



Interreg



Co-funded by
the European Union

INTERREG PROGRAMME AT–HU 2021–2027

ENVIRONMENTAL REPORT

Working document “Version: Draft 1” 12.07.2021



Disclaimer:

The information and views set out in this report are those of the author(s) and do not necessarily reflect the official opinion of the contractor.

Recommended citation:

Strategic Environmental Assessment of the Interreg Programme Austria–Hungary 2021–2027, Environmental report, 12 July 2021

Authors:

M&E Factory monitoring and evaluation GmbH:

Angelos Sanopoulos, Elona Goma

Contractor:

Regionalmanagement Burgenland GmbH

Managing Authority Interreg V-A Austria–Hungary

Marktstraße 3

A-7000 Eisenstadt





INDEX

NON-TECHNICAL SUMMARY OF THE SEA REPORT	4
1 INTRODUCTION	8
1.1 Background	8
1.2 Aim and legal basis of the SEA	8
1.3 SEA process	9
1.4 Methodology	10
1.5 Description of the obstacles encountered	12
2 SHORT PRESENTATION OF THE PROGRAMME	13
2.1 Legal basis	13
2.2 Structure and intervention logic of the programme	13
2.3 Connections to other programmes and instruments	18
3 ENVIRONMENTAL LEGISLATION AND OBJECTIVES	19
3.1 Background	19
3.2 Breakdown per environmental issue (SEA Directive, Annex I, lit.f)	20
4 ENVIRONMENTAL STATUS QUO	27
4.1 Background	27
4.2 Breakdown per environmental issue (SEA Directive, Annex I, lit.f)	31
4.3 Interrelationship between the environmental issues	61
5 ASSESSMENT OF THE ENVIRONMENTAL IMPACT	63
5.1 Introduction	63
5.2 IP alternatives and zero scenario	65
5.3 Environmental impact per type of action	67
5.4 Secondary, cumulative, synergistic, positive and negative effects	92
5.5 Summary of the assessment	95
6 MONITORING PROVISIONS	96
7 REFERENCES	97
8 CONSULTATION DOCUMENTATION	99





NON-TECHNICAL SUMMARY OF THE SEA REPORT

Strategic Environmental Assessment framework

In accordance with the SEA Directive (2001/42/EC), a Strategic Environmental Assessment (SEA) is being conducted for the Austria–Hungary programme 2021–2027 to assess the likely significant effects of the programme on the environment.

The environmental report was prepared as part of the Strategic Environmental Assessment. This non-technical summary provides an overview of the full report.

Short description of the AT–HU Programme 2021–2027

The subject of the Strategic Environmental Assessment is the Interreg Austria–Hungary cooperation programme 2021–2027. This version of the environmental report is based on the draft programme of 8 July 2021.

The programme aims to tackle common challenges identified in the cross-border region and to strengthen cooperation in selected priorities that are linked to the EU objectives.

In compliance with these EU objectives, the programme focuses on the following priorities:

- **Priority 1: A green and resilient border region** by promoting climate change adaptation and risk management, access to water and sustainable water management, and protecting and preserving nature and biodiversity (42% of the programme budget)
- **Priority 2: A better-connected border region** by enhancing sustainable mobility (9% of the programme budget)
- **Priority 3: A competent border region** by improving access to inclusive and quality services in education, training and lifelong learning as well as promoting sustainable tourism (34% of the programme budget)
- **Priority 4: An integrated border region** by supporting capacity building and strengthening cross-border governance to address future challenges (15% of the programme budget).

Methodology of Strategic Environmental Assessment

The Strategic Environmental Assessment identifies, describes and assesses the direct and indirect impacts of the programme on a number of environmental issues such as biodiversity, water, soil, climate, air, landscape, human health and population, and cultural and material assets.

After describing the current environmental situation in the cross-border region, the SEA sets out the likely significant environmental impacts of the programme and whether the environmental situation is expected to improve, worsen or remain unaffected – especially in comparison to the scenario in which the programme is not implemented (the so-called zero scenario).

The time frame of the assessment is primarily the funding period 2021–2027. However, the subsequent period within which all projects funded under this programme are expected to be completed, i.e. by 2029, is also taken into account.

The programme defines potential activities in a broad manner, hence only a qualitative assessment is possible. Potential impacts on the environment will depend on the precise





nature and scope of projects to be funded, as well as on external factors. However, it should be noted that the programme has a limited budget and does not aim to support heavy investments. Instead, it focuses on small-scale investments and intangible or 'soft' actions (studies and research, know-how exchange, etc.).

Throughout the assessment process the programme managing authority, the programming team and the Strategic Environmental Assessment experts exchanged information continuously in order to improve the programme and eliminate possible sources of negative environmental impacts, as well as to enhance provisions and activities protecting the environment.

Environmental status quo

The cross-border region faces significant challenges with regard to preserving its rich biodiversity. There is thus an urgent need to improve the conservation status of habitat types and species. Expanding afforestation, forest regeneration and sustainable forest management remain necessary, especially amid growing pressure arising from climate change. Further efforts are also needed with regard to public awareness of biodiversity.

The risk of climate change impact and extreme weather events such as floods is relatively high, and the situation is expected to become worrying in the coming years.

Regarding water supply and wastewater management, some minor gaps are still to be tackled, especially the public sewerage network in some areas of Vas and Zala counties in Hungary. Significant improvements are also needed with regard to the chemical and ecological status of water bodies in the cross-border region.

On waste management and the circular economy, Austria has one of the highest recycling rates in Europe, while Hungary is still at an early stage, with landfill being the main destination for municipal waste. However, recent years have seen increasing awareness of this issue in the Hungarian regions.

Land consumption and soil sealing are still at high levels, especially in Austria. On air pollution, reducing emissions from the transport sector remains a key challenge for the programme area. Traffic is also a dominant source of noise pollution, mainly in metropolitan areas.

Considering future developments such as transport and other infrastructure, it is essential to protect and preserve cultural heritage and natural landscape in the region. This should be given high priority in tourism-related development and functional improvement projects.

Potential environmental impacts of the AT–HU programme

The programme affects the most important environmental issues of the cross-border region in a positive way. Negative impacts are expected to be negligible and indirect, since the programme focuses mainly on 'soft' actions.

Planned activities under **priority 1 "A green and resilient border region"** have a clear focus on the environment. With the highest programme budget allocation (42% of the budget), activities implemented under this priority are expected to have a significant positive impact on a number of environmental issues by focusing on climate change adaptation





and mitigation, water management, and the protection and preservation of nature and biodiversity.

However, some small-scale interventions related to the implementation of new technologies, green infrastructure or water management could have some short-term and reversible impacts on biodiversity, water, landscape and soil. Nevertheless, the potential negative impact of these activities is expected to be limited.

Planned activities under **priority 2 “A better-connected border region”** focus on accessibility and particularly on promoting sustainable national, regional and local mobility in the region.

Depending on the scope and nature of the intervention, some small-scale infrastructure investments and increased cross-border mobility could have a negative impact in the form of increases in land take, higher pressure on habitats and cultural heritage sites, and additional impact through noise pollution in sensitive areas.

Environmental impact assessments and the introduction of project selection criteria during the programme implementation are expected to serve as gatekeepers in the event of unforeseen negative impacts.

Planned activities under **priority 3 “A competent border region”**, which contribute to improving access to inclusive and quality services in education, training and lifelong learning, are considered to be largely neutral or positive to the environment.

On the other hand, activities focused on sustainable tourism could have some negative impacts as a result of small-scale infrastructure development projects and increased numbers of tourists. While a detailed assessment of possible impacts on specific areas cannot be made here, potential negative impacts could be expected, particularly on landscape, cultural heritage, biodiversity, water and air. These impacts should be taken into account by strict project selection criteria.

Planned activities under **priority 4 “An integrated border region”** are of a very “soft” nature and no negative impacts are to be expected. These activities should aim to further enhance the positive effects of the programme on the environment through more effective and sustainable cross-border cooperation in the cross-border region, especially between public authorities.

Main results and recommendations

The Interreg Programme AT–HU is strategic in nature, so this assessment focuses on a qualitative description of possible impacts.

Most of the planned programme activities will have positive impacts on the relevant environmental issues, and significant negative impacts are not to be expected.

To mitigate potential minor negative impacts, environmental project selection criteria and monitoring measures will be developed in line with the specific priorities and objectives of the programme and the existing monitoring system. In addition, measures for efficient environmental monitoring at project level will be included in the next draft of the environmental report.





Strategic Environmental Assessment consultation process

The SEA Directive says that the citizens and authorities who are likely to be concerned with the environmental effects of the Interreg Programme AT–HU shall be consulted on the environmental report.

The environmental report as well as this non-technical summary and the draft programme document are therefore made available to the public and authorities in both countries in order to give them the opportunity to comment.

All comments and opinions received during the public consultation will be documented, integrated in the environmental report, and commented on by the SEA experts.

As a final step, the environmental report will be revised and recommendations will be forwarded to the programme managing authority so that the programme can be revised appropriately and any necessary environmental protection provisions integrated into the implementing provisions.





1 INTRODUCTION

1.1 Background

The preparation of the environmental report is a key step of the Strategic Environmental Assessment (SEA). The SEA aims to ensure that environmental issues are considered and integrated into the programming of the Interreg Programme Austria–Hungary 2021–2027, in accordance with Directive 2001/42/EC¹ of the European Parliament and the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (the SEA Directive).

The objective of this Directive is to provide a high level of protection for the environment and to contribute to the integration of environmental considerations into the preparation and adoption of certain plans and programmes with a view to promoting sustainable development.

The environmental report for the Interreg Programme AT–HU 2021–2027 is based on the programme document (draft of 8 July 2021) and has been drafted alongside the development of the programme. Changes in the draft programme will be considered in the final draft of the environmental report.

1.2 Aim and legal basis of the SEA

The Strategic Environmental Assessment (SEA) is an in-process examination of environmental effects that aims to ensure integration of environmental concerns at an early stage, such as during the preparation of plans and programmes.

The SEA is conducted in accordance with EU Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (the SEA Directive). The Directive emphasises a number of environmental issues² and the need to assess the impact on those issues of plans and programmes that are likely to have significant effects on the environment.

The Strategic Environmental Assessment shall comprise the determination of the scope of the environmental report and its preparation (scoping report), preparation of the environmental report, consultation of relevant authorities and the public, presentation of potential monitoring measures and preparation of a statement summarising how environmental consideration have been integrated into the programme.

Pursuant to Article 5 of the SEA Directive, an environmental report shall be prepared in which the likely significant environmental effects of implementing the programme and reasonable alternatives – taking into account the objectives and the geographical scope of the programme – are identified, described and evaluated.

The environmental report shall include the information as specified in Annex 1 of the Directive.³ In accordance with the SEA Directive, relevant authorities and the public must be consulted on the environmental report.

¹ Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment.

² Directive 2001/42/EC Annex I (f).

³ Directive 2001/42/EC, Articles 5 and 8 and Annex I.





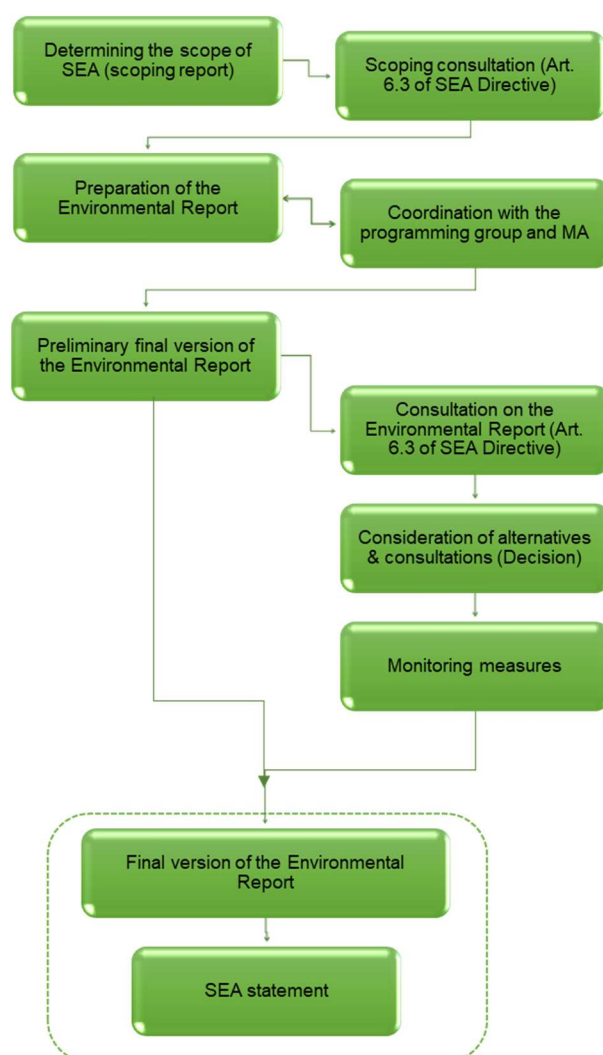
This first draft of the environmental report is based on:

- the SEA Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment;
- Regulation (EU) 2021/1058 of 24 June 2021 on the European Regional Development Fund and on the Cohesion Fund;
- Regulation (EU) 2021/1059 of 24 June 2021 on specific provisions for the European territorial cooperation goal (Interreg) supported by the European Regional Development Fund and external financing instruments;
- the programme document of the Interreg Programme Austria–Hungary 2021–2027 (draft of 8 July 2021).

1.3 SEA process

The Strategic Environmental Assessment (SEA) of the Interreg Programme AT–HU for the funding period 2021–2027 is being carried out in the following steps (Figure 1):

Figure 1: SEA process



Source: M&E Factory, 2021



1.4 Methodology

The environmental report has been prepared taking into consideration the environmental issues identified and the assessment of the impact of the programme on these issues.

The assessment process focuses on the following question:

"How is the situation of the relevant environmental issues in the programme area affected if the actions of the Interreg Programme AT–HU are implemented for the funding period 2021–2027, compared to non-implementation of the programme (the 'zero scenario')?"

1.4.1 Identification of the environmental issues

The categories of environmental issues are defined in accordance with Annex 1 of the SEA Directive. These categories are conceptually simple but from a scientific point of view they are very extensive, and characterised by numerous interactions and dependencies.

Table 1: SEA environmental issues

Environmental issues	Reference to the SEA Directive ¹
Biodiversity	Annex 1 (f) "Biodiversity, fauna, flora"
Soil	Annex 1 (f) "Soil"
Water	Annex 1 (f) "Water"
Climate	Annex 1 (f) "Climatic factors"
Air	Annex 1 (f) "Air"
Landscape	Annex 1 (f) "Landscape"
Human health/Population	Annex 1 (f) "Population, human health"
Cultural heritage and material assets	Annex 1 (f) "Material assets, cultural heritage including architectural and archaeological heritage"
Interactions between the abovementioned issues	Annex 1 (f) "...and the interrelationship between the above factors"

Source: SEA Directive

1.4.2 Methodology and structure of the environmental report

Table 2 provides an overview of the individual chapters of the environmental report and the relationship between the assessment methods.

Table 2: Overview of the environmental report and relevant methods

Environmental report structure in accordance with the SEA Directive	Description of the content	Relevant method and source
Non-technical summary of the SEA report	Preparation of a generally understandable non-technical summary which can be used as a stand-alone document for the purpose of communication and public participation	Derived from the entire text
1. Introduction	Short presentation of the SEA process and legal frame, methodology and difficulties encountered when compiling the information for the environmental report	Derived from the entire text; See also the SEA Directive





2. Short presentation of the programme	A brief outline of the content and key objectives of the Interreg Programme AT–HU 2021–2027 and its relationship with other relevant programmes and macro-regional strategies	See the programme document (draft of 8 July 2021)
3. Environmental legislation and objectives	<p>Creation of a catalogue in tabular form on environmental issues, relevant references and key questions to be answered in the course of the assessment.</p> <ul style="list-style-type: none"> Description of environmental characteristics of the areas likely to be significantly affected, and any existing environmental problems which are relevant to the programme Presentation of the environmental protection objectives relevant to the programme and their consideration 	<p>See Table 4: Relevant environmental objectives and programme context;</p> <p>See also the programme document (draft of 8 July 2021) and the socio-economic analysis</p>
4. Environmental status quo	Presentation of the current situation and its likely development if the programme is not implemented (the zero scenario)	See Table 6 Fehler! Verweisquelle konnte nicht gefunden werden.: SEA environmental issues
5. Assessment of the environmental impact	<p>Description of the likely significant impacts on the environment and the interrelationship between factors:</p> <ul style="list-style-type: none"> Creation of a 'relevance matrix' to identify the relevant relationships between programme activities and the environmental issues concerned. Creation of an "impact matrix" to assess the impacts of the programme activities on the environmental issues concerned Description of the measures planned to prevent, reduce and, as far as possible, offset significant negative environmental impacts as well as to reinforce positive impacts 	<p>See:</p> <p>Table 21: Relevance matrix</p> <p>Table 23: Impact matrix</p> <p>Section 5.3: Environmental impact per type of action</p>
	A brief description of the reasons for selecting the alternatives examined and a description of how the environmental assessment was carried out.	Derived from the text
Monitoring provisions	Presentation of the planned monitoring measures	Chapter 6: MONITORING PROVISIONS
References	List of sources and annexes	Derived from the text.
Consultation documentation	Summary of the comments received during the consultation process	Public consultation 'fiche contradictoire' (to be drafted after the public consultation)





1.5 Description of the obstacles encountered

The key obstacles encountered during the preparation of the Strategic Environmental Assessment (SEA) for the Interreg Programme AT–HU 2021–2027 mainly related to the assessment of potential environmental impacts of the programme.

- The programme defines planned actions in a broad manner, so only a qualitative assessment is possible. Qualitative assessment followed by proactive involvement during the preparation of the programme document provide the best solution for safeguarding environmental interests.
- In addition, it is challenging to forecast with a high level of accuracy all the impacts arising from individual projects in specific areas. However, it should be noted that as an Interreg cooperation programme, the Interreg Programme AT–HU 2021–2027 has a limited budget and does not aim to support heavy investments. Instead, it focuses on small-scale investments and intangible or ‘soft’ actions (studies and research, networking, know-how exchange, etc.).
- CBC programmes are applicant- and project-driven, i.e. the programme objectives are reached through the submission of proposals by eligible applicants. An important part of the assessment of environmental impacts is thus shifted to the project level. The main task of the SEA is to act as a gatekeeper, pointing out the elements of the IP that could lead to projects that might have positive or negative impacts on the environment in order to enhance or mitigate them, respectively.

To address these obstacles to the largest extent possible and provide a sound judgement on potential environmental impacts of the programme, various methods were used including: desk research from relevant studies and reports; similar actions implemented during the programming period 2014–2020; the previous SEA report and evaluation report; and direct input from the programming group and experts. In addition, monitoring measures will be proposed in the final environmental report; these measures will help the programme managing authority to detect, prevent or mitigate potential negative environmental impacts at an early state, and to enhance any positive impacts.





2 SHORT PRESENTATION OF THE PROGRAMME

2.1 Legal basis

The conceptual orientation of the Interreg Programme AT–HU 2021–2027 follows that of the ERDF's European Territorial Cooperation (Interreg), which in turn is a major priority of Union cohesion policy, with a view to fostering cooperation between Member States and their regions (Interreg Regulation, 2021).

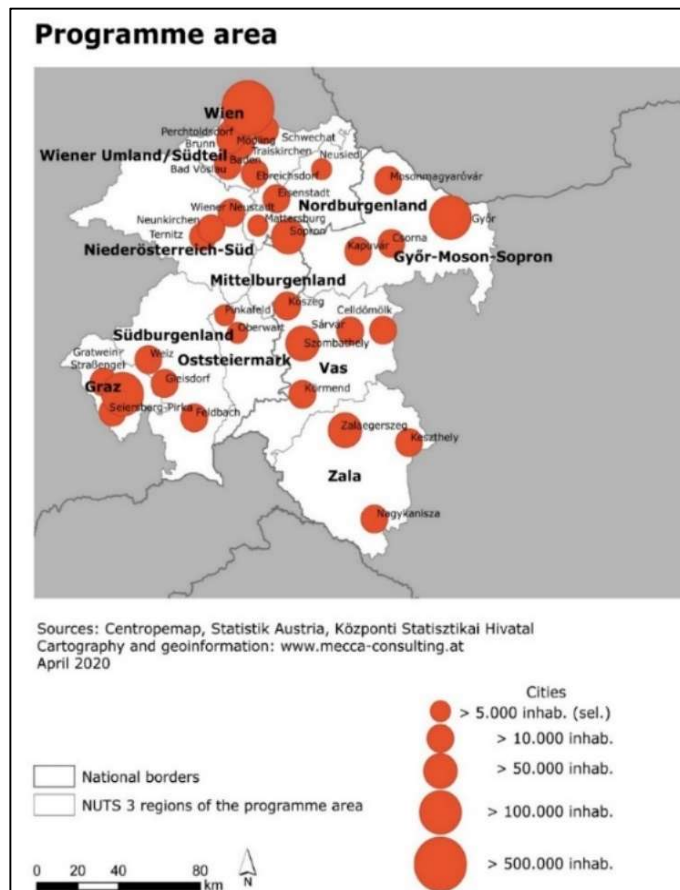
The Interreg Programme AT–HU aims to tackle common challenges identified in the cross-border region and to strengthen cooperation in selected areas linked to the EU priorities. As part of the programme preparation, this Strategic Environmental Assessment aims to ensure that environmental concerns are integrated into the programme. The SEA Directive emphasises a number of **environmental issues** and the need to assess the likely effect of the programme on those issues.

2.2 Structure and intervention logic of the programme

The subject of the assessment is the Interreg Programme AT–HU 2021–2027. This version of the environmental report is based on the draft programme of 8 July 2021. The EU's earmarked contribution for this programme is 49 561 200 EUR, while the total programme budget (including national contributions) is yet to be decided.

Spatial frame

Map 1: Map of the programme area



Source: IP AT–HU 2021–2027 (draft programme July 2021)





The geographical area relevant to the analysis of environmental impact covers the following regions:

- **Austria:** NUTS 3 regions Nordburgenland, Mittelburgenland and Südburgenland (NUTS 2 Burgenland), Niederösterreich Süd, Wiener Umland/Südteil (parts of NUTS 2 Niederösterreich), Wien (NUTS 2), Graz and Oststeiermark (parts of NUTS 2 Steiermark)
- **Hungary:** Győr-Moson-Sopron, Vas and Zala (within NUTS 2 region Nyugat-Dunántúl, hereinafter referred as Western Transdanubia).

The effects of emissions relevant to climate change within the programming area must be viewed in a global context.

Temporal frame

The time frame of the assessment is primarily the funding period 2021–2027. However, the subsequent period within which all projects funded under this programme are expected to be completed, i.e. by 2029, is also taken into account.

Policy and specific objectives

In compliance with the policy and specific objectives of the cohesion policy for the funding period 2021–2027, the AT–HU programme focuses on the following priorities:

- **PO2: “A greener, low-carbon Europe...”** by:
 - SO iv: promoting climate change adaptation and disaster risk prevention and resilience, taking into account ecosystem-based approaches;
 - SO v: promoting access to water and sustainable water management;
 - SO vii: enhancing protection and preservation of nature, biodiversity and green infrastructure, including in urban areas, and reducing all forms of pollution.
- **PO3: “A more connected Europe by enhancing mobility”** by:
 - SO iii: developing and enhancing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross-border mobility.
- **PO4: “A more social and inclusive Europe...”** by:
 - SO ii: improving equal access to inclusive and quality services in education, training and lifelong learning through developing accessible infrastructure...;
 - SO vi: enhancing the role of culture and sustainable tourism in economic development, social inclusion and social innovation.
- **ISO 1: “A better cooperation governance”** by:
 - b): enhancing 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.





Table 3 gives an overview of the selected objectives and planned actions.

