aiming at raising investments, harmonising funds cross-border (e.g. co-financing LIFE program) or at making use of other EU funds (Horizon Europe projects, Biodiversa+ Partnership) to build capacity or conduct relevant research are always lacking behind.

Mapping and assessing the socio-economic benefits of Natura 2000 areas together with wide range of stakeholders could raise awareness and assign greater value to these territories such as carbon storage capacity, synergies of biodiversity with climate change mitigation and adaptation etc.

Cross-border programs that support the education of local touristic companies, nature parks, public institutions responsible for the management of nature protected areas and natural values (on the national and regional level) as well as other stakeholders on the general content and implications of Natura 2000 directives, and national conservation plans are vital in the socio-economic judgement of these territories. Besides it is also recommended to have joint actions to educate and train visitors and local residents on the ideal desired state of Natura 2000 sites in order to ensure their protection.

Climate

Sustainability and climate-positive expectations from SMEs in accordance with the targets of national climate change strategies are recommended to be included in the selection, therefore, contributing to local adaptations in agriculture, industry or service sector to climate change and the products are produced in ways that do not contribute to GHG emissions.

Since the energy effiency of retrofitted buildings and the resilience of urban areas are essential to combating climate change (local microclimate, long-term well-being) actions ameliorating their current state is just as important as achieving net-zero buildings.

Besides number of trees, the application of biophylic design described in 6.2. many other solutions should be incorporated into the renovation of the building and in the establishment of sustainable mobility as they decrease energy consumption through vegetative climatic effects, they also have many beneficial effects on the natural and built environment. Preventive measures should take place to mitigate rebound effect in terms of living in sustainable buildings: residents might end up using more energy due to the false notion that they do not contribute to GHG emmissions. Besides decreasing dependence on single energy sources, prioritisation of solar and geothermal energy solutions over biomass energy installations is of high importance as described in 6.6 (biomass is not forbidden, but production practices are needed to be harmonized). Cross-border actions are needed in order to monitor changes in emissions which aids in limiting the number of vehicles (esp. those running on fossil fuels) and visitors. This can be achieved by joint educational actions of visitors together with local residents, service providers and other stakeholders.

Regionally produced food waste also demands joint actions to develop common food waste standards and incentives to procure organic products while raising awareness amongst consumers (both visitors and locals) about local organic and sustainable farms.

In order to meet the principles of the selection criteria and to ensure the consistency of POs environmental education should be integrative in terms of marginalised groups.

Built environment, settlement surroundings, cultural- and archaeological heritage

Scaling efficiency for SMEs by building infrastructure potentially could negatively alter the overall image of settlements and culturally traditional landscapes. During any kind of building or renovation, even repurposing of underutilised buildings for SMEs (as earlier suggested) regulations are recommended to be harmonised on a cross-border basis in order to protect cultural heritage settlements and archaeologically important sites.

Interventions for creating jobs elevate living standards which can increase demand for living space that is likely to quickly change the whole landscape. Local authorities together with locals have to establish a strong regulation-based morality for preserving heritage sites even by prohibiting further urbanisation. In addition, municipalities gaining a surplus income from economic improvement should allocate a sufficient amount of their budget for public spaces, heritage sites, and the surroundings of the settlement.

In less developed areas expenditure of households does not allow citizens to properly renovate their homes resulting in degraded homes and public institutions with no or sub-optimal insulation. Actions of the Hungary-Croatia Programme regarding energy efficiency should consider this as a first priority especially in case of remote and/or rural regions. Also, in order to avoid distortion of the landscape smaller, less visible off-grid solutions are suggested when shifting to renewable energy sources at cultural- and archaeological heritage sites.

Overuse caused by tourism not only degrades natural sites, but also burdens the surrounding infrastructure. By controlling the flow of visitors and awareness raising this negative effect must be mitigated (as earlier suggested). Traditions related to vernacular technologies may simply vanish if demand for modern buildings (being cheaper) is uncontrolled not speaking of illegal tourism related constructions. Therefore, authorities have to harmonise cross-border rules of construction in form of joint action.