Table 3: Planned actions, Interreg Programme AT–HU 2021–2027 (draft of 8 July 2021)

Policy objective (PO)	Specific objective (SO)	Planned actions	Possible output and result indicators
PO2: A greener, low-carbon Europe...	iv) promoting climate change adaptation and disaster risk prevention and resilience, taking into account ecosystem-based approaches	1.1 Cross-border research as well as data collection and exchange to improve know-how and preparedness towards climate change impacts	RCO81: Participations in joint actions across borders RCR85: Participations in joint actions across borders after project completion
		1.2 Developing cross-border strategies, management and action plans addressing climate change impact, risks and natural hazards in the border region	RCO116: Jointly developed solutions RCR104: Solutions taken up or up-scaled by organisations
		1.3 Implementing actions including small-scale investments in climate change adaptation and mitigation measures	RCO116: Jointly developed solutions RCR104: Solutions taken up or up-scaled by organisations
		1.4 Awareness raising on climate change adaptation and mitigation, especially on local level	RCO116: Jointly developed solutions RCR104: Solutions taken up or up-scaled by organisations
	v) promoting access to water and sustainable water management	2.1. Data collection, monitoring and analysis as well as (interdisciplinary) know-how exchange to improve the knowledge on water quality and ecology, on sustainable water management as well as on flood hazards	RCO116: Jointly developed solutions
		2.2 Developing strategies and action plans for a more sustainable water management in the border region	RCO116: Jointly developed solutions
		2.3 Implementing actions including small-scale investments promoting the sustainable water management and sustainable use of water resources	RCO116: Jointly developed solutions RCR104: Solutions taken up or up-scaled by organisations RCO81: Participations in joint actions across borders RCR85: Participations in joint actions across borders after project completion
	vii) enhancing protection and preservation of nature, biodiversity	3.1. Data collection and research as well as (interdisciplinary) know-how exchange to gain better knowledge about the region's ecological status and threats	RCO116: Jointly developed solutions RCR104: Solutions taken up or up-scaled by organisations





	sity, and green infrastructure, including in urban areas, and reducing all forms of pollution	3.2 Developing strategies and action plans to enable joint protection and preservation approaches in the cross-border region	RCO116: Jointly developed solutions RCR104: Solutions taken up or up-scaled by organisations
		3.3 Implementing actions including small-scale investments that contribute to protecting nature or reducing pollution	RCO116: Jointly developed solutions RCR104: Solutions taken up or up-scaled by organisations
		3.4 Awareness raising activities on the need of nature protection and reducing pollution at local and regional level	RCO81: Participations in joint actions across borders RCR85: Participations in joint actions across borders after project completion
PO3: A more connected Europe by enhancing mobility	iii) developing and enhancing sustainable, climate resilient, intelligent and inter-modal national, regional and local mobility, including improved access to TEN-T and cross-border mobility	4.1 Cross-border data collection and know-how exchange on cross-border traffic patterns and the mobility behaviour of the population in the programme region	RCO116: Jointly developed solutions RCR104: Solutions taken up or up-scaled by organisations
		4.2 Developing strategies and action plans aiming at a better organisation and link-ing of different modes of sustainable transport	RCO116: Jointly developed solutions RCR104: Solutions taken up or up-scaled by organisations
		4.3. Implementing actions including small scale investments to better connect re-gional and local public transport and cycling infrastructure and to enhance the sustainability, multimodality and safety of cross-border mobility	RCO81 Participations in joint actions across borders RCR85 Participations in joint actions across borders after project completion
PO4: A more social and inclusive Europe	ii) improving equal access to inclusive and quality services in education, training and lifelong learning through developing accessible infrastructure...	5.1. Cross-border research and data collection as well as developing strategies to improve coordinated decision making on education and training issues across the border	RCO116: Jointly developed solutions RCR104: Solutions taken up or up-scaled by organisations
		5.2. Implementing actions in cross-border education and training	RCO116: Jointly developed solutions RCR104: Solutions taken up or up-scaled by organisations RCO81: Participations in joint actions across borders RCR85: Participations in joint actions across borders after project completion
		5.3. Implementing joint training actions focusing on language- and intercultural aspects as well as labour-market needs.	RCO85: Participations in joint training schemes RCR81: Completion of joint training schemes
	vi) enhancing the role of culture and sustainable tourism in economic	6.1 Cross-border data collection and know-how exchange in the	RCO116: Jointly developed solutions RCR104: Solutions taken up or up-scaled by organisations





	development, social inclusion and social innovation	field of tourism and culture to better understand the cross-border tourism landscape and potential	
		6.2. Developing cross-border strategies and action plans to allow a better strategic embedment of projects addressing culture and tourism	RCO116: Jointly developed solutions RCR104: Solutions taken up or up-scaled by organisations
		6.3. Implementing actions including small-scale infrastructure developments for sustainable culture and tourism development in the cross-border region	RCO116: Jointly developed solutions RCR104: Solutions taken up or up-scaled by organisations RCO81: Participations in joint actions across borders RCR85: Participations in joint actions across borders after project completion
		6.4. Implementing thematic trainings and skill development of stakeholders in the culture and tourism sector	RCO85: Participations in joint training schemes RCR81: Completion of joint training schemes
ISO 1: Interreg-specific objective 'a better cooperation governance'	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	7.1 Elaborating monitoring and data exchange systems to improve cross-border know how exchange and decision making	RCO81 Participations in joint actions across borders RCR85 Participations in joint actions across borders after project completion
		7.2 Developing strategic frameworks among public organisations in all relevant fields to address upcoming challenges of the border region	RCO81 Participations in joint actions across borders
		7.3 Implementing joint solutions to improve cross-border governance and reduce cross-border obstacles	RCO81 Participations in joint actions across borders RCR85 Participations in joint actions across borders after project completion
		7.4 Developing skills as well as awareness raising aiming at a better cross-border cooperation	RCO81 Participations in joint actions across borders RCR85 Participations in joint actions across borders after project completion

Source: IP AT–HU 2021–2027 (draft programme of 8 July 2021)





2.3 Connections to other programmes and instruments

For the cross-border region one macro-regional strategy is relevant: the EU Macro-regional Strategy for the Danube Region (EUSDR) and its 2020 Action Plan. There are a number of priority areas in which the AT-HU programme 2021–2027 could contribute through its actions – especially with regard to environmental issues – to strengthen convergence to the EUSDR and its Action Plan.

Some of these priority areas include PA1a “Waterway mobility”, PA1b “Rail, road-air mobility”, PA3 “Culture and tourism”, PA4 “Water quality”, PA5 “Environmental risks”, PA6 “Biodiversity, landscapes and the quality of air and soils”, PA7 “Knowledge society”, PA8 “Competitiveness of enterprises”, PA9 “People and skills” and PA10 “Institutional capacity and cooperation” action 2.

In these areas the actions of the AT-HU programme 2021–2027 will contribute to the development and execution of risk management plans, strengthen disaster prevention and preparedness among governmental and non-governmental organisations, anticipate regional and local impacts of climate change, improve the management of Natura 2000 sites and other protected areas, halt the deterioration in the status of species and habitats, reduce the introductions and spread of invasive alien species (IAS) in the Danube region, and maintain and restore green infrastructure elements.

The actions may also contribute to new sustainable solutions to change the mobility patterns of people in the border region, to intelligent traffic systems and increased road safety. The actions connected to the EUSDR PA3 should contribute to sustainable tourism and to promoting and protecting the cultural heritage of the border region.

In addition, all projects shall consider related strategies and action plans at regional, national and EU levels, focusing on fields such as biodiversity, climate change, water, tourism and mobility. They shall also use synergies with related initiatives and projects wherever possible, and take into account results from previous INTERREG AT-HU V-A projects and other EU programmes such as the Danube and Central Europe transnational Interreg programmes, especially in areas that concern environmental issues.





3 ENVIRONMENTAL LEGISLATION AND OBJECTIVES

3.1 Background

The Interreg Programme AT–HU 2021–2027 is subject to a number of legal references and strategies, including environmental objectives at three key levels:

- International level (e.g. Convention on Biological Diversity, Ramsar Convention, UN Framework Convention on Climate Change, etc.);
- EU level (e.g. Habitats Directive, Water Framework Directive, the European Green Deal, etc.), and
- National level (e.g. nature conservation laws at national and state/regional level, planning acts, etc.).

The relevant environmental objectives for the AT–HU programme are described in Table 4. The quantitative assessment of target achievements and the programme contribution seems to be difficult. Due to its limited scope, the SEA allows only a qualitative approach, i.e. the formulation of key questions deriving from the main objectives which should be answered in the course of the assessment.

Quantitative indicators, as proposed in the scoping report and presented in Table 6 , serve to describe the current state of the environment in the border region and to assess the development of trends that support the impact assessment in Chapter 5**Fehler! Verweisquelle konnte nicht gefunden werden.** and provide information on monitoring measures in Chapter 6.

The following section presents the main environmental protection objectives, legal references and indicative key questions for the environmental issues concerned.





3.2 Breakdown per environmental issue (SEA Directive, Annex I, lit.f)

Table 4: Relevant environmental objectives and programme context

Environmental issue	Relevant environmental objectives	References	Key guiding questions
Biodiversity	<p>Protect nature and restore degraded ecosystems</p> <p>Promote cooperation on trans-boundary wetlands, shared wetland systems and species</p> <p>Promote the protection and conservation of plant, wild animal and bird species.</p>	<p><u>International/EU</u></p> <p>Convention on Biological Diversity (CBD)</p> <p>Ramsar Convention</p> <p>European Green Deal (EU Biodiversity Strategy 2030)</p> <p>The 8th Environment Action Programme</p> <p>Habitats Directive 92/43/EEC</p> <p>Birds Directive 2009/147/EC</p> <p>EU Regulation on invasive alien species EU 1143/ 2014</p> <p><u>National</u></p> <p>AT: Biodiversity Strategy 2020+</p> <p>AT: National Park Strategy (Nationalpark-Strategie Österreich 2020+) (BMLFUW 2018) priority list for protection of habitats, plants and vertebrates (Naturschutzbund Österreich 2008)</p> <p>AT: Nature Conservation and Landscape Conservation Acts of the States (Länder): The Lower Austrian Nature Conservation Law Act 2000 (LGBl. 5500-11); Styria Nature Conservation Act 1976; Burgenland Nature Conservation and Landscape Care Law 1990; Vienna Nature Conservation Act (LGBl. 45/1998)</p> <p>AT: Federal and State Sectoral Plans⁴: the Austrian Forest Programme⁵; Lower Austria Forestry Implementation Law/ Lower Austria National Park Law; Styria Forest Protection Law</p>	<p>Does the programme have an impact on:</p> <ul style="list-style-type: none"> the conservation status of species found in Natura 2000 areas? compliance with protection obligations according to the Habitats Directive? reduction of risk levels in the Red List for threatened groups of species and biotopes? the conservation status of nature reserves/protected areas? habitats on the banks of waterways? sustainable management of forests and their biological diversity? population trends of breeding bird species? protection and conservation of wild animal species? preservation of the functionality of the soil, water balance, flora, fauna and climate through appropriate economic and social use of the space? public awareness of biodiversity?

⁴ As set out in the assignment of areas of competence in the Constitutional Act, the Austrian federal government is responsible for the national infrastructure and key resources (water, forests, mineral extraction) with respect to legislation and execution ("functional spatial planning").

⁵ Forstgesetz 1975StF BGBl. 440/1975 idF 56/2016/ Forest Act 1975StF BGBl. 440/1975 as amended 56/2016





		<p>AT: Law on supplementary regulation concerning trade of endangered species of wild flora and fauna, Wild Flora Protection Ordinance</p> <p>HU: 1995. LIII. Act on General Rules for the Protection of the Environment</p> <p>HU: 1995. LXXXI. Act promulgating the Convention on Biological Diversity</p> <p>HU: 275/2004. (X. 8.) Government Decree on areas of European Community importance for nature conservation purposes (Natura 2000 sites)</p> <p>HU: XXVIII of 1998 Act on the Protection and Welfare of Animals</p> <p>HU: 2009. XXXVII Act on Forest, Forest Protection and Forest Management</p> <p>HU: National Sustainable Development Framework Strategy</p> <p>HU: National Forest Strategy (2016-2030)</p>	
Soil	Sustainable securing or restoration of the performance and functionality of the soil, their its regenerative capacity and usability through economical, careful and sustainable management of soil resources	<p><u>International/EU</u></p> <p>The 2030 Agenda for Sustainable Development</p> <p>The Alpine Convention</p> <p>European Green Deal (EU Biodiversity Strategy 2030) Circular Economy Action Plan)</p> <p>The 8th Environment Action Programme</p> <p>Waste Framework Directive 2008/98/EC</p> <p>EU Soil Thematic Strategy</p> <p><u>National</u></p> <p>AT: Austrian Spatial Development Concept (ÖREK 2011)</p> <p>AT: Federal Waste Management Plan; State Waste Management Acts (Lower Austria Waste Management Act; Vienna Waste Management Act; Styria Waste Management Act; Burgenland Waste Management Act)</p>	<p>Does the programme have an impact on⁶:</p> <ul style="list-style-type: none"> • waste reduction or increase? • soil pollution? • exceeding the critical loads for nitrogen? • renatured and re-cultivated areas? • identified and remediated contaminated sites?

⁶ "Land use! is assessed under "Landscape".





		<p>AT: State Soil protection Acts: Lower Austria Soil Protection Act (LGBl. 6160-0); Burgenland Soil Protection Law</p> <p>HU: 1995. LIII. Act on General Rules for the Protection of the Environment</p> <p>HU: 2012 CLXXXV. Waste Act</p> <p>HU: 2007 CXXIX Act on the Protection of Soils</p>	
Water	<p>Preserve ground and surface waters from impairment; preserve their self-cleaning ability and dynamism; protect and develop their performance and functionality</p> <p>Achieve good chemical and quantitative status for ground-water bodies; achieve good chemical and ecological status for surface waters (for artificial or significantly modified surface waters, achieve good ecological potential)</p> <p>Provide preventive and active flood protection</p>	<p><u>International/EU</u></p> <p>Ramsar Convention</p> <p>UNECE Convention on the Protection and Use of Transboundary Water-courses</p> <p>The Alpine Convention</p> <p>The 2030 Agenda for Sustainable Development</p> <p>Water Framework Directive WFD 2000/60/EC</p> <p>Wastewater Directive 91/271/EEC</p> <p>Flood Risk Management Directive 2007/60/EC</p> <p>Nitrates Directive 91/676/EEC</p> <p>Groundwater Directive 2006/118/EC</p> <p><u>National</u></p> <p>AT: Water Rights Act (BGBl. Nr. 215/1959 i.d.g.F.), AT: National Flood Risk Management Plan of the Federal Ministry of Agriculture, Forestry, Environment and Water Management</p> <p>AT: Austrian Water Management Plan</p> <p>AT: Water Condition Monitoring Ordinance No. 479/2006 as amended No. 128/2019</p> <p>AT: Quality Target Ordinance Chemistry Groundwater - QZV Chemie GW, No. 98/2010, as amended</p> <p>AT: Quality Target Ordinance Chemical Surface Waters - QZV Chemie OG, No. 96/2006 as amended</p>	<p>Does the programme have an impact on:</p> <ul style="list-style-type: none"> the water quality under the Water Framework Directive? hydro morphology and the ecological status of the rivers? sustainable use of water resources? pollution in groundwater and surface water? flood protection in terms of the Flood Risk Management Directive?





		<p>AT: Quality Target Ordinance Ecology Surface Waters - QZV Ökologie OG), No. 99/2010 as amended</p> <p>HU: 1995 LVII. Act on Water Management</p> <p>HU: 220/2004 (VII. 21.) Government Decree on the rules for the protection of surface water quality</p> <p>HU:219/2004 (VII. 21.) Government Decree on the protection of groundwater</p> <p>HU: National Water Strategy (Jenő Kvassay Plan), (2017-2030)</p> <p>HU: Government Decree No 27/2006 (7.11.2006) on the protection of waters against nitrate pollution from agricultural sources</p> <p>Treaty between the Republic of Austria and the Hungarian People's Republic on the Regulation of Water Management Issues in the Border Area Federal Law Gazette No. 225/1959</p>	
Climate	<p>Protect the climate by reducing anthropogenic greenhouse gases through the following instruments:</p> <p>Use of renewable energy and the economical and efficient use of energy,</p> <p>Adaptation to the effects of climate change,</p> <p>Promotion of climate resilience in natural and near-natural areas,</p> <p>Improvement of regional mobility by environmentally-friendly transport solutions emitting less CO2 and using less resources</p>	<p><u>International/EU</u></p> <p>United Nations Framework Convention on Climate Change (UNFCCC)/ Paris Agreement (COP 21)</p> <p>EU 2030 Climate- and Energy Framework</p> <p>European Green Deal 2019/640/EC; The EU Strategy on Adaptation to Climate Change 2021/82/EC</p> <p>Renewable Energy Directive 2009/28/EC</p> <p>EU Energy Efficiency Directive 2012/27/EU</p> <p><u>National</u></p> <p>AT: Mission 2030 – Austrian climate- and energy strategy; National Climate- and Energy Action Plan Austria 2030</p> <p>AT: Development Strategy 2030</p> <p>AT: Agenda 2030</p> <p>AT: Austria Long-term Strategy 2050</p> <p>AT: Cycling Master Plan 2015-2025</p> <p>AT: Urban Heat Island Strategy – City of Vienna</p>	<p>Does the programme have an impact on:</p> <ul style="list-style-type: none"> • anthropogenic CO2 emissions? • reduction of fossil energy demand? • promotion of the use of energy from renewable sources? • reduction of energy demand and emissions caused by traffic? • development of climate-resilient urban areas? • planning decisions and climate adaptation measures being implemented? • soil, water and groundwater management in terms of climate adaptation?





		<p>AT: Burgenland Climate & Energy Strategy 2050</p> <p>AT: Burgenland Cycling Master Plan⁷</p> <p>HU: Act on Climate Protection XLIV of 2020</p> <p>HU: National Energy and Climate Plan of Hungary</p> <p>HU: Act on Energy Efficiency 2015 LVII.</p> <p>HU: National Energy Strategy 2030</p>	
Air	Avoid the adverse effects from pollutant emissions and maintain the best possible air quality	<p><u>International/EU</u></p> <p>Air Convention and its long-term strategy</p> <p>Directive EU 2016/2284 on the Reduction of National Emissions of Certain Atmospheric Pollutants</p> <p>Directive 2008/50/EC on Ambient Air Quality and Cleaner Air and Directive 2004/107/EC</p> <p>Industrial Emissions Directive 2010/75/EC</p> <p><u>National</u></p> <p>AT: Air Pollution Control Act Nr. 115/1997 i.d.g.F (including State Acts such as Styria Air Pollution Control Act)</p> <p>AT: Austrian Emission Law BGBl. I Nr. 75/2018</p> <p>HU: 306/2010. (XII. 23.) Government Decree on air protection</p> <p>HU: Government Decree 14/2015. (II. 10.) on the conditions for carrying out activities related to fluorinated greenhouse gases and ozone-depleting substances</p>	<p>Does the programme have an impact on:</p> <ul style="list-style-type: none"> air pollutants created directly by traffic and the indirect increase in traffic volume (particulate matter, nitrous oxide, VOCs, etc.)? emissions of ozone precursors and ozone-depleting substances? preservation of good air quality and/or the improvement of air quality?
Landscape	Protect, maintain and develop the diversity, uniqueness and beauty as well as the recreational value of nature and landscape	<p><u>International/EU</u></p> <p>European Landscape Convention</p> <p><u>National</u></p> <p>AT: Spatial Development Concept (ÖREK 2011)</p>	<p>Does the programme have an impact on:</p> <ul style="list-style-type: none"> land use? landscape of high quality with recreation potential?

⁷The new transport strategy 2021 and the e-mobility strategy of the federal state of Burgenland are expected to be adopted before summer 2021.





		<p>AT: Spatial Development Strategies of the States (Länder)⁸/Spatial planning acts⁹, Lower Austria Spatial Planning Act 2014 (LGBl. 3/2015); Burgenland Spatial Planning Act 1969 (LGBl. Nr. 38/2015); Styrian Regional Planning Act 2010; Vienna updated urban development plan (STEP 025); Vienna Building Code (LGBl. 61/2020)</p> <p>AT: Austrian Federal Act for the Protection of Nature (LGBl. Nr. 22/1997); State (Länder) Nature Conservation and Landscape Conservation Acts</p> <p>HU: 2007 CXI. Act promulgating the European Landscape Convention, done at Florence in 20 October 2000</p> <p>HU: National Landscape Strategy (2017-2026)</p> <p>HU: Act CXXXIX of 2018 on Spatial Planning of Certain Priority Regions in Hungary</p> <p>HU: Act XXI 1996 on Regional Development and Spatial Planning</p>	the development of relevant areas in terms of sustainable, integrative spatial planning?
Human health/ population	<p>Protect people from noise and other harmful emissions</p> <p>Protect waters in terms of their recreational function for humans</p>	<p><u>International/EU</u></p> <p>Environmental Noise Directive 2002/49/EC</p> <p>Environmental Noise Guidelines for the European Region (WHO, 2018)</p> <p>European Green Deal</p> <p>Flood Risk Management Directive 2007/60/EC</p> <p><u>National</u></p> <p>AT: Federal Environmental Noise Protection Act (BGBl. I 60/2005)</p> <p>AT: Strategy for Sustainable Development of the Federal Government and Federal Provinces (ÖSTRAT)</p> <p>AT: Federal Environmental Noise Protection Ordinance 144/2006; State Acts on Environmental Noise</p>	<p>Does the programme have an impact on:</p> <ul style="list-style-type: none"> the level of noise pollution the population is exposed to? emissions hazardous to health (fine dust, ozone precursors, etc.)? flood protection in terms of the Floods Directive? preservation of settlements and the safeguarding of jobs? improving and promoting sustainable food systems? preservation of recreational areas?

⁸ oerok.gv.at

⁹ Spatial planning in Austria is a federal state-driven activity, based on spatial planning acts that are similar between provinces but may differ considerably in detail. The hierarchical, top-down system normally consists of: State development strategies (Landesraumordnungsprogramm), regional plans (Regionales Raumordnungsprogramm) and sectoral plans (Raumordnungsprogramme für Sachbereiche) both on federal state and regional level. Local development strategies (örtliches Entwicklungskonzept), preparatory land-use plans (Flächenwidmungsplan) and building schemes (Bebauungsplan) are at the municipal level ([Introduction to the Austrian spatial planning system \(rainman-toolbox.eu\)](#))





		<p>AT: Air Pollution Control Act Nr. 115/1997 i.d.g.F; State Acts such as Styria Air Pollution Control Act</p> <p>AT: Water Rights Act (BGBl. Nr. 215/1959 i.d.g.F.), and other references listed under "Water" section</p> <p>AT: Cycling Master Plan 2015-2025</p> <p>AT: Austrian Action Plan on Resource Efficiency</p> <p>HU: Government Decree 284/2007 (X.29.) on certain rules for protection against environmental noise and vibration</p> <p>HU: EüM Decree 13/2017 (VI. 12.) on public assistance requirements for waste falling within the scope of public waste management services</p> <p>HU: Government Decree 14/2015. (II. 10.) on the conditions for carrying out activities related to fluorinated greenhouse gases and ozone-depleting substances</p>	
Cultural heritage and material assets	Protection and preservation of monuments, material assets and, underwater cultural heritage, as well as protection and design of historically grown cultural landscapes	<p><u>International/EU</u></p> <p>UNESCO World Heritage Convention</p> <p>European Cultural Heritage Strategy for the 21st Century</p> <p>European Framework for Action on Cultural Heritage; Resolution 2001/C 73/04 on architectural quality in urban and rural environments</p> <p><u>National</u></p> <p>AT: Austrian Heritage Protection Law (Monument Protection Act BGBl. Nr. 533/1923; Monument Protection Act 2000)</p> <p>AT: Masterplan on Tourism</p> <p>HU: National Cultural Heritage Protection Act 2001. LXIV</p> <p>HU: National Tourism Development Strategy 2030</p>	<p>Does the programme have an impact on:</p> <ul style="list-style-type: none"> • preservation, protection and maintenance of cultural heritage? • preservation of the diversity of the historically grown cultural landscape?

Source: M&E Factory 2021





4 ENVIRONMENTAL STATUS QUO

4.1 Background

This chapter presents the environmental issues as listed in Annex I of the SEA Directive, describing the current state of the environment and the environmental characteristics relevant to the Interreg Programme AT–HU, with special emphasis on those issues that are likely to be significantly affected.

The current trend development of environmental issues is assessed based on the available data and relevant indicators following the assessment scale presented in Table 5. A positive trend development does not necessarily presume a positive environmental status and vice versa. The assessment scale “no assessment possible” indicates that no trend assessment of the indicator can be made for the temporal frame proposed (e.g. by 2029).

Table 5: Trend scale for the assessment of the current status

Column 1	Column 2
+	Positive development (<i>increasing</i>)
+/-	Positive and negative development (<i>increasing and/or decreasing</i>)
-	Negative development (<i>decreasing</i>)
0	No change
=	No assessment possible

The current state of the environmental issues and trend development as well as its likely development if the programme is not implemented (the zero scenario) are described and assessed on the basis of the indicators and references listed in Table 6.

Table 6: SEA environmental issues

Environmental issues	Indicators	Trend assessment in zero scenario	Data sources	
			AT	HU
Biodiversity	Natura 2000 protected areas	0/+	Umweltbundesamt ¹⁰ ; National Parks Austria, Offices of the State Governments ¹¹	Hungarian Central Statistical/STADAT, The Environmental Implementation Review HU, European Commission
	Conservation status of habitat types and species (according to the Habitats Directive)	-	European Environment Agency, Umweltbundesamt	European Environment Agency
	Extent of the biotope network	0/-	Umweltbundesamt Offices of State Governments	Research Institute of Ecology and Botany of the Hungarian Academy of Sciences

¹⁰ EN: Environment Agency Austria

¹¹ www.burgenland.at/ www.verwaltung.steiermark.at/ www.wien.gv.at/ www.noel.gv.at/noel/index.html



	Nature conservation areas	0/+	Umweltbundesamt; Offices of the State Governments	Hungarian Central Statistical Office/STADAT ¹²
	Farmland bird index	0/-	Teufelbauer & Seaman 2020, Environment Agency, Eurostat, OECD, Birdlife	Eurostat; OECD database 2021 ¹³
	Forest condition	-	Federal Forest Research Center/ Bundesforschungszentrum Wald (BFW)	Hungarian Central Statistical Office/STADAT OECD Environmental Performance Reviews Hungary ¹⁴
	Public awareness of biodiversity	+/-	EU Special Eurobarometer 481	EC Special Eurobarometer 481
Soil	Municipal waste	+	Regional statistics BMK	Hungarian Central Statistical Office/STADAT Eurostat
	Soil erosion	+	Strauss P. et al 2020	Ministry of Agriculture Assessment of soil, National studies (László Pásztor, István Waltner, Csaba Centeri. 2018), OVF 2020
	Soil quality (average)	+/-	Umweltbundesamt Federal Ministry of Agriculture, Regions and Tourism/BMLRT	European Environment Agency; Hungarian Central Statistical Office
	Nitrogen surpluses in agricultural areas	-	Umweltbundesamt	European Environment Agency; Hungarian Central Statistical Office/STADAT
Water	Groundwater chemical status according to WFD	-	Federal Ministry of Agriculture, Regions and Tourism/BMLRT Umweltbundesamt	OVF (National Directorate General for Water Management)
	Groundwater quantitative status according to WFD	0/-	Federal Ministry of Agriculture, Regions and Tourism/BMLRT, Umweltbundesamt	OVF (National Directorate General for Water Management)
	Ecological status or potential of surface water according to WFD	-	Federal Ministry of Agriculture, Regions and Tourism/BMLRT, Umweltbundesamt The Environmental Implementation Review AT, European Commission	OVF (National Directorate General for Water Management)
	Chemical status of surface water	-	Federal Ministry of Agriculture, Regions and Tourism/BMLRT, Umweltbundesamt, The Environmental Implementation Review AT, European Commission	OVF (National Directorate General for Water Management)
Climate	Effects of climate change on	+	Österreichische Bundesforste Global 2000 Umweltbundesamt	National Meteorological Service Publications

¹² www.ksh.hu/stadat_files/kor/en/kor0060.html
¹³ stats.oecd.org/Index; eurostat.ec.europa.eu
¹⁴ <https://www.oecd.org/environment/country-reviews/highlights-hungary-2018-performance-review.pdf>
www.ksh.hu/stadat_files/kor/hu/kor0009.html




	vegetation development			
	Greenhouse gas emissions per capita (tonnes of CO ₂ equivalent per capita)	+/-	Umweltbundesamt, Bundesländer Luftschadstoff-Inventur, Yearbook of federal states	Eurostat, The Environmental Implementation Review HU, European Commission
	Final energy consumption in households per capita (Kilogram kilogram of oil equivalent)	+	Statistik Austria Eurostat	Hungarian Central Statistical Office/STADAT Eurostat
	Energy dependence (%)	+/-	Statistik Austria, Eurostat, European Commission	Hungarian Central Statistical Office, Eurostat, European Commission
	Share of renewable energy in gross final energy consumption (%)	+	Statistik Austria	Hungarian Central Statistical Office/STADAT
	Impacts of extreme weather and climate-related events	+	Federal Ministry of Agriculture, Regions and Tourism/BMLRT, Umweltbundesamt Steininger et al., 2015, 2016	World Bank, European Environment Agency
	Circular material use rate (%)	+	Environmental implementation review AT, 2019	Hungarian Central Statistical Office/STADAT; Environmental implementation review HU, 2019/ Economic journal article 2021.03
	Number of secured areas of settlement climatic importance	=	Umweltbundesamt, Federal Ministry of Agriculture, Regions and Tourism/BMLRT	Hungarian Central Statistical Office/STADAT
	Private investments, jobs and gross value added related to circular economy sectors	+	Statistik Austria Regional statistics	Hungarian Central Statistical Office/STADAT National documents/ Action plan on circular economy
Air	Air quality (particulate matter PM ₁₀ , PM _{2.5})	-	Umweltbundesamt	Environmental Implementation Review HU
	Air quality (nitrogen dioxide)	+/-	Umweltbundesamt	Environmental Implementation Review HU
	Pollutant emissions from transport	+/-	Umweltbundesamt	Environmental Implementation Review HU
	PCB emissions per capita	-	Umweltbundesamt	European Environment Agency
	Shares of energy from renewable sources used in transport	+	Umweltbundesamt	European Environment Agency
Landscape	Land consumption, soil sealing	+	Umweltbundesamt	Ministry of Agriculture, OECD 2017





	Light pollution	+	Royal Astronomical Society/Kuffner Observatory Association	lightpollutionmap.info
	Land take and land recultivation (as a share of the country's area)	+	Umweltbundesamt	Hungarian Central Statistical Office
	Landscape fragmentation pressure and trends	+	Umweltbundesamt	Ministry of Agriculture
	Urban sprawl	+	Umweltbundesamt	Hungarian Central Statistical Office
Human health/ population	Noise pollution	+	Statistik Austria; European Environment Agency	Regional noise map, Action plan; Strategic noise map European Environment Agency
	Increased traffic	+	Statistik Austria Spiegel 2019	Hungarian Central Statistical Office/STADAT, The Environmental Implementation Review HU, European Commission
	Use of renewable raw materials	+	Austrian Environment Agency	The Environmental Implementation Review HU, European Commission
	Use of fossil raw materials	0/-	Austrian Environment Agency	The Environmental Implementation Review HU, European Commission
	E-mobility/ Alternative mobility	+	Regional statistics BMLFUW/Ministry of Sustainability and Tourism	Hungarian Central Statistical Office/STADAT, Hungarian Public Roads report 2019; The Environmental Implementation Review HU, European Commission
	Public mobility	+	Statistik Austria Regional statistics	Hungarian Central Statistical Office, Hungarian Public Roads report 2019; The Environmental Implementation Review HU; European Commission
	Protection against flood hazards	0/+	Federal Ministry of Agriculture, Regions and Tourism/BMLRT Wasserinformationssystem, APCC	National Directorate General for Water Management, European Environment Agency
Cultural heritage and material assets	Historically shaped cultural landscapes (ha)	0	UNESCO, Bundesforste European Commission	National building register of protected real estate Regional authorities
	World heritage in danger (e.g. listed cultural sites at risk))	0/+	UNESCO; Umweltbundesamt	UNESCO, National building register of protected real estate; Regional authorities

Source: M&E factory 2021





4.2 Breakdown per environmental issue (SEA Directive, Annex I, lit.f)

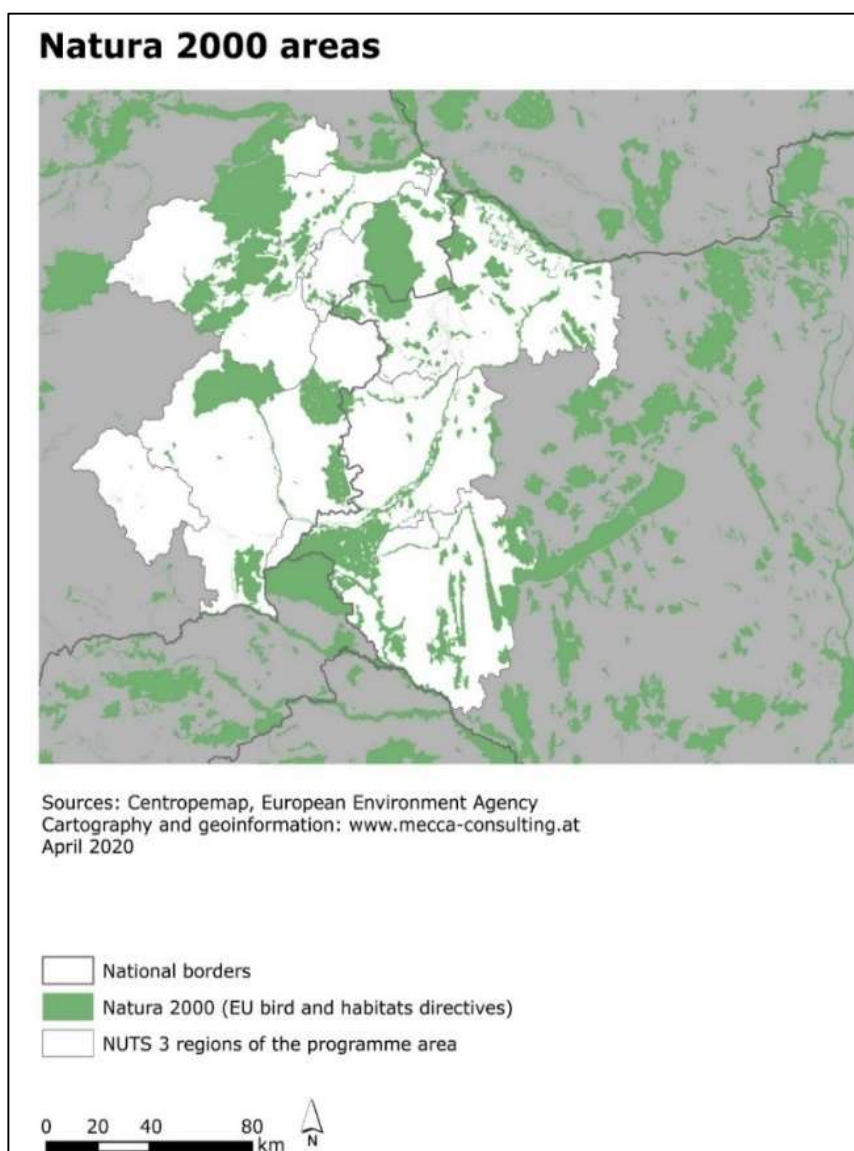
4.2.1 Biological diversity (biodiversity)

The cross-border region faces significant challenges with regard to preserving its rich biodiversity, including **habitat loss, climate change and increasing pollution**.

In **Austria**, the areas prescribed by nature conservation law occupy nearly 29% of the national territory (Umweltbundesamt 2021; 2019). Two of the six national parks are located in the programme area: Donau-Auen in Lower Austria and in Vienna, and Neusiedler See – Seewinkel in Burgenland. The National Park Strategy 2020+ has been developed to promote cooperation between the six national parks.

There are 15 Natura 2000 areas in Burgenland (from 13 in 2014), 61 areas in Styria (from 41 in 2014), 5 areas in Vienna (from 4 in 2014), while the number of Natura 2000 sites in Lower Austria remains at 36 (Map 1). Other types of nature protected areas are presented in Table 7.

Map 2: Natura 2000 areas in the AT-HU programme area



Source: Situation analysis of the Interreg Programme AT-HU 2021-2027




Table 7: Nature protected areas

Area type	Burgenland			Lower Austria			Styria			Vienna		
	No of areas	ha	% of state area	No of areas	ha	% of state area	No of areas	ha	% of state area	No of areas	ha	% of state area
National parks	1	9 645	2.4%	2 ¹⁵	8 410	0.4%	1 ¹⁶	12 118	0.7%	1	2 258	5.4%
Natura 2000	15	111 633	28.2%	36	441 710	23%	61 ¹⁷	n.a	n.a	5	5 542	13.3%
Nature reserves/Naturschutzgebiete	29	591	0.1%	72	14 500	0.8%	130	119 380	7,3%	1	2 258	5.4%
Protected landscape areas (Landschafts Schutzgebiete)	9	118 834	30%	29	416 790	22%	38	543 690	33%	12	9 536	23%
Nature parks	6	53 318	13,5%	20 ¹⁸	55 000	2.9%	7	183 000 ¹⁹	11%	-	-	-
Protected landscape parts (Geschützter Landschaftsteil)	1	24.8	~0%	-	-	-	-	-	-	2	58,8	0.1%
Geschützte Lebensräume	6	55	~0%	-	-	-	-	-	-	-	-	-
Ökologische Entwicklungsflächen	-	-	-	-	-	-	-	-	-	3	1.6	~0%
Protected biotopes (Geschützte Biotope)	-	-	-	-	-	-	-	-	-	3	16.8	~0%
Biosphere reserves	-	-	-	1	95 700	5%	1	13 000		1	9 900	24%
Ramsar areas ²⁰	3	45 312	11%	-	-	-	4	1 540	0.1%	1	915	2.2%

* Note: Protected areas can overlap partially or completely. The individual values of the protected area categories thus cannot be added up to give a total protected area

¹⁵ One of the two national parks in Lower Austria is partly located in the programme area (Danube-Auen; 7 342 ha or 0.38% of the state area)

¹⁶ Gesäuse National Park (12 118 ha) is located in the northern part of the Styria www.nationalparksaustria.at/de/nationalpark-gesaeuse

¹⁷ The total number of Natura 2000 areas in Styria, 20% of which are located in the programme area. In 2014, there were 41 sites (276 590 ha).

¹⁸ 4 Nature parks in Wiener Wald and 2 in Donauraum (Wüste Mannersdorf and Jauerling-Wachau) www.naturparke.at

¹⁹ www.naturparke.at/naturparke/steiermark/ in the programme area: Pöllauer Tal - 124 km² (Oststeiermark) and Almenland - 253 km² (Graz).

²⁰ www.umweltbundesamt.at/umweltthemen/naturschutz/schutzgebiete/sonstigeschutzgebiete





The conservation status of habitat types and species according to the Habitats Directive is considered mostly bad or poor over the period 2013–2018 (EEA assessments).

Nearly half of the biotope types are considered endangered or highly endangered, and 33 are threatened with complete extinction. Five biotope types are already extinct (Essl & Egger 2010). The situation is also worrying with regard to endangered plants. Over 60% of the ferns and flowering plants appear on Red Lists (including species in the programme area) and a similar situation is reported for other plants such as mosses and lichens. Among animal species, more than half of all amphibians and reptiles are critically endangered, as are nearly half of all fish and one-third of all birds and mammals.

Invasive alien species continue to put the local flora and fauna under pressure, especially in near-natural biotopes (Umweltbundesamt 2019a). 13 of the 37 invasive alien species included in the first list of IAS of Union concern have been observed in Austria.

The Farmland Bird Index has stabilised at around 60% since 2013, reaching 63.7% in 2019 (Teufelbauer & Seaman 2020). Nevertheless, more efforts are needed to protect native bird species.

The designation of protected areas has achieved some success. For example, some animal species that were extinct or endangered (e.g. wolf, lynx) are spreading again in Austria. However, an evaluation of the quality of the protected areas in all categories would serve as a basis for further development of management measures (Umweltbundesamt 2019a).

Climate change is increasingly having an impact on biodiversity. This is particularly visible in the high mountains and at higher altitudes in the low mountain ranges, since species in these habitats are limited in their ability to move to other areas.

Forest ecosystems' resilience to drought, extreme weather events and harmful organisms, and adaptability, seems to have reduced significantly (BFW 2016). A growing demand for energy and industrial raw materials may also be putting pressure on the forests. The Biomass Association estimates an additional expansion potential for biomass energy by 2030 (BMV & AEA 2017), of which 60% is forecast to come from wood-based energy sources and the rest from agriculture and waste management.

Increasing public awareness of biodiversity remains important. Based on the 2018 Eurobarometer 481 on "Attitudes of EU citizens on the issue of biodiversity", only half of respondents in Austria 'totally agree' that biodiversity and healthy nature are important for long-term economic development (the lowest rate in the EU) and 11% of them tend to disagree or totally disagree.

In Hungary, the Natura 2000 network is considered to be complete, with 525 areas covering 1 995 thousand ha). In 2018, Natura 2000 sites covered 21.44% of the national land area and management plans were in place for 325 sites (61.9% of the total). However, these plans are not compulsory under national legislation, which could raise doubts about their implementation.²¹

The two largest natural lakes are located in Western Transdanubia: Lake Balaton and Lake Fertő. Lake Fertő is the largest steppe lake in Central Europe. Three of the 10 national parks are located in the region (Fertő-Hanság Nemzeti, Őrségi Nemzeti and part of Balaton-felvidéki Nemzeti Park), occupying 19% of the total area of national parks in Hungary. 9% of the national

²¹ The directorates of national parks are responsible for managing the Natura 2000 sites and enforcing legislation, under the supervision of the Ministry of Agriculture.





landscape protection area and 5% of the national nature conservation area are also found in the region, along with the Natura 2000 sites (Table 8). The area of protected sites has not changed since 2013.

Table 8: Protected areas of national significance in hectares, 2019

	Győr Moson-Sopron (ha)	Vas (ha)	Zala (ha)	Western Trans- danubia region (ha)	As a share of the total protected ar- eas in Hungary (% per area)
National Park	23 564	42 689	23 295	89 548	19%
Landscape pro- tection region	22 368	4 609	1 904	28 881	9%
Nature conser- vation area	889	225	329	1 443	5%
Natural monu- ment	-	-	-	-	-
Total	46 821	47 523	25 528	119 872	14%

Source: STADAT 2021

There are 37 CORINE Biotope sites in Western Transdanubia, covering 13% of the total area of the region (205 287 ha). 263 habitats, 31 mammals, 88 birds, 20 amphibians and reptiles, 33 fish, 76 invertebrates and 303 plants are recorded.²²

16 out of 37 of invasive alien species included in the first list of IAS of Union concern have been observed in Hungary (Tsiamis K et al. 2017). Many of them are aquatic species and their highest concentration is along the Danube, putting particular pressure on the habitats associated with the river.

The conservation status of habitat types is considered as being mostly bad or poor over the 2013–2018 period. The conservation status of species is considered mostly poor (53.3%) while only 11.79% are considered to be bad (slightly better than in Austria).

The Farmland Bird Index has been decreasing since 2014, reaching its lowest level in 2019 at 70.2% (Eurostat; OECD database 2021). More effort is therefore needed to protect bird species and reverse the decline in the number of farmland birds.

Climate change and extreme weather events such as floods, excessive use of pesticides and other materials in agriculture, land use and fragmentation continue to put biodiversity at risk.

In 2019, the region's forest cover was 25.9% (national average 20.8%) and this has not changed in the last years. Extensive forested areas are concentrated in the sub-basins of Drava and Lake Balaton, where the proportion of forest cover exceeds 25%.

Although the health of forests is generally good, nearly half of them consist of plantations and semi-plantations of non-native species (OECD 2018). Expanding afforestation, further forest regeneration and sustainable forest management are necessary. Estimates at national level in

²² Evaluation of Hungarian natural areas of European importance – Research Institute of Ecology and Botany of the Hungarian Academy of Sciences 2003.





2019 showed that 31.6% of forest was asymptomatic, 33.6% weakly, 26.8% moderately and 7.1% strongly damaged, while 1.7% was dead.

On public awareness of biodiversity, the Eurobarometer 481 results reflect a better situation than in Austria. 64% of respondents 'totally agree' that biodiversity and healthy nature are important for long-term economic development a figure that is below some other EU MSs, however. 8% of respondents tend to disagree or totally disagree.

Trend

Table 9: Trend assessment for the programme area: Biodiversity

Indicators	Trend assessment
Natura 2000 protected areas	AT (0/+); HU (0)
Conservation status of habitat types and species (according to the Habitats Directive)	AT (-); HU (-)
Extent of biotope network	AT (0/-); HU (0/-)
Nature conservation areas	AT (+); HU (0)
Farmland bird index	AT (0); HU (-)
Forest condition	AT (-); HU (+/-)
Public awareness of biodiversity	AT (+/-); HU (+/-)

4.2.2 Soil

Soil is an essential reservoir of carbon, nutrients and water, and a key contributor to addressing climate change. However, increased pressures ranging from waste and soil pollutants to soil use, sealing and erosion are affecting its quality and quantity.

In **Austria**, municipal waste makes up 6% of the total waste volume²³ (4.5 million tonnes) or 507 kg/person, increasing by 8% compared to 2015. Municipal waste per person is particularly high in Burgenland and Lower Austria (see Table 10).

Table 10: Municipal waste, 2019

Federal state	Volume (t)	Volume (kg/per person)	Share of waste volume per treatment method (%)		
			Recycling	Thermal treatment	Mechanical and biological treatment
Burgenland	167 325	569	61%	18%	21%
Lower Austria	931 626	554	58%	40%	2%
Vienna	899 512	473	30%	68%	2%
Styria	589 950	474	56%	37%	7%
Austria	4 497 947	507	52%	43%	5%

Source: BMK 2021; M&E Factory calculations

²³In 2019, the total waste generated was 71 million tonnes, mainly in the form of excavated materials, construction and municipal waste. The main treatment methods were landfilling (largely used for excavated materials) and recycling.





Recycling and thermal treatment are the main treatment methods for municipal waste. Burgenland relies heavily on recycling, followed by Lower Austria and Styria, while thermal treatment is the commonest method in Vienna. In 2019, Vienna had four out of Austria's 11 thermal treatment plants for municipal waste. Mechanical-biological treatment occupies an insignificant share, with Burgenland reporting a relatively higher share.

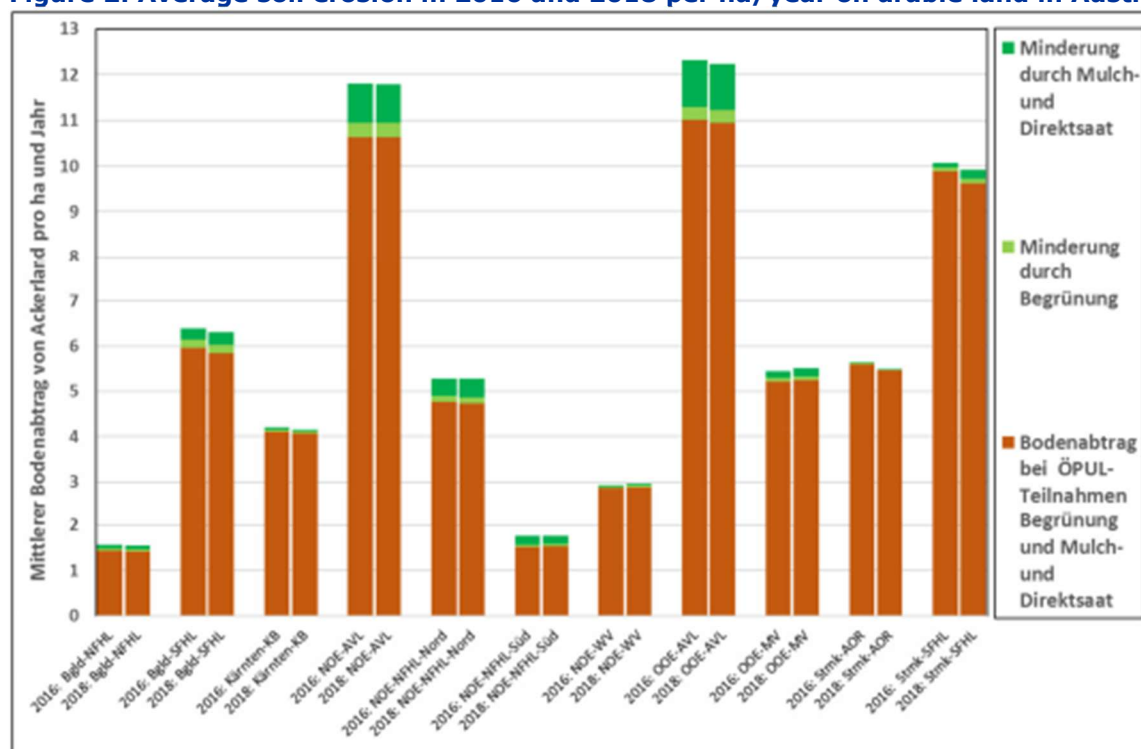
In January 2021, 163 contaminated sites were identified in the four states of the programme area, making up nearly half of the total contaminated sites in Austria. 85 of these were assessed as remediated or secured – a slight increase compared to 2020. 78 sites remain to be secured or remediated, in particular in Lower Austria and Styria (Umweltbundesamt 2021a: "Altlastenatlasverordnung").

On soil pollutants, an overall decrease in heavy metal pollution is seen since 1995. Arsenic and chromium are particularly high in north-eastern Austria. The gross nitrogen balance during 2012–2015 decreased compared to the period 2000–2003 (EEA 2018). During 2013–2017 the gross nitrogen surplus on agricultural land settled at around 40 kg N/ha/year. The phosphorus surplus averages 0.6 kg P/ha/year, decreasing since 2000 (Umweltbundesamt 2019b).

A nationally coordinated monitoring system is being set up for a wide assessment of the contamination situation (the AustroPOPs project). Data, evaluations and a national monitoring plan, including harmonisation of methods, will be available and will serve as a basis for national guideline and limit values.

Soil erosion on agricultural land remains a major problem. Across the different types of topography, the average soil loss on arable land ranges from 1.2 to 11 tonnes/ha/year. From 2016 to 2018, the Alpine foothills of Lower Austria registered one of the highest soil losses, while the lowest levels were reported in some parts of Burgenland and Lower Austria.

Figure 2: Average soil erosion in 2016 and 2018 per ha/year on arable land in Austria



Source: Strauss P. et al, 2020²⁴

²⁴ Production areas: High Alps (HA); Pre-Alps (VA); Eastern Alps (AOR); Wald- & Mühlviertel (WMV); Carinthian Basin (KB); Alpine Foothills (AV); Southern Lowlands & Hills (SFHL); North-eastern Lowlands & Hills (NFHL).



Some actions have been implemented to reduce soil loss, focusing on aspects such as soil conservation and erosion. They include the SONDAR+ project (Soil and Sustainable Operations Network in the Danube Region), which brings together municipalities and scientists, and the ErosAT project which aims to provide a national calculation of soil erosion with regional data and local significance.

In **Hungary**, the municipal waste generated and treated was 387 kg/person in 2019, which is lower than for Hungary in 2012 (402 kg/person) and for Austria today (Eurostat 2021).

In Western Transdanubia, municipal waste was 329.5 thousand tonnes in 2019, 76% of which was generated by households. The total volume has been relatively stable in the past 10 years, with a slightly increasing trend between 2015 and 2019. The total volume of selective household waste collection was only 42 thousand tonnes in 2019 (STADAT²⁵).

Landfilling continues to be the main treatment method (57% of municipal waste in 2019). In Western Transdanubia the share of waste disposed of in landfill sites reached 68%.

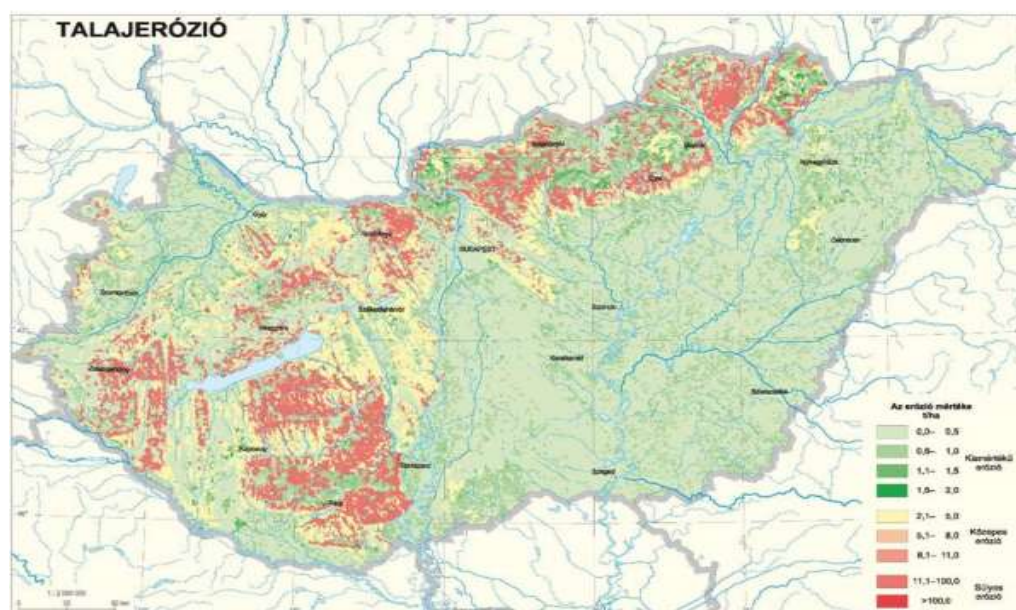
In 2016, Hungary had 5 375 registered sites where potentially polluting activities have taken place. Remediation or aftercare measures had been applied at 347 sites (Pérez & Eugenio, 2018).

During 2012–2015 the country reported a slight decrease in the gross nitrogen balance compared to the period 2000–2003 (EEA 2018). In 2019 the gross nutrient balance was 222 037 tonnes, lower than in 2018 and 2017 but 16% higher than in 2016 (STADAT).²⁶

A significant part of Western Transdanubia is covered by poorly fertile forest soils that in some places are acidic. These mulches are only of limited suitability for agriculture.

Hungary has an average rate of soil loss caused by water of 1.62 tonnes/ha/year (EU average: 2.46). In Western Transdanubia, soil erosion is relatively high in the eastern part of Zala county (Map 3).