In order to mitigate the negative effects of light pollution, unnatural excess of blue light should be evaded as it is harmful to both humans and insects by choosing the right color temperature for the luminaries at tourist attractions, and for buildings that do not have any function at night. Care must be taken to position the luminaires correctly and to direct light. The usage of high luminous flux sources should be avoided in all cases, while also paying attention to timely lighting; e.g. the duration of illumination of the exterioir shall be limited to avoid any unnecessary pollution throughout the night. Horizontally polar lights have a particularly significant effect on insects, since excessive appearance of insects in an area can upset the ecological balance. Thus, the placement of glass buildings near the waterfront should be avoided. The surface of car parks should not be paved with black asphalt, while tourist facilites should not be covered with light-reflecting materials (bright white, red, glass, etc.) – matte building materials are recommended to be used instead.

Human health and lifestyle

Urbanisation driven by economic upturn, tourism and infrastructure investments besides lifting living standards also cause pollution (soil, air, noise, water) which eventually can harm human health. Smart growth suggests that urbanisation has to be planned accordingly with international and national regulations and agreements in order to mitigate sudden shifts in everyday life without transition. Therefore, cross-border actions are needed with the scope of preserving recreational sites and the quality of environmental services that ensure the basis for human health even for coming generations.

Also there is a greater risk of floods, bushfires, landslides etc. that directly threat human life and livelihood. Investments and regulations harmonized on international level must take action in building resilience as earlier suggested (esp. soil and water management).

After Covid-19 it is obvious that transnational action is inevitably needed to limit exposure to diseases transmissible from human to human.

Environmental consciousness

Research and innovation initiatives promoting sustainable joint production, technology and service development can enhance environmental consciousness in the Hungary-Croatia Programme area by targeted trainings and awareness-raising campaigns to promote the use of renewable energy sources.

Soft actions focusing on SMEs to improve their knowledge green solutions could provide ideas for further development. Appling air quality control plan and waste disposal measures regarding inclusion of climate-positive and sustainability expectations is very well recommended in the selection criteria in terms of raising awareness of stakeholders. Any other regulation or provision compelling and/or driving SMEs to decrease GHG emissions have an overall local social effect if well communicated.

Environmental consciousness is suggested to be further raised by the joint education, awareness raising and knowledge sharing forming the attitude of the general public about climate change, the circular economy and environmentally conscious solutions.

Tourism besides having positive economic effects can serve as a gateway to having a great impact on the conscience of visitors by promoting green tourism, while having positive effect on service providers.

In order to address younger generations cross-border actions are needed for providing first in hand experiences in education (transfer of good practices and the exchange of knowledge), which helps widening the horizon of pupils and members of the local community.

8 Assessment of the monitoring system

This Chapter includes the description of the measures envisaged concerning monitoring in accordance with Article 10 of the SEA Directive.

At the time of developing the draft version of the current SEA, the audited version of the Hungary-Croatia Programme did not include specific provisions on the planned monitoring activities. It must also be taken into account that, in the same time, according to the Hungary-Croatia Programme document, the details of the output and result indicator tables were not final and might be amended and clarified during the negotiation process.

In the submitted Hungary-Croatia Programme document for each output indicator, the measurement units, the milestones and the final targets were listed. In the case of result indicators, in addition to the measurement units, the baseline, the reference year, the final target value and the source of data were provided.

To justify the method chosen for the budget and output calculations, a supporting document on the budget indicators was also shared with the authors of the current SEA. The background document includes a short explanation on the background calculations and the determination method of the values as well.

The output and result indicators listed in the document are selected from the common output and result indicators for the ERDF and the Cohesion Fund, listed in the annex of the ERDF Regulation. These indicators represent the number of direct outputs (strategies and action plans, pilot actions, jointly developed solutions, participations, etc.) either during the Hungary-Croatia Programme implementation (listed as output indicators) or after the completion of funded projects (listed as result indicators, to measure the multiplication, upscaling or roll-out results).

The table also includes the dimensions and codes for different types of interventions and the rate of climate coefficients and nature coefficients calculated based on the overall compatible ERDF funds per SOs.