Map 3: Soil erosion rate in Hungary



Source: Pásztor L., Waltner I., Centeri C. 2018; OVF 2020

²⁵ www.ksh.hu/stadat_files/kor/hu/kor0064.html

²⁶ www.ksh.hu/stadat_files/mez/hu/mez0043.html





Trend

Table 11: Trend assessment for the programme area: Soil

Indicators	Trend assessment
Municipal waste (high, medium, low)	AT (+); HU (+)
Soil erosion	AT (+); HU (0/+)
Soil quality	AT (+/-); HU (+/-)
Nitrogen surpluses of the agriculturally used area	AT (-); HU (-)

4.2.3 Water

Preserving ground and surface waters as well as maintaining and improving their performance and functionality is vital for providing water of high quality and in sufficient quantity. In addition, considering the characteristics of the region, assessing and managing flood risks remains necessary.

In **Austria**, almost 100% of all drinking water comes from ground and spring water, which makes the quality and protection of groundwater extremely important. Around 90% of the population are supplied through central water supply facilities and the remaining 10% obtain their drinking water from domestic wells and springs. Nearly 26% of the water used in the country goes to households, 68% to industry and trade, and around 6% to agriculture (Federal Ministry of Agriculture, Regions & Tourism 2018). Minor gaps are still to be tackled in drinking water supply in some areas of Südburgenland (IP AT–HU 2021–2027, draft of 8 July 2021).

Almost all households and companies are connected to a wastewater collection system and over 95% of wastewater is treated in municipal sewage treatment plants and industrial wastewater treatment plants.

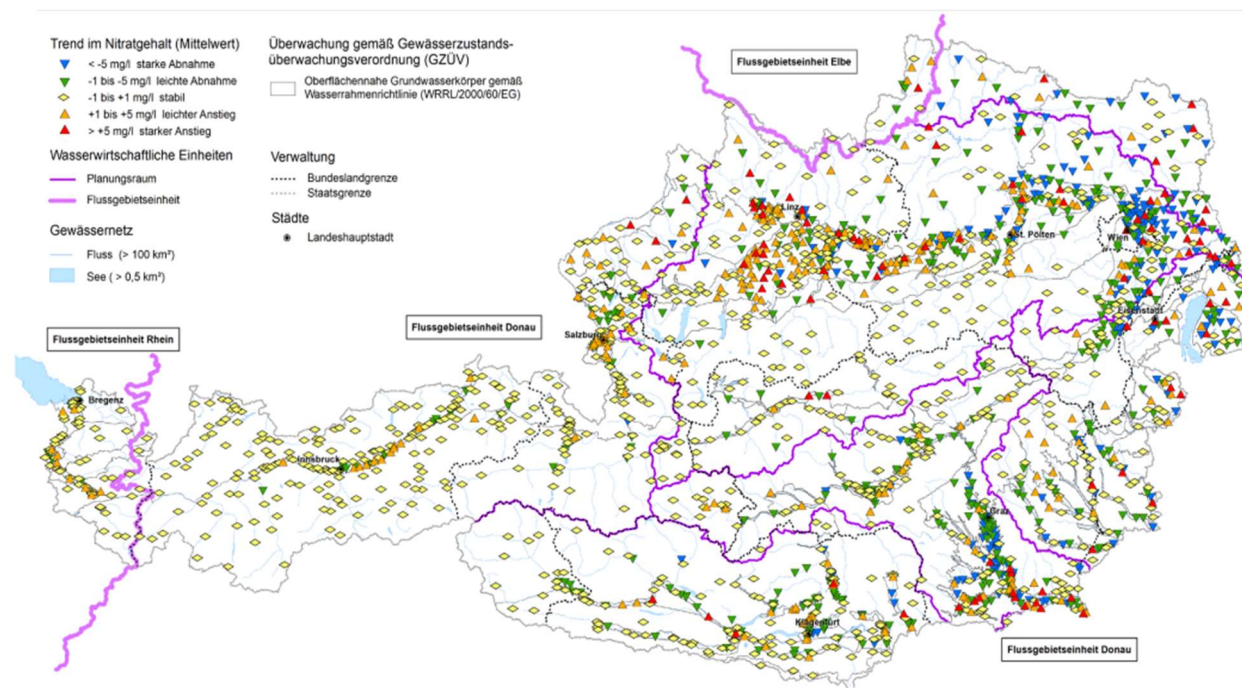
Austria is situated in three transboundary/international river basin districts, including the Danube River Basin District. It has 138 groundwater bodies and groups of groundwater bodies, and 2 106 groundwater monitoring sites. All groundwater bodies have good quantitative status. The impact of climate change (a small increase in precipitation, and rising temperatures) may lower groundwater levels in some areas such as in eastern Austria (e.g. in Burgenland).

On the overall chemical status significant improvements are needed, since none of the water bodies in Austria has achieved 'good' status.

Agriculture remains the most significant pressure for groundwater bodies. Hydropower could also put at risk the status of water bodies, having been used intensively as a renewable energy source for many decades.

Nitrate pollution in groundwater has remained mainly unchanged or has slightly improved compared to the previous 2016 environmental control report. However, the quality target for nitrate in groundwater is still exceeded at about 10% of the monitoring sites (Umweltbundesamt, 2019a). Increased nitrate pollution over recent years is particularly worrying in agriculture-intensive areas and low-precipitation regions such as eastern Austria (see Map 4**Fehler! Verweisquelle konnte nicht gefunden werden.**).




Map 4: Nitrate in groundwater, trends 2011–2015 and 2015–2019


Source: Umweltbundesamt, 2020

Turning to surface water, Austria has a network of rivers 32 521 km long and made up of 8 065 separate bodies of water (over 90% natural), plus more than 25 000 stagnant water bodies. The most significant environmental pressure on surface water is atmospheric deposition (affecting all water bodies), followed by dams, barriers and locks (27%).

Chemical pollution has the most significant impact, followed by altered habitats due to morphological changes. Active ingredients in pesticides and their metabolites in rivers are found particularly in areas that are used intensively for agriculture.

On their ecological status, 37% of rivers are assessed as being 'high' or 'good', 32% as 'moderate', 13% as 'poor' and 4% as 'bad'. 2% of the water bodies show 'good' or 'better' potential and 10% show 'moderate' or 'worse' potential. These water bodies have been identified as artificial or heavily modified (BMNT 2019).

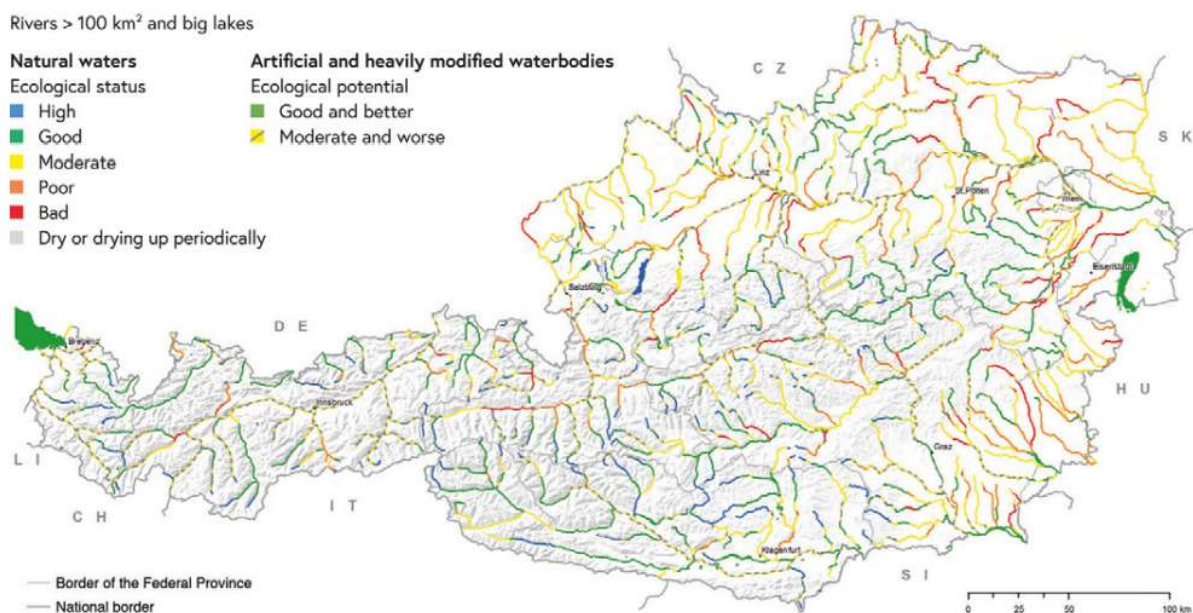
Regarding the ecological status of lakes, 16% are assessed as 'high', 32% as 'good', 10% as 'moderate' and 2% as 'poor'. All lakes identified as artificial or heavily modified show good ecological potential. Almost all bathing waters are of excellent quality (EEA 2020).

In the programme area, the ecological status of rivers and lakes can be assessed as being mainly 'moderate' and in some cases 'good', 'poor' or 'bad' (see Map 5 **Fehler! Verweisquelle konnte nicht gefunden werden.**). Some of the lakes that have not reached 'good' status due to material and hydromorphological pollution are Lange Lacke, St. Andäer Zicksee and Illmitzer Zicklacke.





Map 5: Rivers and big lakes – Ecological status and potential



Source: BMNT – Federal Ministry for Sustainability & Tourism, 2019

Based on the objectives of the Water Framework Directive and the required targets, a procedure for the gradual achievement of objectives was developed to provide for remediation of 'priority water bodies' by 2021. For other water bodies, the goal is to achieve the target during 2021–2027.

In **Hungary**, nearly 95% of the drinking water supply is based on groundwater. Drinking water is supplied to every settlement and only 2% of the population do not have access to piped water.

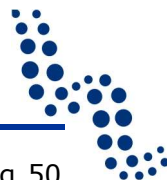
In Western Transdanubia, 98% of the population is connected to a public water supply. However, further improvement of the security of water supply is necessary in some areas.

The public sewerage network was operational in 66% of municipalities by the end of 2017 and more than 81% of housing units had access to the network. Almost all municipal wastewater is collected and treated. 95.2% of the collected water receives at least secondary treatment, while for 92.2% the treatment meets stricter requirements.

Some small municipalities in Vas and Zala counties lack a public sewerage network, mainly due to the isolated geographical location and their small size, which does not allow for economically viable sewerage treatment (AT–HU 2021–2027, draft of 8 July 2021; scoping consultation).

The entire territory of Hungary is situated in the middle of the Danube River Basin. It is covered by 185 groundwater bodies and 1 074 surface water bodies. The monitoring situation of quantitative status of groundwater bodies has improved slightly, but the area of groundwater bodies failing to meet 'good' status has increased by 9% (from 23.3 % to 25.5 % of the total groundwater body area).

Contamination of groundwater bodies remains an issue, with chemical pollution having the most significant impact. The percentage of stations reaching or exceeding 40 mg/l of nitrate



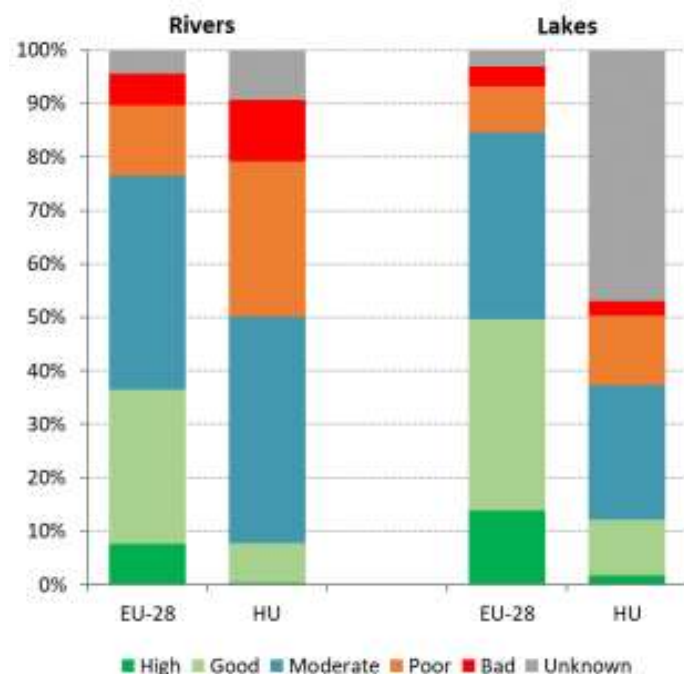
increased from 8.2% (2012) to 8.7% (2015), and the percentage reaching or exceeding 50 mg/l of nitrate increased from 6.9% to 7.1%.

Discharges not connected to the sewerage network is the second most significant pressure for groundwater bodies after abstraction or flow diversion for public water supply. To prevent groundwater pollution the collection and treatment of sewage in all municipalities is necessary, as well as modernising existing biological wastewater treatment plants.

On surface water bodies, the most significant pressures are physical alteration of the channel, bed, riparian area or shore due to agriculture, including the effects of diffuse pollution. There has been a significant improvement in the amount of surface water with 'good' chemical status, however. The nitrate concentrations in surface water are rather stable.

Regarding the ecological status or potential of surface water bodies, less than 10% of Hungarian rivers and lakes have 'good' ecological status or potential, and only two lakes and four rivers have 'high' status.

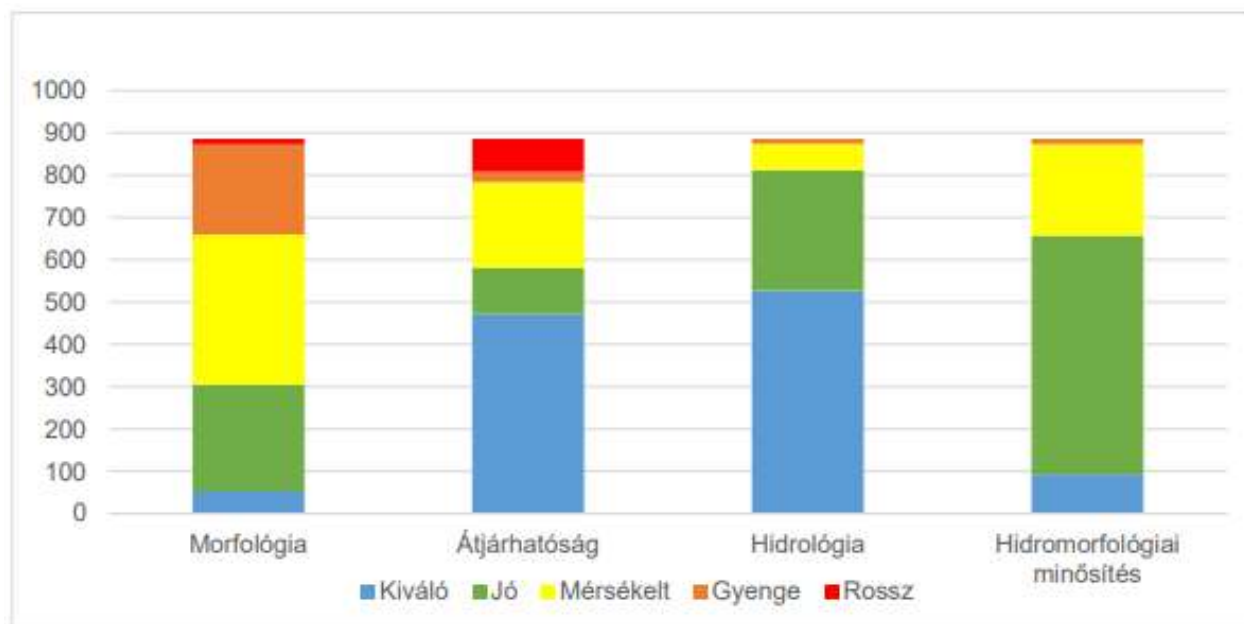
Figure 3: Ecological status or potential of surface water bodies in Hungary



Source: Environmental Report Review HU, 2019

In the region, Lake Balaton and Lake Fertő have been declared nutrient-sensitive areas in need of protection. Lake Balaton is assessed as being in 'good' ecological condition while Lake Fertő is in 'moderate' condition.

In terms of hydrological status, only 3% (out of 886) of watercourses do not reach 'good' ecological status. In terms of interoperability and morphological status the number of watercourses with 'good' status are 34% and above 60%, respectively (Figure 4).

**Figure 4: Hydromorphology of watercourse water bodies**

Source: OVF 2020

*1. Morphology; 2. Interoperability; 3. Hydrology; 4. Hydromorphological classification; Scale: Excellent (Kiváló), Good (Jó), Moderate (Mérsékelt), Weak (Gyenge), Bad (Rossz)

In 2020, 70% of bathing waters were of excellent quality, 14% of good quality and 5% of sufficient quality; these figures are almost unchanged compared to 2016.

In the context of tourism development, to improve the water quality of natural bathing sites it is necessary to improve the bathing infrastructure and ensure sustainable water management and efficient and appropriate wastewater treatment in the surrounding municipalities. High water quality should also be ensured at the main tourist destinations.

Trend

Table 12: Trend assessment for the programme area: Water

Indicators	Trend assessment
Groundwater chemical status according to WFD (nitrate, pesticides, other pollutants)	AT (-); HU (-)
Groundwater quantitative status according to WFD	AT, HU (0/-)
Ecological status or potential of surface water according to WFD (e.g. physico-chemical and hydromorphological quality)	AT (-); HU (-)
Chemical status of surface water	AT (-); HU (+/-)

4.2.4 Climate

Climate change impacts are becoming increasingly visible in both countries. Challenges related to greenhouse gas emissions, energy consumption, and extreme weather and climate-related events remain increasing concerns to be addressed.





In **Austria**, the annual temperature has risen by around 2°C since 1880. This is twice as high as the global average (nearly 1°C) and is expected to reach at least 4°C by the end of the century (Umweltbundesamt 2019)²⁷. Strong and extreme precipitation events have increased, while weak and moderate precipitation days have decreased.

Damage related to weather and climate costs an average of around 1 billion EUR annually and is expected to grow to at least 4.2–8.8 billion EUR annually by mid-century (Steininger et al., 2015, 2016).

Some projects are taking place at regional level to raise awareness of climate change adaptation and implement concrete actions. An example is the pilot programme “Climate Change Adaptation Model Regions for Austria – KLAR!”. Considering the future consequences of climate change, continued investment and more attention to climate change mitigation and adaptation are needed, especially at municipality level and in areas of climatic importance.

Greenhouse gas (GHG) emissions per capita decreased by 9% over the period 2011–2018 (Eurostat, 2021). In 2019 they amounted to 79.8 million tonnes of CO₂ equivalent – 1.5% higher compared to 2018 (Umweltbundesamt 2021b). However, the overall reduction targets for the period 2013–2020 are likely to be achieved.

In the programme area, the highest levels of greenhouse gas emissions have been reported in Lower Austria and Styria, while in all states of the programme area there has been an increase in GHG emissions compared to 2014, especially in Vienna (13%).

Table 13: Greenhouse gas emissions in 1,000t CO₂ equivalents per federal state

Federal state	2014	2015	2016	2017	2018	Average	Change 2018/2014
Burgenland	1 759	1 781	1 870	1 886	1 869	1 833	6%
Lower Austria	17 838	18 213	18 060	18 367	17 975	18 091	1%
Vienna	7 463	7 971	8 340	8 664	8 430	8 174	13%
Styria	12 800	13 418	13 289	14 142	13 738	13 477	7%
Austria	76 347	78 510	79 465	82 024	78 950	79 059	3%

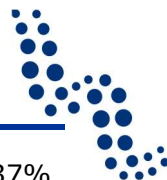
Source: Austrian Environment Agency, Air Pollutant Inventory, Burgenland Yearbook 2019

In 2016, the Wiener Umland/Südteil sub-region in Lower Austria had the second-highest carbon intensity in the country in terms of GHG emissions from large industrial facilities per GVA generated (European Commission 2020).

The sector “Energy” creates most of the national GHG emissions (69% of total emissions in 2019). 99% of the emissions from this sector originate from fuel combustion and the main emissions are created by the following sub-sectors: transport, manufacturing, energy industries and construction. The most important greenhouse gas is CO₂, contributing 98% to the total sectoral GHG emissions. The other GHG emissions arise from the ‘industrial processes and other product use’ sector (21%) and from agriculture (9.0%).

²⁷ www.umweltbundesamt.at/fileadmin/site/publikationen/rep0684.pdf

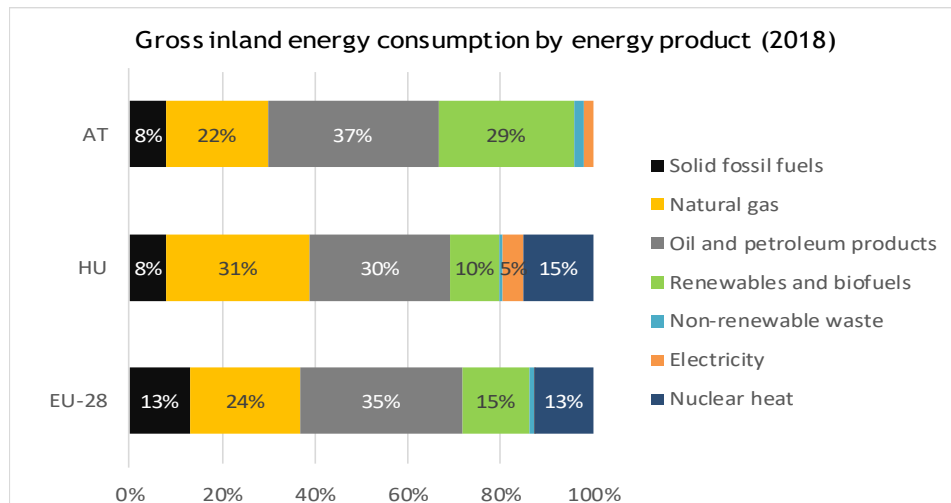




Oil and petroleum products occupy the biggest share of gross inland energy consumption (37%, stagnating since 2011). Energy import dependency remains high: in 2019 it was 72%, which is well above the EU average of 58% (Eurostat 2020).²⁸

On renewable energy production Austria ranks high, mainly due to its high shares of hydro-power, biomass, district heating and wind power. 29% of the country's total energy demand in 2018 was met from renewable energy sources (2011: 27%).

Figure 5: Gross inland energy consumption by energy source/carrier in 2018 (%)



Source: Eurostat 2018, Situation analysis of the Interreg Programme AT–HU 2021–2027

Burgenland has been self-sufficient in energy since 2013 (Energie Burgenland 2019). 150% of its power consumption in 2019 was met by renewables, mainly wind energy. This explains its low level of GHG emissions caused by energy industries compared to other sectors such as transport, building and agriculture.

Other model regions have been built to foster energy autonomy (mostly funded by the Federal Climate and Energy Fund), including 24 in Styria, 5 in Lower Austria and 7 in Burgenland. Through the ÖREK partnership "Energy Spatial Planning", efforts have also been made to make settlement structures more energy-efficient and to increase the share of renewable energies.

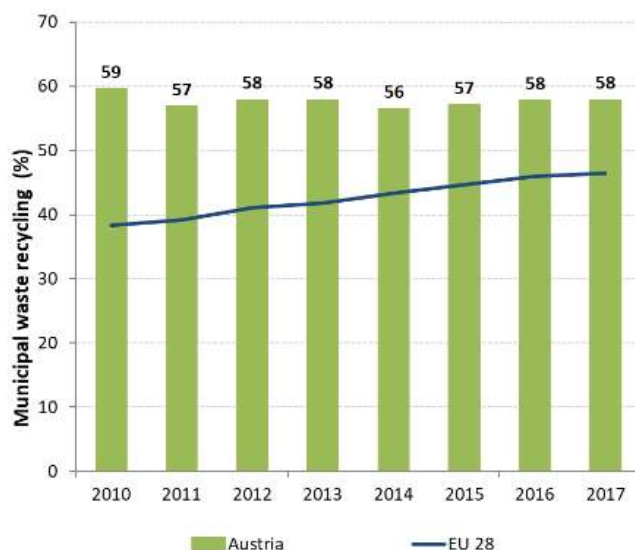
On waste management and the circular economy, Austria has one of the highest recycling rates in Europe (see Figure 6).

²⁸ ec.europa.eu/eurostat/databrowser/view/sdg_07_50/default/table?lang=en





Figure 6: Recycling rate of municipal waste 2010–2017



Source: *Environmental Implementation Review AT, 2019*

However, further actions are needed. The country's plastic packaging recycling rate is below the 2030 target and the rate of separate packaging and paper collection has almost stagnated (2014: 1.06 million tonnes, 2017: 1.07 million tonnes). In most Austrian households rubbish is sorted meticulously, though there are regional differences in waste separation. To foster a more circular use of material, the whole product lifecycle needs to be addressed in addition to the waste phase, including through more separate collection.

Regarding the potential of the circular economy and related sectors in the future, an increasing trend is expected in the number of investments, jobs created, and gross value added. Recent statistics on the development of the 'environmental economy' show an increase of around 11% in the number of jobs in Austria in this sector from 2008 to 2017. In Styria this trend is even higher (30%), increasing from 27 712 employees in 2008 to 35 958 in 2017 (Statistics Austria; Statistik.steiermark²⁹).

In **Hungary**, global warming also exceeds the global average (1.15°C since 1900). Although it is more significant in the eastern part of the country, the values on the western border have also been above average over the 1981–2017 period.

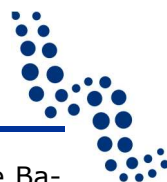
Climate change is expected to increase the occurrence of extreme conditions related to high temperatures and decrease the occurrence of low temperatures. In terms of precipitation, the likelihood of both extremely intense rains and droughts is increasing considerably, especially in summer.

The economic losses incurred from extreme weather and climate-related events has been close to the EU average in per-capita terms in the last decades (EEA 2019b). The annual average number of people affected by flooding in Hungary is about 200 000, and the annual average affected GDP is about 2 million dollars (World Bank 2017).

The risk of experiencing floods in the region is particularly high in Győr-Moson-Sopron. Other areas vulnerable to climate change include the Kőszeg Mountains, Vendvidék, the Drava sub-

²⁹ www.landesentwicklung.steiermark.at/cms/dokumente/12792849_141979459/7bdeaca4/Entwicklung%20Umwelt-wirtschaft%202008-2017.pdf





basin, the Lake Balaton sub-basin, the Balaton highlands and the southern shore of Lake Balaton (OVF 2020).

Agriculture, forestry and tourism are the sectors mostly exposed to the more frequently expected floods, droughts and heatwaves (ITM 2020).

Greenhouse gas emissions per capita have remained unchanged during 2017–2019, though they are higher than in 2013–2016. (Eurostat 2021)³⁰. In general, Hungary has shown good performance in meeting its 2020 GHG emissions target. In 2018, total GHG emissions were 10% lower than in 2005.

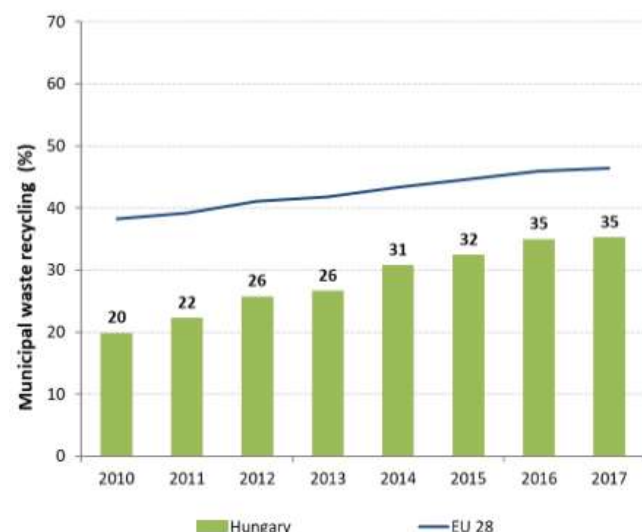
In terms of gross inland energy consumption, natural gas (31%), oil and petroleum products (30%) and nuclear power (15%) dominate the energy sector. Hungary's energy import dependency has ranged from 50% to 70% since 2010, with the highest share recorded in 2019 (69.7%) – above the EU average of 58% (Eurostat 2020).³¹

Energy from renewable sources increased to 15% of total final energy consumption in 2015 (12.8% in 2010). Solar is favoured among the renewable energy sources, while a relatively high share of nuclear energy also contributes to GHG reduction. On hydropower, most of the small and micro-hydro plants in Hungary are located in Western Transdanubia.

The share of renewable energies is planned to increase to at least 21% by 2030, mostly on the basis of new photovoltaic plants (National and Energy and Climate Plan 2018, adopted in 2020). Western Transdanubia has good potential for wind power, geothermal energy and agricultural biomass, especially Győr-Moson-Sopron for wind and Zala and Vas counties for biomass and geothermal.

On the circular economy, despite significant improvements made, the country is still at an early stage and the EU 2020 recycling targets (especially a municipal waste recycling target of 50%) are not being met (Figure 7 **Fehler! Verweisquelle konnte nicht gefunden werden.**)³². Municipal waste treatment continues to rely largely on landfilling.

Figure 7: Recycling rate of municipal waste 2010–2017



Source: Environmental implementation review HU, 2019

³⁰ ec.europa.eu/eurostat/databrowser/view/t2020_rd300/default/table?lang=en

³¹ ec.europa.eu/eurostat/databrowser/view/sdg_07_50/default/table?lang=en

³² eur-lex.europa.eu





Elimination of illegal dumping and reducing the waste generated by single-use materials are necessary. Greater emphasis should also be placed on selective waste collection, including the proper collection and safe disposal of hazardous waste. The problem of disposal and recycling of green waste will also become acute and should be addressed.

In terms of natural resource productivity (which measures the value of a product produced from a unit of material consumption (EUR/kg)) performance has deteriorated compared to the EU average. While in 2010 the EU average for resource productivity was 1.7 times higher than the Hungarian figure, in 2018 Hungary showed 2.4 times the EU average, which is uniquely high in the EU (Economic Journal article 2021.03.).

Recent preparations for the development of the National Action Plan on Circular Economy are key steps in addressing these issues and boosting reuse and recycling. The circular economy and its related sectors are expected to attract higher levels of investments, which will lead to an increased number of jobs created and high gross value added in these sectors.

Trend

Table 14: Trend assessment for the programme area: Climate

Indicators	Trend assessment
Effects of climate change on vegetation development	AT, HU (+)
Greenhouse gas emissions per capita (tonnes of CO ₂ equivalent/person)	AT, HU (+/-)
Final energy consumption in households per capita (kilogram of oil equivalent)	AT, HU (+)
Energy dependency (%)	AT, HU (+/-)
Share of renewable energy in gross final energy consumption (%)	AT, HU (+)
Impacts of extreme weather and climate-related events <ul style="list-style-type: none"> million euros (total losses and insured losses) euros (loss per capita and loss per sq. km) % (insured losses as fraction of total losses) fatalities in absolute numbers 	AT , HU (+)
Circular material use rate (%)	AT, HU (+)
Number of secured areas of settlement climatic importance	AT, HU (=)
Private investments, jobs and GVA related to circular economy sectors	AT (+); HU (+)

4.2.5 Air

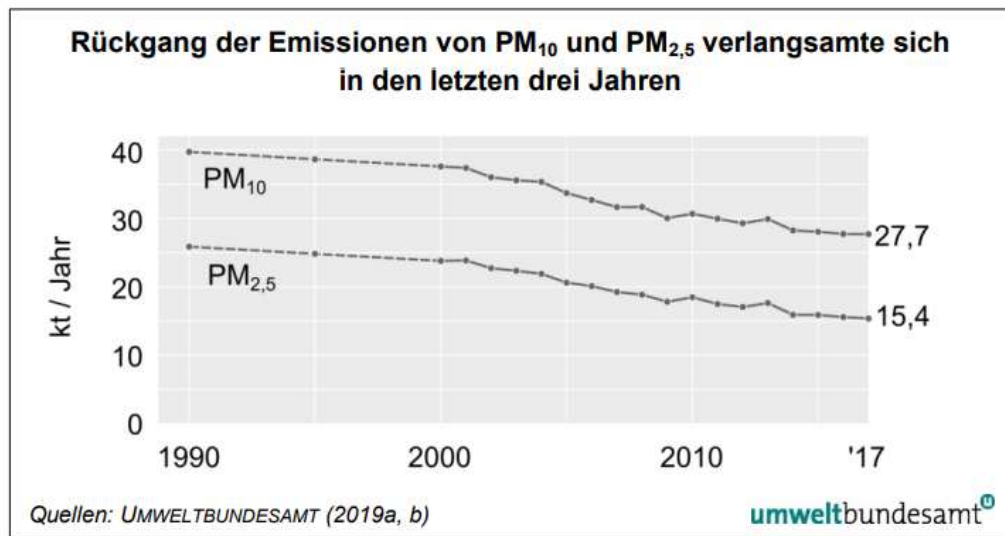
Air pollution is the environmental factor with the greatest negative impact on human health (European Court of Auditors, 2018). Particulate matter (PM₁₀ and PM_{2.5}) has the greatest negative impact (WHO, 2013).

In **Austria**, PM₁₀ and PM_{2.5} emissions have shown a downward trend since 1990 (see Figure 8).





Figure 8: PM₁₀ and PM_{2.5} emissions in Austria, 1990–2017

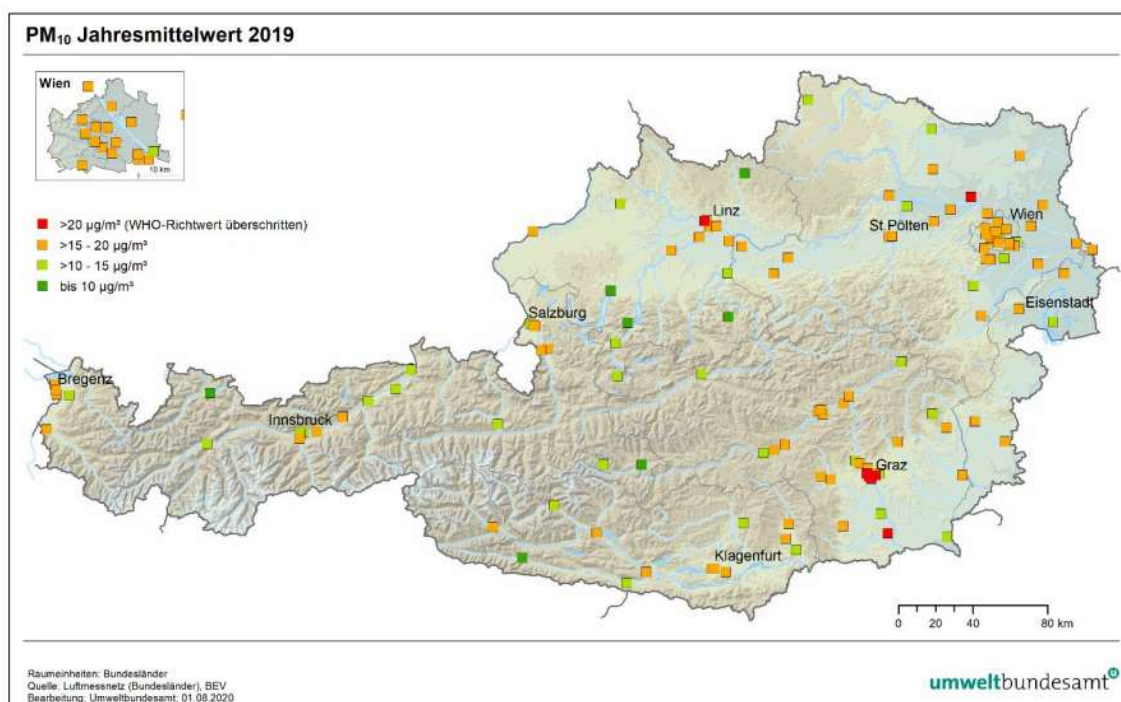


Source: Umweltbundesamt 2019

However, the World Health Organization (WHO) air quality guideline values for PM concentrations are yet to be met at either national and regional level (Umweltbundesamt 2019, 2021).

In 2019, the annual mean value of PM₁₀ was above the WHO guideline value of 20 µg/m³ at seven measuring points, including in Graz in the programme area (see Map 6).

Map 6: Annual mean concentration values of PM₁₀ in 2019



Source: Umweltbundesamt 2020

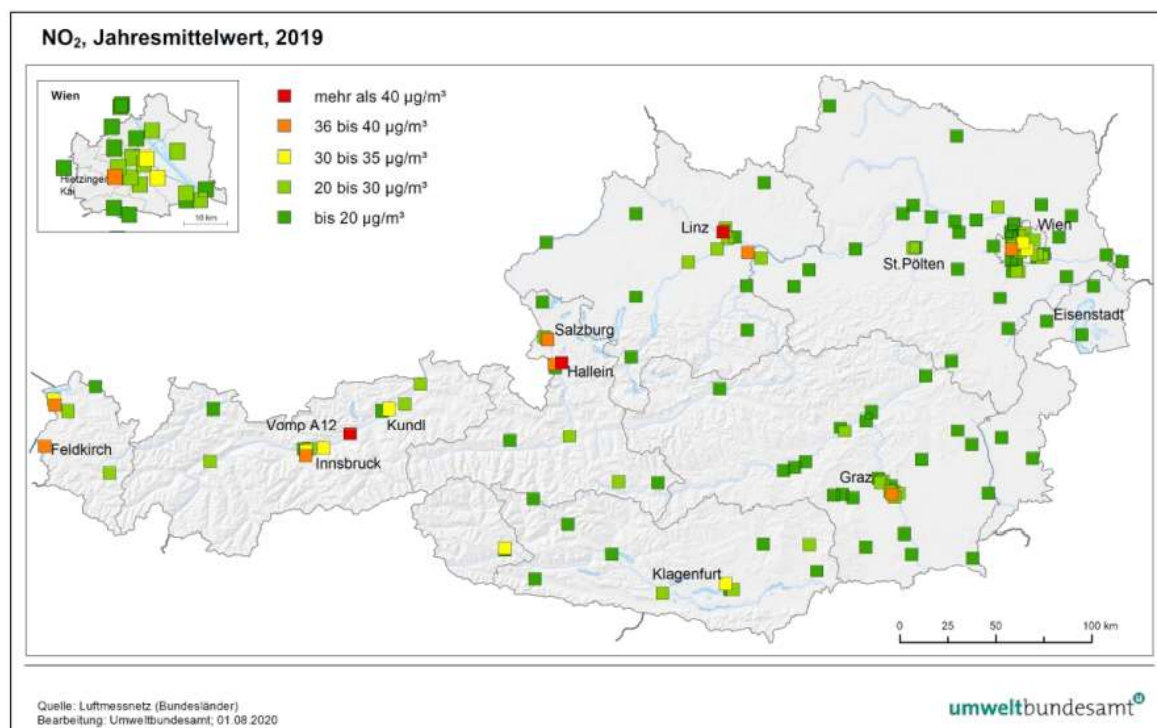
On the other hand, the limit value criterion for the daily mean value of PM₁₀ (50 µg/m³) was not exceeded in 2019, for the first time since 2000. In past years, in the programme area this value was exceeded in Styria (especially in Graz) and in Vienna (last time in 2014). PM₁₀ emissions are mainly caused by space heating (2018: 25%), agriculture (18%), transport (15%) and industry (16%).



On PM_{2.5} emissions, the limit value of 25 µg/m³ was not exceeded at any measuring station in 2019. However, Graz continues to report the highest values in the country.

In relation to NO₂ emissions – caused predominately by road transport – in recent years the annual mean limit value (30 µg/m³) was exceeded at several traffic-affected locations such as in Vienna and Graz (Umweltbundesamt 2020).

Map 7: Annual mean values of NO₂ pollution, 2019



Source: Umweltbundesamt 2020 "Air quality measurements in Austria in 2019"

For 2020, the PM₁₀ values are expected to have dropped to their second-lowest level since 2000 and nitrogen dioxide (NO₂) and ozone (O₃) to their lowest since 1990. This is mainly due to COVID-19 measures, plus warm weather until mid-March which led to a lower demand for domestic heat and a drop in emissions from space heating.

Polychlorinated biphenyls (PCB) emissions per capita have been decreasing since 1990, mainly due to reduced consumption of coal and bunker oil. They are almost exclusively caused by "industrial processes and product use" (95% of PCB emissions in 2017).

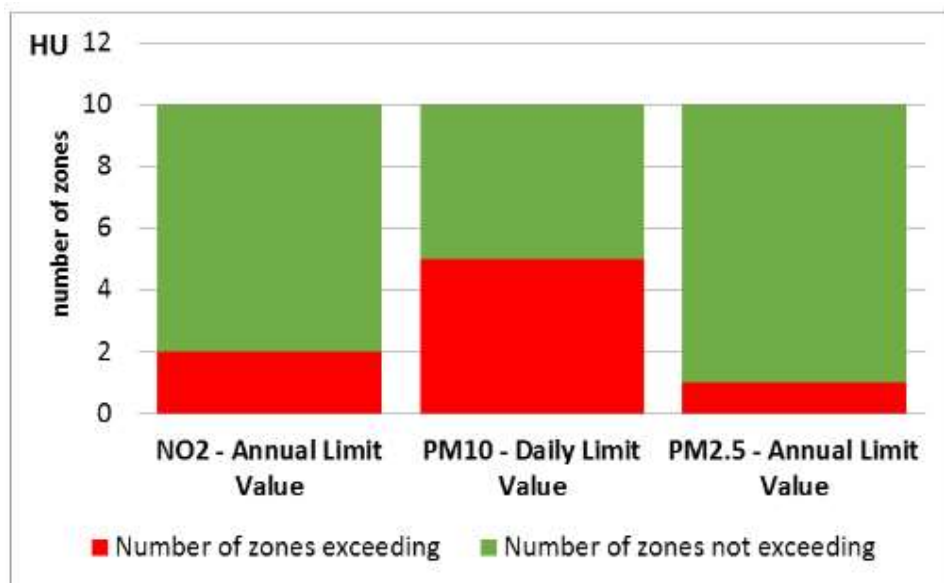
Reducing emissions from the transport sector remains one of the key challenges. The 2030 Austrian Energy and Climate Strategy and Plan (#mission2030)³³ aims to significantly reduce greenhouse gas emissions in the transport sector by increasing the share of renewable energy and e-mobility and strengthening rail-based public transport.

In **Hungary**, air pollution remains a major environmental challenge despite a significant decrease in emissions of several air pollutants since 1990.

In 2017, PM₁₀ and NO₂ exceeded EU air quality standards in a number of air quality zones. The main sources of air pollution include residential solid fuel combustion, agriculture and transport.

³³ ec.europa.eu/energy/sites



**Figure 9: Hungarian air quality zones exceeding EU air quality standards in 2017**

Source: *Environmental Implementation Review HU, 2019*

The highest values of NO₂, PM₁₀ and PM_{2.5} annual average emissions in Western Transdanubia are reported from the Győr, Szent István station followed by the Győr, Ifjúság körút station. However, no breaches of standards for NO₂, PM₁₀ or PM_{2.5} have been registered in the region (STADAT).

PCB emissions per capita have been decreasing since 1990, being lower compared to Austria.³⁴ On the energy consumption of the transport sector, the share of renewable resources increased between 2013 and 2016, then decreased to 6.8% in 2017 (lower than the EU-28 average of 7.6%). Due to its high reliance on fossil fuels, emissions from this sector remains particularly worrying.

The draft National Energy and Climate Plan puts special emphasis on electromobility. Existing support for electromobility, including grants, tax benefits and support for charging stations is planned to be complemented by other policy measures. Other alternative fuels, shared mobility, public transport, such as improving rail connections, and a modal shift would help to address the environmental burden of transport.

Trend

Table 15: Trend assessment for the programme area: Air

Indicators	Trend assessment
Air quality (particulate matter PM ₁₀ , PM _{2.5})	AT, HU (-)
Air quality (nitrogen dioxide)	AT, HU (+/-)
Polychlorinated biphenyls (PCB) emissions per capita	AT, HU (-)
Pollutant emissions from transport	AT, HU (+/-)
Shares of energy from renewable sources used in transport	AT, HU (+)

³⁴ <https://www.eea.europa.eu/data-and-maps/figures/country-comparison-reductions-in-pcb>

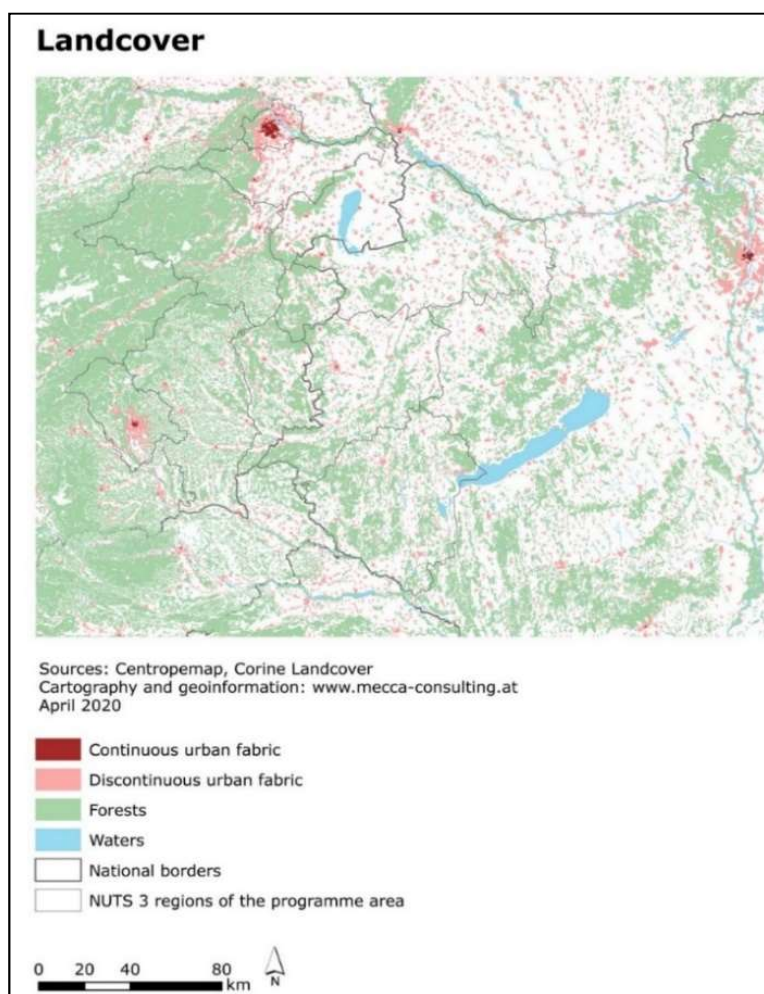


4.2.6 Landscape

The cross-border region has diverse and unique nature and landscapes. However, land fragmentation, consumption and soil sealing, and urban sprawl are yet to be addressed, especially in urban areas. In this context, cross-sectoral cooperation (buildings, transport, industry, energy, agriculture, etc.) is necessary to reduce pressure on landscape patterns.

In **Austria**, Lower Austria and Burgenland can be considered rural regions predominantly shaped by agriculture and forestry. The mountainous landscape in Styria promotes forestry and makes agriculture largely inefficient. It has by far the largest share of woodland (more than 50% of the regional land cover). Vienna has more than half of its territory not artificially shaped. 16% of the total area is woodland, 16% is grassland and 13% of the area is cropland.

Map 8: Land cover



Source: Situation analysis of the Interreg Programme AT–HU 2021–2027

Land covered by artificial surfaces made up 4.3% of Austria in 2015, slightly below the EU average of 4.4% (Eurostat 2021³⁵). The figure is significantly high in Vienna (42.3%) which shows the relative pressure on nature and the environmental pressure in urbanised areas.

Landscape fragmentation is increasingly being increased by the construction of roads and other infrastructure, leading to a loss of habitats and negative impact on the migration of animals. It

³⁵ appsso.eurostat.ec.europa.eu

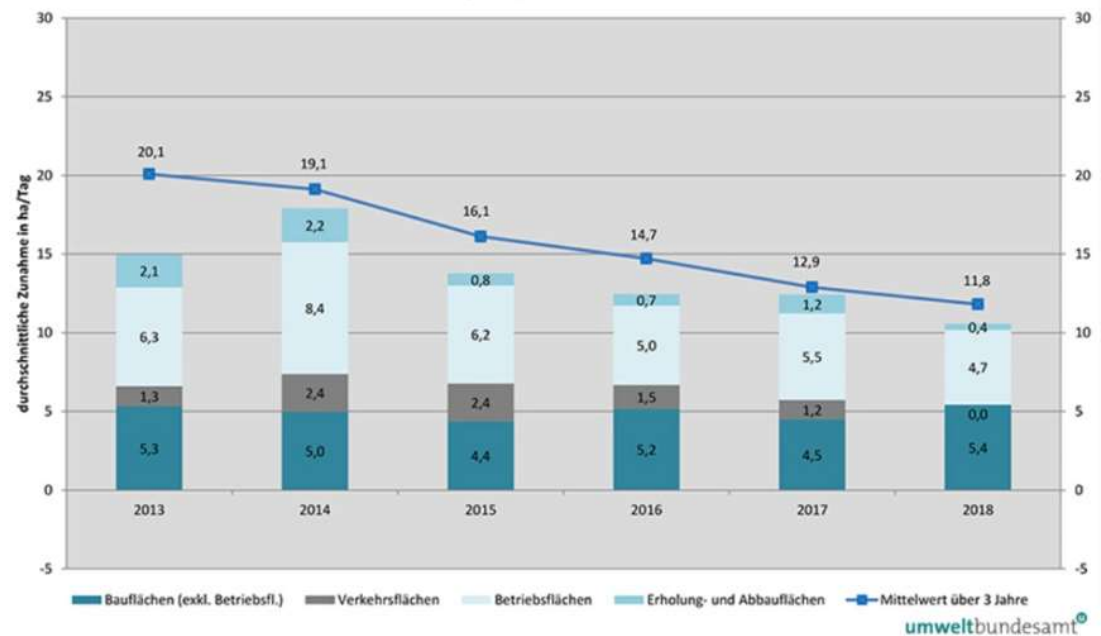




is therefore important that the remaining habitat corridors outside of forest areas are kept free in the long term.

Land consumption and soil sealing are still at a high level despite a downward trend in recent years. In 2018, daily consumption of land reached 11.8 ha, 41.2% of which is sealed (Umweltbundesamt 2019). This is well above the target of 2.5 ha/day set out in the strategy for sustainable development (Figure 10).

Figure 10: Land consumption in ha per day, average over three years



Source: Umweltbundesamt 2019³⁶

In the programme area, land consumption and soil sealing remain concerning in all states (Table 16). Thus, in 2019 land consumption and sealed areas were particularly high in Lower Austria and Styria. Land consumption per permanent settlement area is very high in Vienna, while in terms of sealed area measured as m² per inhabitant, Burgenland reports the highest value.

The 2020–2024 government programme aims to keep land consumption as low as possible over the coming years and to reduce the annual increase to 9 km²/year by 2030.³⁷

The progressing soil consumption concerns especially the utilized agricultural soils (BMLFUW 2015). Building construction can also harm sustainability, especially when it takes place in green areas. Long-term measures to protect natural areas and other land against becoming built up, bringing new life to village centres, modernising old or empty buildings and raising awareness of the soil consumption problem are necessary (BMNT/Federal Ministry for Sustainability & Tourism 2019).