Chapter 4 of the Hungary-Croatia Programme document introduces the monitoring and evaluation system to be operated. This Chapter appoints the Monitoring Committee (MC) as main body in charge of monitoring and evaluation. During the processes, the MC will be assisted by the Joint Secretariat (JS). Although it is highlighted, that the composition of the Committee, as well as the provisions on the functioning are not agreed yet, the monitoring activities to be carried out on a regular basis by the MC have already been defined.

At the time of developing the current version of the SEA, the paragraph summarising the functioning of the monitoring system and e-cohesion was not complete. As no final agreement has yet been reached on the functioning of the monitoring system or on the final set up of the JS, it is difficult to provide proper proposals on the future system.

With regard to environmental aspects, it is recommended to include in the evaluation system and emphasize the key importance of monitoring measures complying with the following key criteria in accordance with Article 10 of the SEA Directive 2001/42/EC:

- Significant environmental effects of the implementation must be detected, realising any unforeseen adverse effects in time to undertake appropriate remedial action.
- Existing monitoring systems may also be used if appropriate, to avoid duplication.

The monitoring system should also meet the following standards:

- Specific: Effects that can be credibly attributed to the interventions should be measured, cleansed from the contribution of other factors.
- Proportional: Operational costs should be moderate and proportional with the practical value.
- Legitimate: It must comply with relevant legislation.
- Coherent: It must be compatible with programme/project monitoring systems applied during implementation.
- Easy to understand: It should be unambiguous both for system operators and beneficiaries, with clearly defined indicators.
- Exact in terms of spatial structure: It should be able to record the location and spatial context of data collected.

The monitoring system should be based primarily on project-level data. However, there might occur significant cumulative effects, which might be negligible at the level of individual projects, especially with regards to the combined environmental effects of interventions funded by the Hungary-Croatia Programme, which requires the establishment of program-level indicators as well. In addition to the selected output indicators, monitoring indicators measuring environmental effects and sustainability should also be defined. It would be beneficial to define at least one environment-specific indicator (preferably result indicator) for each priority objective. At the same time, an overly sophisticated indicator system should be avoided.

9 Non-technical summary

The planning of the Interreg Programme between Hungary and the Republic of Coratia for the period 2021-2027 started in 2019. The programme plans to organize the development activities of the next 7-year period along four priorities, which are the following:

1. Competitive border region
2. Greener and low-carbon border region
3. Inclusive border region
4. Cooperating border region

Specific objectives under the four priorities are covering the promotion of innovative and smart economic transformation, clean and fair energy transition, green and blue investment, the circular economy, climate adaptation and risk prevention and management.

In order to value the potential environmental benefits and harms caused by the implementation of the Hungary-Croatia Programme a Strategic Environmental Assessment should be created. The key regulatory document to be considered is the European Union Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (SEA Directive).

The first step of the assessment was the description of the objectives of the Hungary-Croatia Programme and the analysis of its consistency for identifying contradictions and synergies. Regarding its cohesion to sectoral policies, EU, Hungarian and Croatian development strategies/plans were analysed focusing on common measures and synergies.

For measuring the potential effects of the Hungary-Croatia Programme implementation, the social, economic and environmental state of the CBC area were analysed. Both the Hungarian and Croatian counties are facing rapid depopulation, ageing society, which are changing the structure of the local demography with increased need for social and infrastructural services. The mainly stagnant or the few developing county economies now all facing the consequences of the global pandemic and inflation.

Economic and infrastructural development both have many possibilities in the regions with the goal of increasing the creation of local value and quality of life, although these interventions should promote sustainable and ecologic standards as well. Regarding the local environment the CBC area has a geographical uniqueness which can be observed in local soils, flora and fauna, which has to be protected to preserve them for the future – this aspect should be involved in every development prospective. In this environmental report, the potential effects of the Hungary-Croatia Programme were analysed focusing on different environmental elements. The effects of the implemented objectives could be far more beneficiary for the counties in the area, when the indicated negative environmental effects are considered and avoided. Besides the

indication of the potential positive and negative effects on environment or on human health, in the document protective measures and recommendations for a monitoring system were outlined.