³⁶ www.altlasten.gv.at/flaechenrecycling/Flaechenverbrauch

³⁷ www.umweltbundesamt.at/umweltthemen/boden/flaecheninanspruchnahme





Table 16: Land take, 2019

I. Federal State	II. Area (km ²)	III. Population	IV. Permanent settlement area	V. Share of permanent settlement area in the total area of state (IV/I)	VI. Building land	VII. ...thereof industrial and commerce areas	VIII. Traffic and transport areas	IX. building land and traffic/transport areas	X. Other Areas	XI. Land consumption (VI+VIII+ X)	XII. Land consumption per permanent settlement area (XI/IV)	XIII. Sealed area ³⁸	XIV. Sealing degree (XIII/XI)	XV. Sealed area in [m ²] per inhabitant
Burgenland	3 965	292 966	2 435	61%	203	28	156	359	28	387	16%	149	38%	508
Lower Austria	19 180	1 673 607	11 201	58%	899	183	630	1 529	118	1 646	15%	680	41%	406
Styria	16 399	1 241 228	4 911	30%	582	112	359	942	62	1 003	20%	397	40%	320
Vienna	415	1 892 150	316	76%	159	22	62	220	28	248	79%	110	44%	58
Austria	83 883	8 837 707	31 214	37%	3 263	650	2 075	5 338	391	5 729	18%	2 354	41%	266

Source: Umweltbundesamt 2019³⁹

³⁸ sealed area: buildings (100%), building affiliated areas (75%), industry-and commerce areas (60%), cemeteries (35%), roads (100%), road affiliated areas (15%), parking lots (80%), railways (50%), +recreational areas (20%), excavation areas (10%)

³⁹ www.umweltbundesamt.at/fileadmin/site/themen/boden/flaechenverbrauch_2019.pdf



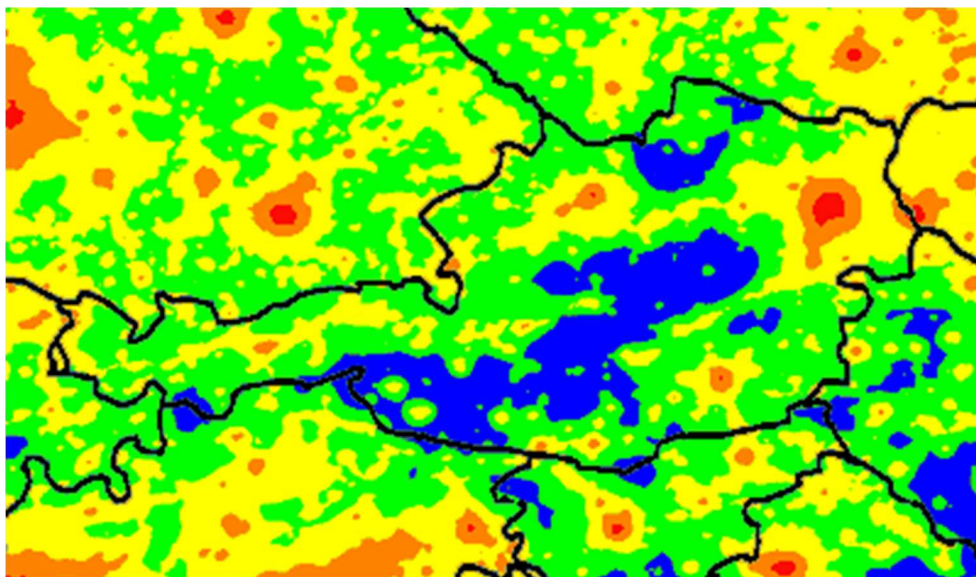


Urban sprawl is also problematic, and growing metropolitan areas are exposed to enormous settlement pressure. This is reflected in a greater use of space, soil sealing, increased commuter flows and increasing environmental pollution.

The different types of building construction are also associated with significant construction and maintenance costs (roads, water supply and disposal, lighting, waste disposal, etc.). This entails a loss of agricultural soils and biodiversity.

Light pollution is mainly a concern in large urban areas such as Vienna (see Map 9).

Map 9: Light pollution in Austria



Source: Royal Astronomical Society

Overall, the capital city has made some progress to reduce light pollution. The amount of artificial light has levelled off – at a high level – after a steep increase between 2009 and 2014.⁴⁰ 2019 was the second year in a row in which the amount of light increased by less than 5%. However, much light pollution can be further avoided by clever and efficient types of lighting that also brings considerable energy savings.

In **Hungary**, Western Transdanubia can be considered a rural region (see Map 8) and 2% of its area is covered by wetlands. Zala county has the second largest share of woodland in Hungary (2018: 31.6% versus the national average of 20.8%), which provides excellent opportunities for wood-related activities. Similarly, Vas is also above the national average (28.2%) while the proportion of woodlands in Győr-Moson-Sopron is slightly below the national average (19%).

The percentage of artificial land in the region (3.5%) is in line with the EU average for artificial land coverage (4.1%) (Eurostat 2021). Győr-Moson-Sopron had the highest number of dwellings built between 2014 and 2018 per ten thousand inhabitants (197 dwellings), or more than three times the national average.

⁴⁰ Kuffner Observatory Association. Study "Light over Vienna V" www.wien.gv.at/umweltschutz/licht-verschmutzung.html





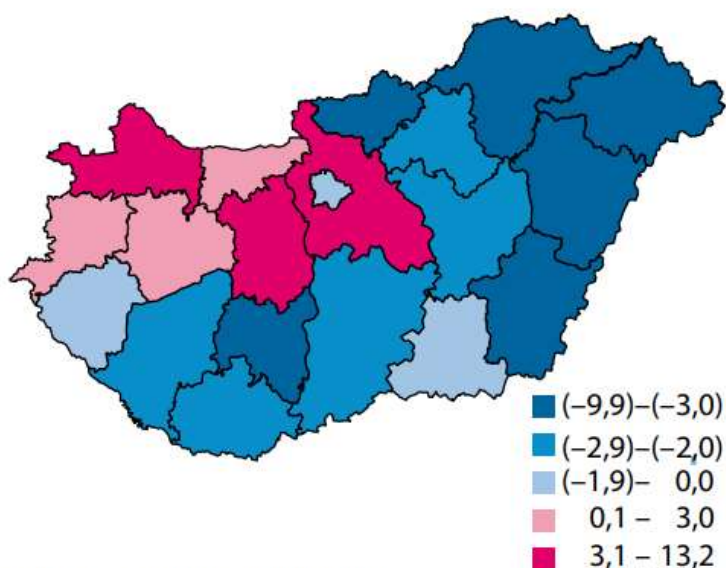
Since 2000, per capita land consumption has increased in urban, rural and intermediate regions, driven by a combination of declining populations and continued development of land. As a share of total land area, developed land makes up 6% of Hungary (OECD 2017).

The average size of land holding in Hungary is only 2.2 hectares, which indicates a very fragmented estate system. Fragmentation is an obstacle to modern precision farming, irrigation, and efficient farming in general.⁴¹

The urban population ratio in the region is higher than the national average (58.93% versus 52.51%) but the proportion of inhabitants in urban settlements with a population density of over 120 people/km² is lower than the national average.

There is a slight increase in the number of people due to domestic migration and negative birth/death balance.⁴² Győr-Moson-Sopron receives the highest number of domestic migrants in the region (STADAT 2019), having one of the largest domestic migration gains in Hungary (see Map 10). An increasing trend is also reported in the international migration positive balance, with Győr-Moson-Sopron county registering one of the highest numbers in the country in 2018.

Map 10: Domestic migration margin per thousand inhabitants, 2018



* Előzetes, részben becsült adatok.

Source: Hungarian Central Statistical Office www.ksh.hu/2018

⁴¹ Interview with State Secretary for Administration, Ministry of Agriculture, 2020

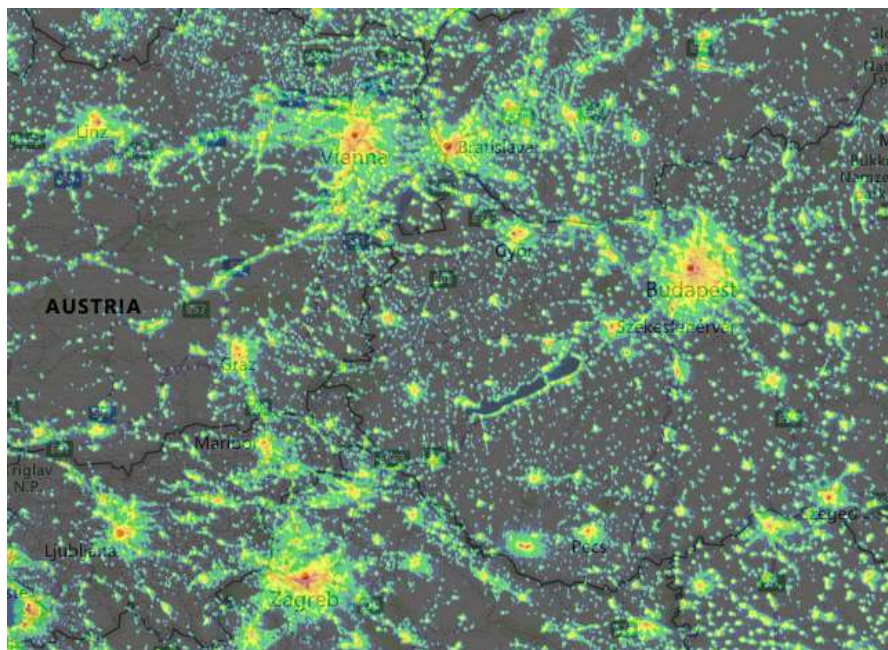
⁴² www.ksh.hu/stadat_files/foi/hu/foi0006.html





Light pollution is especially high in large urban areas such as Győr-Moson-Sopron, which ranks second to the capital city Budapest.

Map 11: Light pollution in Hungary



Source: Light pollution map⁴³

Trend

Table 17: Trend assessment for the programme area: Landscape

Indicators	Trend assessment
Land consumption, sealing	AT, HU (+)
Light pollution	AT, HU (+)
Land take and land recultivation (as a share of the country's area)	AT, HU (+)
Landscape fragmentation pressure and trends including the following indicators: <ul style="list-style-type: none"> • Average number of meshes per km2 • Area of strongly fragmented landscape (in % of country area) • Fragmentation change • Change of strongly fragmented landscape area 	AT, HU (+)
Urban sprawl	AT, HU (+)

4.2.7 Human health/Population

People living in the programme area are exposed to various health risks including air and noise pollution as well as risks arising from climate change and weather extreme events.

In **Austria**, air pollution remains a major environmental health threat. PM_{2.5} pollution results in an estimated reduction in life expectancy of more than half a year on average, or around 3,300 premature deaths (Spiegel, 2019). The WHO guideline values for particulate matter concentrations are yet to be fully met (Umweltbundesamt 2019, 2021).

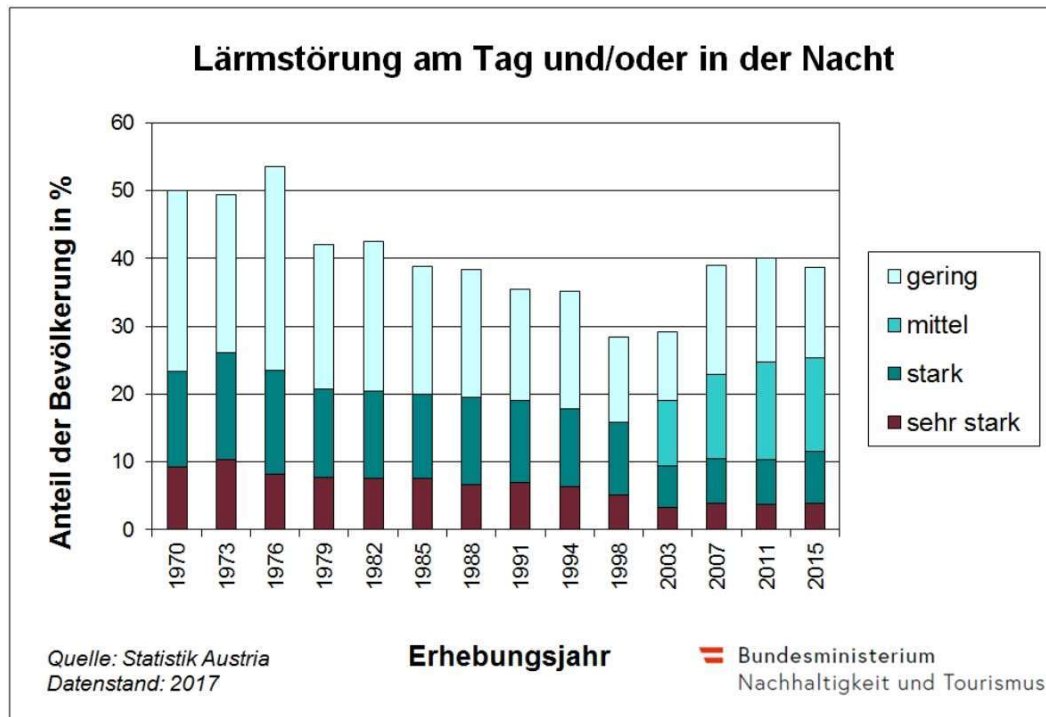
⁴³ www.lightpollutionmap.info/#zoom=6.00&lat=47.3675&lon=17.8725&layers





On noise pollution, around 39% of Austrian citizens stated that they were disturbed by noise in their home in 2015; this is a similar level to the previous results for 2011 and 2007. While disturbance caused by noise varies within the programme area and country, it is particularly high in the metropolitan areas of Vienna and Graz (Statistik Austria 2017).⁴⁴

Figure 11: Austrian population affected by noise disturbance by day and night



Source: Statistik Austria 2017⁴⁵

Around 460 premature deaths per year can be attributed to traffic noise (EEA 2018), which remains the main source of noise. Noise from construction sites and from neighbouring apartments are becoming important, especially in large urban areas.

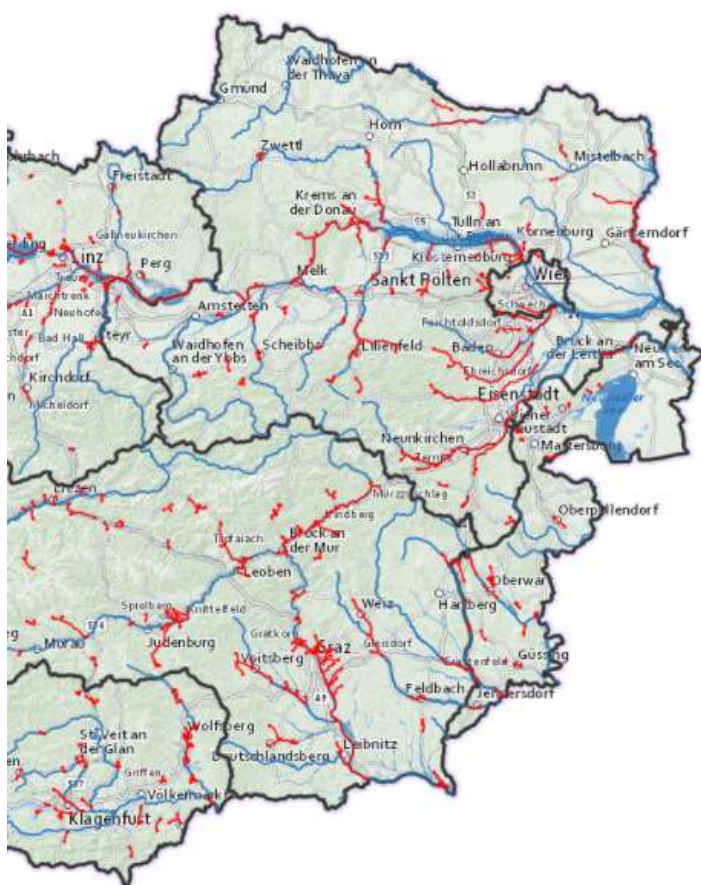
The consequences of climate change, especially extreme weather events, are also an increasing health threat. Flood risk is particularly high in eastern Austria (see

Map 12).

⁴⁴Statistik Austria (2017). Umweltbedingungen, Umweltverhalten 2015, Ergebnisse des Mikrozensus.

⁴⁵www.laerminfo.at/ueberlaerm/laermbetroffenheit/mikrozensus_2015



**Map 12: Hazard map – Flood plains**

Source: Wasserinformationssystem 2021⁴⁶

Longer heatwaves and higher temperatures on hot days, combined with high humidity, might also lead to increased mortality (APCC 2018). Austria experienced an above-average rate of heat-related mortality in 2018, while the peak of the 2013–2018 period was recorded in 2015 with 1 122 deaths.⁴⁷

Large amounts of energy and raw materials (mostly of mineral origin), biomass (wood and agricultural products), metallic ores and water continue to be used in industrial production. Fossil fuels provided more than two-thirds of gross domestic energy consumption in 2017, mainly used in industrial plants. Two-thirds of the water abstracted nationally is used for processes and cooling in industrial plants (Statistik Austria 2019).

Transport remains one of the greatest challenges. The level of motorisation has increased by 10% since 2000, reaching 562 cars per 1 000 inhabitants in 2018 (Statistik Austria 2019). From 2000 to 2017 domestic passenger transport grew by nearly 23%, more than twice as fast as the population (9.8%).

⁴⁶ Dark blue: high probability; light blue: low probability

⁴⁷ sustainabledevelopment.un.org/content/documents/26511VNR_2020_Austria_Report_English.pdf





Reducing transport-related emissions is key for Austria's shift to carbon neutrality. This is particularly emphasised in the National Energy and Climate Strategy and Plan (#mission2030). The strategy aims, among other things, to significantly reduce greenhouse gas emissions from the transport sector, increase the share of renewable energy and e-mobility and strengthen rail-based public transport. In addition, the Cycling Master Plan 2015–2025 (BMLFUW 2015, now Ministry of Sustainability and Tourism) aims to double the share of cycling from 7% to 13% by 2025.

In **Hungary**, breaches of air quality standards are also having severe health and environmental repercussions. In 2016, over 13 000 premature deaths in the country were attributable to bad air quality, mostly in the form of particulate matter (EEA 2019a). The main sources of air pollution include residential solid fuel combustion, agriculture and transport emissions.

Noise pollution causes at least 300 premature deaths per year and is responsible for around 1 300 hospital admissions.⁴⁸ In the region, the city of Győr has implemented a specific noise map and an action plan for noise abatement.⁴⁹

Climate change is also an increasing threat to human health. Low water levels in still waters are expected to be more frequent, which will worsen water quality as water temperatures rise (European Commission 2019a).

The frequency of precipitation of extreme intensity is expected to grow, increasing the risk of extreme floods. The risk of flooding from rivers and other inland waterways is particularly high in the county of Győr-Moson-Sopron (see Map 13).

Map 13: Areas potentially at risk from flooding



Source: OVF (National Directorate General for Water Management)

⁴⁸ European Environment Agency, Noise Fact Sheets 2017.

⁴⁹ According to 280/2004 (X. 20.) Government decree on the assessment and management of environmental noise, a strategic noise map and action plan must be prepared for the administrative area of cities with more than 100 000 inhabitants. gyor.hu/easy-docs/





As regards the transport sector, Hungary has the second-lowest number of cars per 1 000 inhabitants in the EU (325 cars vs. the EU average of 497 cars/1 000 inhabitants).⁵⁰ It also reports the EU's lowest proportion of residents who use a car every day (24% vs. an EU average of 50%), and the highest proportion who use public transport.

However, transport continues to be one of the main sources of air pollution. Its emissions increased by 24% from 2013 to 2016 (European Commission 2019a). New vehicles bought in Hungary are among the least environmentally friendly in the EU.⁵¹ The use of alternative fuels in new passenger cars sold in the country has decreased over the past years. In 2016, the share of new passenger cars using alternative fuels was only 0.32%, compared to 9.75% in 2013 (European Commission 2018).

In 2015, the Jedlik Ányos Plan was adopted to increase the use of electric cars in the country. The current draft National Energy and Climate Plan aims to cap transport emissions by relying on electromobility. Other alternative fuels, shared mobility, public transport and a modal shift would help to reduce the environmental burden of transport.

Trend

Table 18: Trend assessment for the programme area: Human health/population

Indicators	Trend assessment
Noise pollution	AT, HU (+)
Increased traffic	AT, HU (+)
Use of renewable raw materials	AT, HU (+)
Use of fossil raw materials	AT, HU (0/-)
E-mobility	AT, HU (+)
Public mobility	AT, HU (+)
Alternative mobility	AT, HU (+)
Protection against flood hazards	AT, HU (0/+)

4.2.8 Cultural heritage and material assets

The cross-border region has several areas listed as World Heritage Sites, including:

- Austria: Palace and Gardens of Schönbrunn (Vienna), Historic Centre and Schloss Eggenberg/ Old Town of Graz (Styria), Historic Centre of Vienna, while Semmering railway connects Lower Austria and Styria.⁵²
- Hungary: Millenary Benedictine Abbey of Pannonhalma and its Natural Environment (Győr-Moson-Sopron) and other sites that are inscribed on the UNESCO Tentative List (e.g. Balaton Uplands Cultural Landscape which is part of Bakony-Balaton UNESCO Global Geopark).

⁵⁰ ec.europa.eu/eurostat

⁵¹ EEA, Average CO₂ emissions from new passenger cars sold in EU-28 Member States plus Norway, Iceland and Switzerland in 2016.

⁵² Other tentative UNESCO sites are also located in the region, such as Heiligenkreuz Abbey monastery, Baden bei Wien (as part of Great Spas of Europe), and some areas that are part of the Frontiers of the Roman Empire World Heritage Site (e.g. Legionary fortress Wien)





- Austria and Hungary: Cultural Landscape Fertő / Neusiedlersee located on the Austrian-Hungarian border.

In **Austria**, the Historic Centre of Vienna is part of the World Heritage in Danger list. To sustain the attributes that support its outstanding universal value, authenticity, and integrity over time, various challenges should be considered related to development pressures, visual impacts and modernisation of the historic fabric that arise within the context of urban development in a capital city.

As regards historical monuments, their protection is regulated by the Monument Protection Act. The number of protected monuments increased from 38 146 objects in 2017 to over 38 500 in 2020. Lower Austria and Vienna have registered over 10 600 and 3 350 protected monuments, respectively. Environmental threats (e.g. flooding) to cultural assets remain a concern, although they might vary from region to region.

In **Hungary**, apart from the two World Heritage Sites listed above, there are over 2 300 protected monuments in Western Transdanubia, which represents almost a quarter of the national heritage. Two most preserved historical cities (Sopron and Kőszeg) and the two Baroque cities of Győr and Szombathely are located in the region. The Benedictine Abbey of Pannonhalma, the aristocratic castles of Fertőd and Keszthely, and the intact medieval churches are of particular importance.⁵³

Cultural heritage protection is regulated by Act LXIV of 2001 on the Protection of Cultural Heritage. Considering future developments (e.g. transport and other infrastructure development), complying with the provisions of the Act and consultation with the authorities responsible for heritage protection are essential to protect the region's cultural heritage, areas of great cultural value, and historic cultural landscapes. Furthermore, the conservation of protected monuments and local protected buildings should be given high priority in tourism-related development and functional improvement projects. In addition, the preservation of monuments should be a priority in terms of planning and service development.

Trend



Table 19: Trend assessment for the programme area: Cultural heritage and material assets

Indicators	Trend assessment
Historically shaped cultural landscapes (ha)	AT, HU (0)
Cultural Heritage in Danger (e.g. listed cultural sites at risk)	AT, HU (0/+)

4.3 Interrelationship between the environmental issues

Despite being analysed separately in the previous section, environmental issues have close interactions that can affect one another positively or negatively.











Table 20: Interactions between the environmental issues

Environmental issue: Trend		Impact on other environmental issues	
	Biodiversity getting worse		Negative impact on: Air, Soil, Climate, Water, Landscape, Cultural heritage and material assets, Human health/Population

⁵³ www.terport.hu/regiok/magyarorszag-regioi/nyugat-dunantuli-regio





	Air getting (so-mehow) better		Positive impact on: Climate, Biodiversity, Landscape, Human health/Population
	Soil getting (so-mehow) worse		Negative impact on: Climate, Water, Biodiversity, Landscape, Human health/Population
	Climate getting worse		Negative impact on: Biodiversity, Air, Soil, Water, Landscape, Human health/Population, Cultural heritage and material assets
	Water getting worse		Negative impact on: Soil, Biodiversity, Landscape, Human health/Population, Climate, Cultural heritage and material assets
	Landscape getting worse		Negative impact on: Climate, Biodiversity, Human health/Population, Cultural heritage and material assets

Source: M&E Factory 2021

Loss of biological function and biodiversity can result from environmental aspects including air pollution, soil sealing, change in water quality, and negative pressure on land resources and landscape. On the other hand, if land is completely abandoned or overused, the diversity of habitats in the landscape also decreases. The impact of these factors is also intensified by the influence of climate change. Protective forests play a key role in protecting against natural hazards.

Conflicting goals in other areas such as renewable energies (which have an impact on ecologically sensitive areas) is also to be taken into consideration and resolved.

Overall, the protection of nature is crucial for people and their health. Nature provides fresh air, clean water, fertile soils as the basis for food, forests as protection against avalanches and other natural hazards, climate regulation, education and recreation.

Moreover, the protection of natural and cultural heritage contributes to preserving the overall environmental status as well as to raising awareness and acceptance among the general population.





5 ASSESSMENT OF THE ENVIRONMENTAL IMPACT

5.1 Introduction

This chapter provides an overview of the likely significant (positive and negative) environmental impacts of the Interreg Programme AT–HU 2021–2027. The assessment is based on the latest draft version of the programme document (draft of 8 July 2021).

A relevance matrix is prepared to identify the relevant linkages between the programme and affected environmental issues (see Table 21).

Based on the results of the relevance matrix, the likely impacts of the programme on these environmental issues are assessed (see Table 23), by taking into consideration the key guiding questions. Where no relationship can be identified, no further investigation is conducted as part of the SEA.

The terms 'likely' and 'significant' as used to describe environmental impacts are not clearly regulated and no threshold exists. In addition, a specific relationship between an environmental issue and a planned action is not possible. This is because on the one hand the programme content must be kept broad, while on the other hand the locations, sizes, and numbers of projects can only be estimated based on previous experience and allocation of funds. In cases where projects are subject to further assessment (such as an EIA impact assessment), this limitation is only a minor problem. Otherwise, reference should be made to the overall qualitative assessment of the SEA.

Thus, the findings of the environmental report are not to be understood as exact statements, but as suggestions for discussion between the programme managing authority, environmental authorities, SEA experts and the public.

In the next chapters we present a brief description of the planned actions, the analysis of effects and potential measures. Here the focus is on the comparison of trends and the likely impacts on environmental issues.

In section 5.4, the cumulative and synergetic impacts and the interactions between the affected environmental issues are described. Finally, in section 5.5 the overall impact assessment is briefly summarised.





Table 21 identifies the relevant relationships between the programme and the environmental issues concerned by taking into consideration the guiding questions. The evaluation is carried out using a binary scale (yes/no). No further investigation is carried out within the framework of the SEA where no connection can be established. Interactions between the environmental issues will be explained in the following sections.

Table 21: Relevance matrix

Policy objective	Specific objectives	Biodiversity	Soil	Water	Climate	Air	Landscape	Human health /Population	Cultural heritage and material assets
PO2: A greener, low-carbon transitioning towards a net zero carbon economy and resilient Europe	iv) promoting climate change adaptation, and disaster risk prevention, resilience, taking into account ecosystem-based approaches	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	v) promoting access to water and sustainable water management	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	vii) enhancing protection and preservation of nature, biodiversity, and green infrastructure, including in urban areas, and reducing all forms of pollution	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PO3: A more connected Europe by enhancing mobility	iii) developing and enhancing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross-border mobility	Yes	No ⁵⁴	No	Yes	Yes	Yes	Yes	Yes
PO4: A more social and inclusive Europe implementing the European Pillar of Social Rights	ii) improving equal access to inclusive and quality services in education, training and lifelong learning through developing accessible infrastructure	Yes	No	No	Yes	Yes	Yes	Yes	Yes
	vi) enhancing the role of culture and sustainable tourism in economic development, social inclusion and social innovation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ISO 1: Interreg-specific objective 'a better cooperation governance'	i) 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	No	No	No	Yes	No	Yes	Yes	No

⁵⁴ The impact related to land consumption/soil sealing is assessed under "Landscape"





5.2 IP alternatives and zero scenario

The assessment of alternatives is of particular importance for the SEA because – despite the difficulties mentioned in section 0 – it contributes significantly to minimising negative environmental impacts and reinforcing positive ones.

The examination of all feasible alternatives (variant examination in accordance with the SEA Directive) includes the drafts of the programme document and the zero scenario. It is assumed that through the iterative improvement of the programme and the close cooperation between programming and SEA, the final version of the programme document represents the best possible alternative. Elaborating and evaluating further alternatives would only make sense if they can be realistically implemented and are therefore relevant to the decision.

For the SEA, the alternative scenarios are as follows:

Table 22: IP alternatives and zero scenario

Trend (zero scenario)	Alternative 1	Alternative 2
Development of the environmental issue WITHOUT the programme	Draft programme, 8 July 2021	To be prepared after the public consultation ...
Some environmental issues such as biodiversity, water, landscape, climate and to some extent air, soil and cultural heritage are expected to get worse if the trend is to continue. As a result, they are expected to also have negative impacts on human population and health.	<p>The programme and the relatively high budget allocated to PO2 "A greener Europe" are expected to have positive impacts on a number of environmental issues such as climate, biodiversity as well as water by focusing on climate change adaptation and mitigation, sustainable water management and protection and preservation of nature and biodiversity.</p> <p>Improvement is also expected with regard to air and climate by promoting sustainable mobility.</p> <p>The programme might have limited, local and reversible negative impacts during the implementation of specific projects such as pilot actions and small-scale infrastructure. Specific selection criteria and monitoring measures could be used to minimize and prevent these impacts.</p> <p>Greenfield development should be avoided, and existing infrastructure should be used to reduce pressure on land take.</p> <p>More emphasis could be put on sustainable cooperation between stakeholders and knowledge management to ensure higher sustainability of the project outcomes and impacts. For example, projects in sectors such as tourism, mobility, education and training should on the one hand consider the indirect and cumulative impacts on the environment, and on the other hand, use synergies for reducing or eliminating pressure on environmental issues.</p>	

Source: M&E Factory, 2021





This section presents a detailed matrix showing how the programme actions are expected to affect the environmental issues concerned. The evaluation is carried out using an ordinal scale. The relevant key questions are answered in the second instance on the basis of the results of the impact matrix.

Table 23: Impact matrix

Policy objective	Specific objectives	Biodiversity		Soil	Water		Climate		Air		Landscape		Human health /Population		Cultural heritage and material assets		
PO2: A greener, low-carbon transitioning towards a net zero carbon economy and resilient Europe	iv) promoting climate change adaptation, and disaster risk prevention, resilience, taking into account ecosystem-based approaches	+		+	+		+		+		+		+		+		
	v) promoting access to water and sustainable water management	+		+	+		+		+		+		+		+		
	vii) enhancing protection and preservation of nature, biodiversity, and green infrastructure, including in urban areas, and reducing all forms of pollution	+		+	+		+		+		+		+		+		
PO3: A more connected Europe by enhancing mobility	iii) developing and enhancing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross-border mobility	+	-					+	-	+	-	+	-	+	-	-	
PO4: A more social and inclusive Europe implementing the European Pillar of Social Rights	ii) improving equal access to inclusive and quality services in education, training and lifelong learning through developing accessible infrastructure	0/+						0/+		0/+		0/+		0/+		0/+	
	vi) enhancing the role of culture and sustainable tourism in economic development, social inclusion and social innovation	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
ISO 1: Interreg-specific objective 'a better cooperation governance'	i) 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							+				+	-	+			





Legend	
+	Positive impact
+ −	Positive and negative impact
−	Negative impact
0	No change
=	No assessment possible
	Not relevant

5.3 Environmental impact per type of action

This section describes the likely significant impacts on the environment at the level of individual planned actions and the proposed measures that are planned to prevent, reduce and, as far as possible, offset significant adverse environmental impacts.

Table 24: Description of the impacts and the measures per type of action

Priority Objective 2: "A greener, low-carbon Europe..." Specific objective iv: Promoting climate change adaptation, disaster risk prevention and resilience, taking into account ecosystem-based approaches Planned action 1.1: Cross-border research and data collection and exchange to improve know-how and preparedness towards climate change impacts		
Biodiversity: +	Soil: +	Water: +
Climate: +	Air: +	Landscape: +
Human health/Population: +	Cultural heritage and material assets: +	Interactions between the above-mentioned issues
<p><i>Description of the likely significant impacts on the environment:</i></p> <p>The type of action 1.1 aims to enhance know-how and preparedness towards climate change impacts and risks at regional and local levels with a special focus on joint research and the application of research results in the area.</p> <p><i>Its likely significant impacts on the environment are as follows:</i></p> <ul style="list-style-type: none"> • positive direct impacts in short and medium term: New or improved knowledge and data on climate change, especially among public authorities and research institutions in the cross-border region. • positive indirect impacts in medium and long term: Use of data and research results (when materialised or applied in the region) is expected to lead to better-informed decision making and evidence-based investments and activities addressing climate change and environmental issues related to it, such as: protecting habitats, mitigating soil erosion, preventing floods, protecting cross-border landscape, and mitigating negative consequences on local populations and cultural heritage and material assets, especially in areas of climatic importance and high vulnerability to climate change impacts. <p>Overall, positive impacts can be expected from interactions among the environmental issues. For example, research and data on temperature behavior and possible catastrophes would lead to better evidence-informed decisions related to flood prevention, and therefore have positive impact in preventing and/or minimising the negative consequences on local populations, cultural heritage and landscape in the cross-border region.</p> <p><i>Measures to reduce or offset significant negative environmental impacts:</i></p> <p>Additional emphasis could be put on the long-term collaboration between institutions responsible for data collection and research, which should enable sustainable cooperation in the future. An example could be the development of research networks on climate change (without overlapping with activities foreseen under ISO1). Review of current limits and criteria in the context of climate change could be foreseen.</p>		





During project selection, preference should be given to the projects addressing climate change and also affecting other environmental issues in a positive way. As regards implementing provisions related to project selection, integration of core questions on the environmental output of the project into the project application is recommended. The project application form could include a section with a pre-environmental assessment to be undertaken by the project.

In addition, some elements can be highlighted to reduce the project's carbon footprint, such as:

- use and sharing of digital documents to the largest extent possible;
- use of online events where possible, without compromising the quality and effectiveness of the actions
- Implementation of activities with limited use of energy and natural resources.

On monitoring, the proposed programme indicators related to the participations in joint actions across borders during and after project completion should help assess the involvement of stakeholders and their commitment after project completion.

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint actions and activities and the relevant environmental issues they address, number and type of participants (e.g. public authorities, NGOs, etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has positive impacts. It is expected to contribute to the sustainable management of forests and their biodiversity, conservation of protected areas, flood protection, development of climate resilient areas, planning and implementation of decisions and climate adaptation measures, soil, water and groundwater management in terms of climate adaptation, preservation of good air quality and landscape, protection of local populations and their settlements, and the protection and maintenance of cultural landscape.

Source: M&E Factory, 2021

Priority Objective 2: "A greener, low-carbon Europe..."

Specific objective iv: Promoting climate change adaptation, disaster risk prevention and resilience, taking into account ecosystem-based approaches

Planned action 1.2: Developing cross-border strategies, management and action plans addressing climate change impact, risks and natural hazards in the border region

Biodiversity: +	Soil: +	Water: +
Climate: +	Air: +	Landscape: +
Human health/Population: +	Cultural heritage and material assets: +	Interactions between the above-mentioned issues

Description of the likely significant effects on the environment:

The type of action 1.2 aims to boost strategic development across the border to allow for better adaptive capacity to climate change and climate change-induced risks in the border region especially regarding sectors or areas particularly affected such as forestry and agriculture, tourism, SMEs, cities and municipalities.

Its likely significant impacts on the environment are as follows:

- **positive direct impacts in short and medium term:** Harmonised strategies, management and action plans to tackle climate change impact, risks and natural hazards in the cross-border region.
- **positive indirect impacts in medium and long term:** Cross-border strategies, management and action plans (when effectively implemented) should lead to more synchronised efforts in addressing common challenges caused by climate change, risks and natural hazards such as better conserving cross-border habitats and forests in a larger area, protecting soil and mitigating soil erosion, preventing floods, increasing green and open spaces for recreation and leisure uses, protecting cross-border landscape, and mitigating negative consequences on local populations and cultural heritage and material assets (e.g. evacuation or risk management plans).

Overall, positive impacts can be expected from interactions among the environmental issues. Thus, cross-border strategies and action plans actions related to protecting the border region from natural hazards are expected to have positive impacts in preventing and/or minimising the negative consequences on local populations and their settlements, as well as on biodiversity and other sectors such as tourism and agriculture.





Measures to reduce or offset significant negative environmental impacts:

Plans and strategies related to warning systems for extreme weather events could be included, in addition to the flood warning systems envisaged under SO v. During project selection, preference should be given to projects addressing climate change that also affect other environmental issues and economic sectors in a positive way. Involvement of relevant stakeholders on both sides of the border is necessary, especially those that are or will be involved in the future implementation of these strategies and plans. It is also recommended that issues such as "avoidance of displacement of the resident population" and "involvement of civil society in participatory decision-making processes" be given priority.

As regards implementing provisions related to project selection, integration of core questions on the environmental output of the project into the project application is recommended. The project application form should include a section with a pre-environmental assessment to be undertaken by the project which helps to foresee and avoid potential negative impacts on biodiversity, water bodies, cultural heritage and landscape. In addition, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1. above)

On monitoring, the proposed programme indicators related to the jointly developed solutions and solutions taken up or up scaled by organisations should help to assess, especially in the medium and long term, whether these strategies and plans have been developed and are being implemented.

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint solutions and activities and the relevant environmental issues they address, number and type of stakeholders involved (e.g. public authorities, NGOs), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has positive impacts. It is expected to contribute to the conservation of protected areas, the sustainable management of forests and their biodiversity, flood protection, development of climate resilient areas, planning and implementation of decisions and climate adaptation measures, soil, water and groundwater management in terms of climate adaptation, protection and preservation of landscape, and protection of local populations and their settlements.

Source: M&E Factory, 2021

Priority Objective 2: "A greener, low-carbon Europe..."

Specific objective iv: Promoting climate change adaptation, disaster risk prevention and resilience, taking into account ecosystem-based approaches

Planned action 1.3: Implementing joint solutions and pilot actions including small-scale investments in climate change adaptation and mitigation measures

Biodiversity: +/-	Soil: +	Water: +
Climate: +	Air: +	Landscape: +
Human health/Population: +	Cultural heritage and material assets: +	Interactions between the above-mentioned issues

Description of the likely significant effects on the environment:

The type of action 1.3 aims to promote the implementation of innovative actions helping to adapt to climate change impacts on regional and local level, building on and providing good practices at local, national and EU level.

Its likely significant impacts on the environment are as follows:

- **positive direct impacts in short to medium term:** Improved capacities in climate change adaptation and mitigation measures such as planting of drought-resistant species, shading measures in residential areas, skill development, etc. However, the impact may be limited if the joint solutions and pilot actions are not taken up and developed on a larger scale and area (where possible).
- **positive direct and indirect impacts in medium and long term:** The implementation of solutions and pilot actions is expected to lead to positive environmental impacts for the target groups and areas. However, the impacts could be enhanced if these solutions are further developed and replicated in other areas and/or on a larger scale (where possible). This type of action is expected to contribute to various environmental issues such as improving protection of endangered species and forests, preventing floods and other climate-related hazards, promoting energy efficiency and reducing CO₂ emission, protecting cross-border landscape, developing necessary skills for local populations, and mitigating negative consequences on cultural heritage and material assets.





- **limited negative indirect impacts in medium and long term:** Some activities such as those focused on modified and innovative techniques (e.g. for wood processing) could have a negative impact in cases when they would lead to possible modification of native forests and trees that might affect the region's biodiversity. As a rule, innovative techniques can be expected to have predominantly positive environmental impacts, which can be triggered using state-of-the-art, more environmentally compatible technology and processes. However, the so-called rebound effects should also be taken into account, i.e. increased burdens due to increased production/use despite the improved effect/output unit ratio. Nevertheless, these impacts, are uncertain and may be localised, depending on the project.

Overall, positive impacts can be expected from interactions among the environmental issues. Thus, joint solutions and pilot actions related to the development and adaptation of technological digitalisation models oriented towards climate resilience could lead to positive impact in energy efficiency, as well as in preventing and/or minimising the negative consequences on the population arising from natural hazards.

Measures to reduce or offset significant negative environmental impacts:

Activities related to the development of warning systems for extreme weather events could be included, in addition to the flood warning systems envisaged under SO v.

During project selection, preference should be given to the projects addressing climate change that also affect other environmental issues in a positive way. The implementation of joint solutions and pilot actions should be accompanied by risk assessments, especially those related to the development and application of new technologies which could have negative impacts on biodiversity. The possibility of replication of joint solutions should also be taken into consideration (where possible).

As regards implementing provisions related to project selection, integration of core questions on the environmental output of the project into the project application is recommended. The project application form should include a section with a pre-environmental assessment to be undertaken by the project. In addition, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1).

On monitoring, the proposed programme indicators related to the jointly developed solutions and solutions taken up or up scaled by organisations should help to assess, especially in the medium and long term, whether these solutions and pilot actions are developed and applied on a larger scale.

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint solutions and activities and the relevant environmental issues they address, the number and type of stakeholders involved (e.g. public authorities, NGOs, business sector etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has mostly positive impacts. It is expected to contribute to the promotion of the use of energy from renewable sources, soil, water and groundwater management in terms of climate adaptation, sustainable management of forests, potential reduction of CO₂ emissions, development of climate resilient urban areas, preservation of settlements and safeguarding of jobs.

Source: M&E Factory, 2021

Priority Objective 2: "A greener, low-carbon Europe..."

Specific objective iv: Promoting climate change adaptation, disaster risk prevention and resilience, taking into account ecosystem-based approaches

Planned action 1.4: Awareness raising on climate change adaptation and mitigation, especially on local level

Biodiversity: +	Soil: +	Water: +
Climate: +	Air: +	Landscape: +
Human health/Population: +	Cultural heritage and material assets: +	Interactions between the above-mentioned issues

Description of the likely significant effects on the environment:

The type of action 1.4 aims to raise the awareness of – predominantly local – decision makers and the wider public on climate change impacts and related adaptation measures.

Its likely significant impacts on the environment are as follows:

- **positive direct and indirect impacts in short and medium term:** More informed citizens and decision makers on climate change impacts. Awareness raising, especially on local level, helps people understand





the impact of climate change, increases 'climate literacy', encourages changes in their attitudes and behaviour, and helps them to adapt to climate-change-related trends.

- **positive indirect impacts in medium and long term:** Awareness-raising enables informed decision-making and higher engagement of local communities in the region, which play an essential role in addressing climate change and positively affecting biodiversity (e.g. protecting habitats), air (e.g. larger use of public transport, bikes, urban gardening), soil (e.g. reducing soil pollutants), water (e.g. reducing water pollutants), and landscape (e.g. protecting cross-border landscape).

Overall, positive impacts can be expected from interactions among the environmental issues. Thus, informed communities on climate change adaptation and mitigation would help in promoting renewable energy and sustainable transport, which contribute to reducing air pollution in the region.

Measures to reduce or offset significant negative environmental impacts:

Raising awareness on climate change impact should ensure a wide coverage of the population from children and young people to adults, especially in rural and small urban areas, promoting the idea that "no one is too small to make a difference". Synergies should be found with other actions implemented under ISO1 and PO4 (e.g. training activities on climate change) and overlapping should be avoided.

During project selection, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1). Innovative approaches which also ensure wide participation could be given priority.

On monitoring, the proposed programme indicators related to the jointly developed solutions and solutions taken up or up scaled by organisations should help to assess, especially in the medium and long term, whether these activities related to awareness raising have a sustainable impact after project completion.

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of activities and the relevant environmental issues they address, number and type of stakeholders and participants (e.g. public authorities, NGOs, students, etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has exclusively positive impacts. It is expected to contribute to the promotion of the use of energy from renewable sources, energy efficiency, higher preservation of good air quality and/or the improvement of air quality by increasing the use of sustainable transport modes.

Source: M&E Factory, 2021

Priority Objective 2: "A greener, low-carbon Europe..."

Specific objective v: Promoting access to water and sustainable water management

Planned action 2.1: Data collection and monitoring and analysis as well as (interdisciplinary) know-how exchange to improve the knowledge on water quality and ecology, on sustainable water management as well as on flood hazards

Biodiversity: +	Soil: +	Water: +
Climate: +	Air: 0/+	Landscape: 0/+
Human health/Population: +	Cultural heritage and material assets: +	Interactions between the above-mentioned issues

Description of the likely significant effects on the environment:

The type of action 2.1 aims to improve the knowledge of and coordination among relevant stakeholders and decision makers to manage cross-border water bodies, considering water quality, water ecology, flood hazards, water scarcity and drinking water supply.

Its likely significant impacts on the environment are as follows:

- **positive direct impacts in short and medium term:** New or improved knowledge and data on water quality and ecology, on sustainable water management, wastewater treatment, flood hazards in the cross-border region.
- **positive indirect impacts in medium and long term:** Use of data and research results (when applied in the region) is expected to lead to better-informed decision making (especially among public authorities) and evidence-based investments addressing sustainable water management and access to water including the prevention of floods, improvement of the water bodies status, better wastewater management, protection of waters which serve as natural bathing areas, etc. This should also contribute to other





environmental issues, such as protecting habitats, mitigating soil erosion, protecting cross-border water landscape, and mitigating negative consequences on local populations, cultural heritage and tourism.

Overall, positive impacts can be expected from interactions among the environmental issues. For example, data collection and monitoring on water quality or water management would help authorities in ensuring high quality of water supplied to households and visitors.

Measures to reduce or offset significant negative environmental impacts:

Considering the high importance of sustainable water management in the cross-border region, emphasis could be put on knowledge management to ensure that the knowledge and skills gained are used on a continuous basis by relevant stakeholders (especially public authorities). Sustainable collaboration should also be ensured through new or revitalised cooperation networks between public institutions and relevant stakeholders. Data and analysis on wastewater treatment can be recommended, especially in those municipalities where there is a lack of data and this issue still remains to be addressed. Cross-border research and studies on relevant topics such as agriculture, hydropower, tourism and their impacts on water bodies could be considered.

During project selection, preference should be given to the projects addressing water management that also affect other environmental issues in a positive way. As regards implementing provisions related to project selection, integration of core questions on the environmental output of the project into the project application is recommended. The project application form could include a section with a pre-environmental assessment to be undertaken by the project. In addition, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1).

On monitoring, the proposed programme indicators related to the jointly developed solutions and solutions taken up or up scaled by organisations should help to assess, especially in the medium and long term, whether these solutions are developed and being implemented.

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of solutions and the relevant environmental issues they address, number and type of stakeholders involved (e.g. public authorities, NGOs, etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has positive impacts. It is expected to contribute particularly to the water quality, hydromorphology and ecological status of rivers, sustainable use of water resources, reduction of pollution in groundwater and surface water, and flood protection.

Source: M&E Factory, 2021

Priority Objective 2: "A greener, low-carbon Europe..."

Specific objective v: Promoting access to water and sustainable water management

Planned action 2.2: Developing strategies and action plans for more sustainable water management in the border region

Biodiversity: +	Soil: +	Water: +
Climate: +	Air: 0/+	Landscape: 0/+
Human health/Population: +	Cultural heritage and material assets: +	Interactions between the above-mentioned issues

Description of the likely significant effects on the environment:

The type of action 2.2. aims to boost strategic development across the border to allow for sound water bodies and a more sustainable water management in the border region, also involving other relevant sectors such as nature protection.

Its likely significant impacts on the environment are as follows:

- **positive direct impacts in short and medium term:** Harmonised strategies and action plans for a more sustainable water management in the cross-border region;
- **positive indirect impacts in medium and long term:** Cross-border strategies, management and action plans (when effectively implemented) are expected to lead to more synchronised efforts on sustainable water management (e.g. sound water bodies, preventing floods, ensuring good quality of water), which also contributes to better conserving cross-border water habitats, mitigating erosion and protecting water landscapes, as well as mitigating negative consequences on local populations, agriculture and cultural heritage and material assets.





Positive impacts can be expected from interactions among the environmental issues. For example, cross-border strategies and action plans related to protecting the border region from natural hazards (e.g. water management plans) have positive impacts in preventing and/or minimising the negative consequences arising from floods and better preservation of the water landscape area.

Measures to reduce or offset significant negative environmental impacts:

The impact of hydropower and other sectors such as agriculture and tourism on the status of water bodies should be taken into consideration. In addition, coherence and synergies with strategies and plans planned to be developed under type of action 1.2 should be taken into consideration, especially with regard to flood protection and other aspects related to climate change and its impact on water bodies and quality.

During project selection, preference should be given to the projects addressing water management that also affect other environmental issues and economic sectors in a positive way. Involvement of relevant stakeholders on both sides of the border is necessary, especially those that are/will be involved in the future implementation of these strategies and plans. It is also recommended that issues such as “involvement of civil society in participatory decision-making processes” be given priority.

As regards implementing provisions related to project selection, integration of core questions on the environmental output of the project into the project application is recommended. The project application form should include a section with a pre-environmental assessment to be undertaken by the project which help to foresee and avoid potential negative impacts on biodiversity, water bodies, cultural heritage and landscape. In addition, some elements can be highlighted to reduce the project’s carbon footprint (see type of action 1.1).

On monitoring, the proposed programme indicators related to the jointly developed solutions and solutions taken up or up scaled by organisations should help to assess, especially in the medium and long term, whether these strategies and plans are developed and are being implemented.

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint solutions and activities and the relevant environmental issues they address, number and type of stakeholders involved (e.g. public authorities, NGOs, etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has positive impacts. It is expected to contribute particularly to the water quality, hydromorphology and ecological status of rivers, sustainable use of water resources, reduction of pollution in groundwater and surface water, and flood protection.

Source: M&E Factory, 2021

Priority Objective 2: “A greener, low-carbon Europe...”

Specific objective v: Promoting access to water and sustainable water management

Planned action 2.3: Implementing joint solutions and pilot actions including small-scale investments promoting the sustainable water management and sustainable use of water resources

Biodiversity: +/-	Soil: +	Water: +
Climate: +	Air: 0/+	Landscape: +/-
Human health/Population: +	Cultural heritage and material assets: +	Interactions between the above-mentioned issues

Description of the likely significant impacts on the environment:

The type of action 2.3 aims to promote implementing measures for monitoring, protecting and improving the regional surface and ground water bodies and contributing to sustainable use of water resources including drinking water.

Its likely significant impacts on the environment are as follows:

- **positive direct impacts in short to medium term:** Improved capacities in sustainable water management and sustainable use of water resources such as monitoring systems on border-crossing rivers, flood warning systems, enhancing drinking supply in rural areas, etc. However, the impacts may be limited if the joint solutions and pilot actions are not taken up and developed on a larger scale and area (where possible).
- **positive indirect impacts in medium and long term:** The implementation of solutions and pilot actions is expected to lead to positive environmental impacts for the target groups and areas. However, the impacts would be enhanced if they were to be further developed and replicated in other areas and/or on a larger scale (where possible). This type of action is expected to contribute to a number of issues such as enhancing the drinking water supply in rural communities, improving the protection of habitats, mitigating soil erosion,





preventing floods, protecting cross-border landscape as well as mitigating negative consequences on local populations and cultural heritage and material assets.

- **limited negative indirect impacts in short and medium term:** Negative impacts mainly concern activities which could have an impact on biodiversity (habitats, impairment of the ecological connectivity function), soil (land consumption) and landscape fragmentation. On the positive side, measures for natural water retention lead to an improvement in the habitat quality of the riverbed and riparian areas, to a deceleration of flood runoff, to improved lateral connectivity with floodplains, etc. However, further conclusions cannot be drawn regarding indirect impacts in the medium or long term. This impact is uncertain and may be localised depending on the project. Furthermore, it can be assumed that the planned measures are carried out on the one hand within the framework of national and EU legislation (e.g. Water Directive, EU Flood Directive, etc.) and that any planned construction measure is subject to environmental impact assessment.

Overall, positive impacts can be expected from interactions among the environmental issues. For example, joint solutions and pilot actions related to groundwater remediation lead to positive impact on water quality and reduced negative impact on soil.

Measures to reduce or offset significant negative environmental impacts:

Know-how exchange and application of good practices with regard to wastewater treatment can be recommended. Planned actions including small-scale investments should also consider other potential effects on tourism, cultural heritage and agriculture.

During project selection, preference should be given to the projects addressing sustainable management, and the process should also consider the region's landscape and biodiversity. The implementation of joint solutions and pilot actions should be accompanied by risk assessments. The possibility of replication of joint solutions should also be taken into consideration (where possible).

As regards implementing provisions related to project selection, integration of core questions on the environmental output of the project into the project application is recommended. The project application form should include a section with a pre-environmental assessment to be undertaken by the project. In the case of specific projects, the preparation of a concept of measures to monitor environmental impacts and, if necessary, the introduction of corrective interventions is recommended. In addition, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1).

On monitoring, the proposed programme indicators related to the jointly developed solutions and solutions taken up or up scaled by organisations, as well as participation in joint actions during and after the project completion, should help to assess, especially in the medium and long term, whether these solutions and pilot actions are developed and applied on a larger scale (where possible) and whether cooperation between partners is maintained.

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint solutions and activities and the relevant environmental issues they address, number and type of stakeholders involved (e.g. public authorities, NGOs, businesses etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has predominantly positive effects. It is expected to contribute particularly to the water quality, hydromorphology and ecological status of rivers, sustainable use of water resources, reduction of pollution in groundwater and surface water, and flood protection and related sectors such as tourism and agriculture.

Source: M&E Factory, 2021

Priority Objective 2: "A greener, low-carbon Europe..."

Specific objective vii: Enhancing protection and preservation of nature, biodiversity, and green infrastructure, including in urban areas, and reducing all forms of pollution

Planned action 3.1: Data collection and research as well as (interdisciplinary) know-how exchange to gain better knowledge about the region's ecological status and threats

Biodiversity: +	Soil: +	Water: +
Climate: +	Air: +	Landscape: +
Human health/Population: +	Cultural heritage and material assets: +	Interactions between the above-mentioned issues





Description of the likely significant impacts on the environment:

The type of action 3.1 aims to improve the knowledge of and coordination among relevant stakeholders to manage nature protection, green infrastructure and pollution, including of stakeholders other than environmental institutions.

Its likely significant impacts on the environment are as follows:

- **positive direct impacts in short and medium term:** New or improved knowledge and data on the region's ecological status and threats, especially among public authorities, sectorial stakeholders and research institutions in the cross-border region.
- **positive indirect impacts in medium and long term:** Use of data and research results (when applied in the region) is expected to lead to better-informed decision making and evidence-based investments and activities addressing biodiversity and issues related to it, such as preventing extensive species extinction, mitigating erosion, protecting habitats and cross-border landscape, reducing GHG emissions, promoting circular economy and green technology, among others.

Overall, positive impacts can be expected from interactions among the environmental issues. For example, research and data on possible ecological threats would lead to informed decisions and actions related to habitats' protection and/or minimising the negative consequences on the landscape.

Measures to reduce or offset significant negative environmental impacts:

Sustainable networking and collaboration between research organisations could be highlighted (without overlapping with activities foreseen under ISO1).

During project selection, preference should be given to the projects addressing biodiversity that also affect other environmental issues in a positive way. As regards implementing provisions related to project selection, integration of core questions on the environmental output of the project into the project application is recommended. The project application form could include a section with a pre-environmental assessment to be undertaken by the project. In addition, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1)

On monitoring, the proposed programme indicators related to the jointly developed solutions and solutions taken up or up scaled by organisations should help to assess, especially in the medium and long term, whether these solutions are developed and are being implemented.

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint solutions and the relevant environmental issues they address, number and type of participants (e.g. public authorities, NGOs, etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Non-implementation of the programme would lead to negative impacts on the environment, especially with regard to the conservation status of habitats and species. On the other hand, the programme implementation, and particularly this type of action, could contribute to the conservation status of nature reserves/protected areas, the protection and conservation of animal and plant species, bird species, potential reduction of the risk levels in the Red List for threatened groups of species and biotopes, sustainable management of forests and their biodiversity, development of relevant areas in terms of sustainable, integrative spatial planning, as well as preservation, protection and maintenance of recreational areas and cultural heritage.

Source: M&E Factory, 2021

Priority Objective 2: "A greener, low-carbon Europe..."

Specific objective vii: Enhancing protection and preservation of nature, biodiversity, and green infrastructure, including in urban areas, and reducing all forms of pollution

Planned action 3.2: Developing strategies and action plans to enable joint protection and preservation approaches in the cross-border region

Biodiversity: +	Soil: +	Water: +
Climate: +	Air: +	Landscape: +
Human health/Population: +	Cultural heritage and material assets: +	Interactions between the above-mentioned issues

Description of the likely significant effects on the environment:





The type of action 3.2 aims to boost the strategic development across the border to better protect and restore the regions biodiversity and green infrastructure as well as to reduce pollution, also taking into account a variety of society's demands, contributing to societal health, human well-being, and the green economy.

Its likely significant impacts on the environment are as follows:

- **positive direct impacts in short and medium term:** Harmonised strategies and action plans on joint protection and preservation of biodiversity, green infrastructure in the cross-border region.
- **positive indirect impacts in medium and long term:** Cross-border strategies, management and action plans should lead to more synchronised efforts in preserving biodiversity, minimising soil, water and air pollution, promoting circular economy, green infrastructure and technology as well as mitigating negative consequences on cultural heritage and sensitive areas such as grasslands.

Overall, positive impacts can be expected from interactions among the environmental issues. For example, cross-border strategies and action plans actions related to preserving biodiversity have positive impact in preserving the landscape area, special habitats and sustainable management of forests, among others.

Measures to reduce or offset significant negative environmental impacts:

Coherence and synergies with strategies and plans developed or planned to be developed should be taken into consideration, especially with regard to biodiversity, agriculture, circular economy, etc.

During project selection, preference should be given to the projects addressing biodiversity that also affect other environmental issues and economic sectors in a positive way. Involvement of relevant stakeholders on both sides of the border is necessary, especially those that are/will be involved in the future implementation of these strategies and plans. It is also recommended that issues such as "involvement of civil society in participatory decision-making processes" be given priority.

As regards implementing provisions related to project selection, integration of core questions on the environmental output of the project into the project application is recommended. The project application form should include a section with a pre-environmental assessment to be undertaken by the project. In addition, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1)

On monitoring, the proposed programme indicators related to the jointly developed solutions and solutions taken up or up scaled by organisations should help to assess, especially in the medium and long term, whether these strategies and plans are developed and are being implemented.

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint solutions and activities and the relevant environmental issues they address, number and type of stakeholders involved (e.g. public authorities, NGOs, business sector etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has positive impacts. It is expected to contribute particularly to the conservation status of nature reserves/protected areas, the protection and conservation of animal and plant species, breeding bird species, potential reduction of the risk levels in the Red List for threatened groups of species and biotopes, sustainable management of forests and their biodiversity, development of relevant areas in terms of sustainable, integrative spatial planning, as well as preservation, protection and maintenance of recreational areas and cultural heritage.

Source: M&E Factory, 2021

Priority Objective 2: "A greener, low-carbon Europe..."

Specific objective vii: Enhancing protection and preservation of nature, biodiversity, and green infrastructure, including in urban areas, and reducing all forms of pollution

Planned action 3.3: Implementing joint solutions and pilot actions including small-scale investments contributing to protecting nature or reducing pollution

Biodiversity: +	Soil: +	Water: +
Climate: +	Air: +	Landscape: +/-
Human health/Population: +	Cultural heritage and material assets: +	Interactions between the above-mentioned issues

Description of the likely significant effects on the environment:

The type of action 3.3 aims at the tangible implementation of measures contributing to preserve and restore biodiversity, green infrastructure or to reduce pollution, including also circular economy and green technology approaches.





Its likely significant impacts on the environment are as follows:

- **positive direct impacts in short to medium term:** Improved capacities in protecting nature and biodiversity and reducing pollution, including green infrastructure and technology, circular economy, etc. However, the impacts may be limited if the joint solutions and pilot actions are not taken up and developed on a larger scale (where possible).
- **positive indirect impacts in medium and long term:** The implementation of solutions and pilot actions is expected to lead to positive environmental impacts for the target groups and areas. The impacts could be enhanced if they are further developed and replicated in other areas and/or on a larger scale (where possible). This type of action is expected to contribute to various issues such as improving protection of habitats and endangered species, reducing soil pollution, promoting circular economy and sustainable use of resources, among others.
- **limited negative indirect impacts in short and medium term:** Temporary, limited negative impacts of a local and reversible nature might be expected such as those related to green infrastructure for public recreation and leisure time and its impact on land consumption. The level of detail of the IP however, does not allow more detailed forecasts. The impacts are uncertain and may be localised depending on the project.

Overall, positive impacts can be expected from interactions among the environmental issues. For example, joint solutions and pilot actions related to promoting green infrastructure lead to positive impact in biodiversity and/or minimises the negative impact on air and therefore on the population.

Measures to reduce or offset significant negative environmental impacts:

Coherence and synergies with actions planned to be implemented under PO4 should be taken into consideration (e.g. integrating the topic of sustainability in the education system).

During project selection, preference should be given to the projects addressing biodiversity and nature protection that also affect other environmental issues in a positive way (e.g. resource efficiency, reduction of emissions, etc.). The implementation of joint solutions and pilot actions should be accompanied by risk assessments, especially those related to green infrastructure and technology. When promoting certain technologies and/or concepts, life cycle analysis approaches as well as impact assessments or their targeted spatial use could be recommended. In the case of small-scale infrastructure, attention should be paid to the long-term use of the site. The possibility of replication of joint solutions should also be taken into consideration (where possible).

As regards implementing provisions related to project selection, integration of core questions on the environmental output of the project into the project application is recommended. The project application form should include a section with a pre-environmental assessment to be undertaken by the project. In addition, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1).

On monitoring, the proposed programme indicators related to the jointly developed solutions and solutions taken up or up scaled by organisations should help to assess, especially in the medium and long term, whether these solutions and pilot actions are developed and applied on a larger scale (where possible).

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint solutions and activities and the relevant environmental issues they address, number and type of stakeholders involved (e.g. public authorities, NGOs, business sector etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has positive effects. It is expected to contribute particularly to the conservation status of nature reserves/protected areas, the protection and conservation of animal and plant species, breeding bird species, potential reduction of the risk levels in the Red List for threatened groups of species and biotopes, sustainable management of forests and their biodiversity, development of relevant areas in terms of sustainable, integrative spatial planning, as well as preservation, protection and maintenance of recreational areas and cultural heritage and sustainable use of resources.

Source: M&E Factory, 2021

Priority Objective 2: "A greener, low-carbon Europe..."

Specific objective vii: Enhancing protection and preservation of nature, biodiversity, and green infrastructure, including in urban areas, and reducing all forms of pollution

Planned action 3.4: Awareness raising activities on the need of nature protection and reducing pollution at local and regional level

Biodiversity: +	Soil: +	Water: +
Climate: +	Air: +	Landscape: +





Human health/Population: +	Cultural heritage and material assets: +	Interactions between the above-mentioned issues
<p><i>Description of the likely significant effects on the environment:</i></p> <p>The type of action 3.4 aims to improve the awareness of decision makers and stakeholders, local actors and of the general public towards biodiversity, green infrastructure and related ecosystem services, as well as towards reducing pollution, aiming at changes of attitude and behaviour.</p> <p><i>Its likely significant impacts on the environment are as follows:</i></p> <ul style="list-style-type: none"> • positive direct and indirect impacts in short and medium term: More informed citizens and decision makers on nature protection, biodiversity and reduction of pollution. Awareness raising, especially on local level, helps people understand that biodiversity and healthy nature are important for the long-term economic development and encourages changes in their behaviour. • positive indirect impacts in medium and long term: Awareness raising, especially on local level, contributes to a better understanding and a higher involvement of people in actions that support nature protection and pollution reduction. In addition, it enables informed decision-making, which plays an essential role in addressing challenges related to protecting habitats, reducing use of plastic, reducing water pollutants, use of public transport and bikes as well as protecting cross-border landscape. <p>Positive impacts can be expected from interactions among the environmental issues. Thus, informed communities on nature protection could help in reducing of soil and air pollutants, which affects people's health and the natural ecosystem of the border region.</p> <p><i>Measures to reduce or offset significant negative environmental impacts:</i></p> <p>Raising awareness on nature protection and reducing pollution should ensure a wide coverage of the population from children and young people to adults in rural and urban areas, promoting the idea that "no one is too small to make a difference". Synergies should be found with other actions implemented under PO4 (e.g. environmental awareness and circular economy) and overlapping should be avoided.</p> <p>During project selection, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1). Innovative approaches, which also ensure wide participation could be given priority.</p> <p>On monitoring, the proposed programme indicators related to the participations in joint actions across borders during and after project completion should help assess the involvement of various stakeholders and the public and the sustainability of the results of this type of action after project completion.</p> <p>At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of activities and the relevant environmental issues they address, number and type of stakeholders and participants (e.g. public authorities, NGOs, students, etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.</p> <p><i>Comment on the key questions:</i></p> <p>Compared to the zero scenario, this type of action has exclusively positive impacts. It is expected to contribute particularly to increase awareness of biodiversity and the importance of adopting sustainable lifestyles in order to protect natural resources.</p>		

Source: M&E Factory, 2021

Priority Objective 3: "A more connected Europe by enhancing mobility..."

Specific objective iii: Developing and enhancing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross-border mobility

Planned action 4.1: Cross-border data collection and know-how exchange on cross-border traffic patterns and the mobility behaviour of the population in the programme region

Biodiversity: +	Soil: (land use and sealing covered under landscape)	Water: 0
Climate: 0/+	Air: 0/+	Landscape: 0/+
Human health/Population: 0/+	Cultural heritage and material assets: 0/+	Interactions between the above-mentioned issues
<p><i>Description of the likely significant effects on the environment:</i></p> <p>The type of action 4.1 aims to improve the knowledge needed to harmonise and enhance cross-border sustainable mobility services of stakeholders and decision makers in the programme area.</p>		





Its likely significant impacts on the environment are as follows:

- **positive direct impacts in short and medium term:** New or improved knowledge and data on cross-border traffic patterns and the mobility behaviour of the population;
- **positive indirect impacts in medium and long term:** Use of data and research results (when applied in the region) is expected to lead to better-informed decision making and evidence-based investments and activities addressing mobility and environmental issues affected by it such as air and noise pollution, land use, natural resources and historical and cultural heritage.

Overall, positive impacts can be expected from interactions among the environmental issues. For example, research and data on cross-border traffic patterns, would also support measures related to the preservation of natural resources, cultural heritage and landscape in the cross-border region.

Measures to reduce or offset significant negative environmental impacts:

Additional emphasis could be put on the collaboration between relevant stakeholders from various sectors to ensure that there is an exchange and use of data that are relevant for cross-border mobility, such as data on tourism, air and noise pollution, use of fossil fuels etc.

During project selection, preference should be given to the projects addressing mobility as well as a number of environmental issues and sectors related to it. As regards implementing provisions related to project selection, integration of core questions on the environmental output of the project into the project application is recommended. Some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1)

On monitoring, the proposed programme indicators related to the jointly developed solutions and solutions taken up or up scaled by organisations should help to assess, especially in the medium and long term, whether these solutions are developed and are being implemented.

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint solutions and the relevant environmental issues they address, number and type of stakeholders involved (e.g. public authorities, NGOs, etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has positive impacts. It is expected to indirectly contribute to the reduction of air pollutants caused directly by traffic and the indirect increase in traffic volume, preservation of good air quality and/or the improvement of air quality, reduction of energy demand caused by traffic, minimising noise pollution caused by traffic.

Source: M&E Factory, 2021

Priority Objective 3: "A more connected Europe by enhancing mobility..."

Specific objective iii: Developing and enhancing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross-border mobility

Planned action 4.2: Developing strategies and action plans aiming at a better organisation and linking of different modes of sustainable transport

Biodiversity: +/-	Soil: (some aspects covered under landscape)	Water: 0
Climate: +/-	Air: +/-	Landscape: +/-
Human health/Population: +/-	Cultural heritage and material assets: +/-	Interactions between the above-mentioned issues

Description of the likely significant effects on the environment:

The type of action 4.2 aims to boost strategic development across the border to allow for better organised and more sustainable mobility services, enhanced cross-border multimodality as well as improved public transport and bike connectivity for commuting and touristic travel across the border.

Its likely significant impacts on the environment are as follows:

- **positive direct impacts in short and medium term:** Harmonised strategies and action plans aiming at a better organisation and linking of different modes of sustainable transport across the border.
- **positive indirect impacts in medium and long term:** Cross-border strategies, management and action plans (when effectively implemented) should lead to more synchronised efforts in increasing the use of sustainable transport modes, reducing air and noise pollution caused by traffic and promoting renewable energy sources.





- **limited negative indirect impact in medium term:** Strategies and actions promoting cross-border mobility could potentially lead to increased traffic and noise pollution caused by traffic, land use and soil sealing, increased pressure on biodiversity and natural resources (e.g. due to an increase in the number of daily visitors). The impacts are expected to be limited and reversible, especially when a close collaboration among authorities from different sectors is ensured.

Positive and limited negative impacts can be expected from interactions among the environmental issues. For example, cross-border strategies and action plans related to sustainable cross-border mobility would lead to reduced air pollution. However, negative indirect impacts related to land use and noise pollution should be foreseen and avoided.

Measures to reduce or offset significant negative environmental impacts:

Considering the impact of the COVID-19 pandemic, know-how can be shared on necessary measures to be taken in order to ensure the safety of people using public transport.

During project selection, preference should be given to the projects addressing sustainable mobility and other environmental issues related to it. Involvement of relevant stakeholders on both sides of the border is necessary, especially those that are/will be involved in the future implementation of these strategies and plans. Furthermore, early involvement of civil society and the public should be given priority since it minimises the risk for municipalities and project operators, especially with regard to the intended realisation of the strategies through investments.

As regards implementing provisions related to project selection, integration of core questions on the environmental output of the project into the project application is recommended. The project application form should include a section with a pre-environmental assessment to be undertaken by the project which help to foresee and avoid potential negative impacts. In addition, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1)

On monitoring, the proposed programme indicators related to the jointly developed solutions and solutions taken up or up scaled by organisations should help to assess, especially in the medium and long term, whether these strategies and plans are developed and are being implemented.

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint solutions and activities and the relevant environmental issues they address, number and type of stakeholders and the citizens (e.g. public authorities, NGOs, the public etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has predominantly positive effects. It is expected to indirectly contribute to the reduction of air pollutants caused directly by traffic and the indirect increase in traffic volume, preservation of good air quality and/or the improvement of air quality, reduction of energy demand caused by traffic. However, particular focus is needed with regard to minimising noise pollution caused by traffic as well as pressures on land and natural habitats.

Source: M&E Factory, 2021

Priority Objective 3: "A more connected Europe by enhancing mobility and regional ICT connectivity..."

Specific objective iii: Developing and enhancing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross-border mobility

Planned action 4.3: Implementing joint solutions and pilot actions including small-scale investments to better connect regional and local rail and bike infrastructure across the border and to enhance the sustainability and safety of cross-border mobility

Biodiversity: +/-	Soil: (some aspects covered under landscape)	Water: 0
Climate: +/-	Air: +/-	Landscape: +/-
Human health/Population: +/-	Cultural heritage and material assets: +/-	Interactions between the above-mentioned issues

Description of the likely significant effects on the environment:

The type of action 4.3 aims to promote the implementation of measures enabling or encouraging people (mainly tourists and commuters) to organise and put their journeys in practice in the border area or across the border in a safer and more sustainable way, including the provision of useful tools that help them do so.

Its likely significant impacts on the environment are as follows:





- **positive direct impacts in short to medium term:** Improved connectivity and safety across the border. The impact may be limited if the joint solutions and pilot actions are not taken up and developed on a larger scale and area (where possible);
- **positive indirect impacts in medium and long term:** The implementation of solutions and pilot actions is expected to have positive environmental impacts for the targeted groups and areas. If developed and replicated in other areas and/or on a larger scale (where possible) this type of action is expected to have a positive impact resulting from increased multimodality in existing transport systems and thus promote greener transports. These will have a positive impact on air and climate by potentially reducing GHG emissions, air pollutants, noise and other issues related to human health. Optimised, interconnected and sustainable transport networks would also improve the energy efficiency of the domestic ways of life and of productive sectors.

Spatially identifiable positive effects related to biodiversity, soil and landscape are possible where a shift from motorised private transport to public transport is achieved. In urban areas, transport optimisation would be a major asset for a sustainable development.

- **limited negative indirect impacts in short and medium term:** Some indirect negative impacts can be expected especially at air, noise and climate levels due to the expected increase of visitors and traffic. At the same time indirect negative effects might occur on biodiversity if the traffic increases in certain areas and new logistical and multimodal infrastructures plans are developed. Biodiversity might be under pressure from increased traffic, in particular species sensitive to noise. Land take can cause negative impacts on urban biodiversity, landscape and cultural assets. These can be insignificant for existing routes. However, in the long term, positive effects are expected with regard to climate, air and human health.

Overall, positive and limited negative impacts can be expected from interactions among the environmental issues. For example, increased sustainable cross-border connectivity would lead to improved air quality. However, negative impacts related to land take, biodiversity and noise pollution may arise and should be taken into account.

Measures to reduce or offset significant negative environmental impacts:

Considering the impact of the COVID-19 pandemic, actions can be proposed to ensure the safety of people using public transport. Use of existing infrastructure should be highlighted to reduce pressure on land take.

During project selection, preference should be given to the projects addressing sustainable mobility and other environmental issues related to it such as landscape and biodiversity. Furthermore, early involvement of civil society and the public should be given priority since it minimises the risk for municipalities and project operators, especially with regard to small-scale investments. As regards implementing provisions related to project selection, integration of core questions on the environmental output of the project into the project application is recommended. The project application form should include a section with a pre-environmental assessment to be undertaken by the project which help to foresee and avoid potential negative impacts. In addition, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1).

On monitoring, the proposed programme indicators related to the jointly developed solutions and solutions taken up or up scaled by organisations should help to assess, especially in the medium and long term, whether these solutions and pilot actions are developed and applied on a larger scale (where possible).

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint solutions and the relevant environmental issues they address, number and type of stakeholders involved (e.g. public authorities, NGOs, the public etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has mostly positive impacts. It is expected to contribute to the reduction of air pollutants caused directly by traffic and the indirect increase in traffic volume, preservation of good air quality and/or the improvement of air quality, reduction of energy demand caused by traffic. However, particular focus is needed with regard to minimising noise pollution caused by traffic as well as pressures on land and natural habitats.

Source: M&E Factory, 2021

Priority Objective 4: "A more social and inclusive Europe..."

Specific objective ii: Improving equal access to inclusive and quality services in education, training and lifelong learning through developing accessible infrastructure

Planned action 5.1: Cross-border research and data collection as well as developing strategies to improve coordinated decision making on education and training issues across the border

Biodiversity: 0/+	Soil: not relevant	Water: not relevant
Climate: 0/+	Air: 0/+	Landscape: 0/+





Human health/Population: 0/+	Cultural heritage and material assets: 0/+	Interactions between the above-mentioned issues
<p><i>Description of the likely significant impacts on the environment:</i></p> <p>The type of action 5.1 aims to create a solid base of information on main characteristics of training needs and offer as well as create a strategic framework for development in the border region, in order to enable both regional decision-makers and regional stakeholders to take coordinated decisions on education and training issues.</p> <p><i>Its likely significant impacts on the environment are as follows:</i></p> <ul style="list-style-type: none"> • positive indirect impacts in short, medium and long term: New or improved knowledge and data on competences and training possibilities, especially as regards sustainability and digitalisation is expected to lead to better-informed decisions and activities addressing awareness raising and skill development and training, which could in medium and long-term support the preservation of biodiversity and natural resources, promote circular economy, resource efficiency and innovative solutions addressing environmental issues. <p>Positive impacts can be expected from interactions among the environmental issues. For example, research and data on possible training needs on circular economy could lead in long-term to new/improved solutions related to circular economy and therefore contribute to resource efficiency.</p> <p><i>Measures to reduce or offset significant negative environmental impacts:</i></p> <p>Additional emphasis could be put on the long-term collaboration between relevant institutions which should enable sustainable cooperation in the future.</p> <p>During project selection, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1).</p> <p>On monitoring, the proposed programme indicators related to the jointly developed solutions and solutions taken up or up scaled by organisations should help to assess, especially in the medium and long term, whether these solutions are developed and are being implemented.</p> <p>At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint solutions and the relevant environmental issues they address, number and type of stakeholders involved (e.g. public authority, educational institutions, NGO, etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.</p> <p><i>Comment on the key questions:</i></p> <p>Compared to the zero scenario, this type of action has exclusively positive impacts, mainly in medium and long term. It is expected to contribute particularly to increase awareness and skill development which are expected to lead to more sustainable lifestyles and potential solutions addressing various environmental issues (e.g. circular economy, green technology).</p>		

Source: M&E Factory, 2021

Priority Objective 4: "A more social and inclusive Europe ..."

Specific objective ii: Improving equal access to inclusive and quality services in education, training and lifelong learning through developing accessible infrastructure

Planned action 5.2: Implementing actions in cross-border education and training

Biodiversity: 0/+	Soil: not relevant	Water: not relevant
Climate: 0/+	Air: 0/+	Landscape: 0/+
Human health/Population: 0/+	Cultural heritage and material assets: 0/+	Interactions between the above-mentioned issues
<p><i>Description of the likely significant impacts on the environment:</i></p> <p>The type of action 5.2 is to help stakeholders to jointly develop and implement methods and tools enabling them to design and provide more effective training and educational services with a special focus on digitalisation.</p> <p><i>Its likely significant impacts on the environment are as follows:</i></p> <ul style="list-style-type: none"> • positive indirect impacts in short, medium and long term related to: improved capacities and knowledge in the border region, especially regarding specific and innovative approaches, methods and training tools focused on environmental consciousness and protection, climate change, sustainability, the use of digital technologies and support of SMEs in their digital transformation and circular economy. In medium and long-term these actions are expected to support the preservation of biodiversity and natural 		





resources, promoting circular economy, resource efficiency and innovative solutions addressing environmental issues.

Positive impacts can be expected from interactions among the environmental issues. For example, trainings on circular economy could lead to new/improved solutions related to circular economy in long-term, and therefore contribute to resource efficiency.

Measures to reduce or offset significant negative environmental impacts:

Regarding the support of SMEs in their digital transformation and environmental consciousness and circular economy, particular emphasis should be put on helping to restructure and revitalise sectors most heavily dependent on traditional industries and support the economic diversification of rural areas, especially in the fields of green technologies, renewable energy sources and eco-tourism.

During project selection, preference could be given to the projects which also incorporate environmental issues in their training and education activities. As regards implementing provisions related to project selection, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1).

On monitoring, the proposed programme indicators related to the jointly developed solutions and solutions taken up or up scaled by organisations as well as participations in joint actions during and after the project completion should help to assess, especially in the medium and long term, whether these solutions and pilot actions are developed and applied on a larger scale (where possible) and if cooperation between partners is maintained.

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint solutions and activities and the relevant environmental issues they address, number and type of stakeholders involved, the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has exclusively positive impacts, mainly in medium and long term. It is expected to contribute particularly to increase awareness and skill development which are expected to lead to adopting sustainable lifestyles and potential solutions addressing various environmental issues such as climate change, air pollution and resources efficiency, etc.

Source: M&E Factory, 2021

Priority Objective 4: "A more social and inclusive Europe ..."

Specific objective ii: Improving equal access to inclusive and quality services in education, training and lifelong learning through developing accessible infrastructure

Planned action 5.3: Implementing joint training actions focusing on language and intercultural aspects as well as labour-market needs

Biodiversity: 0/+	Soil: not relevant	Water: not relevant
Climate: 0/+	Air: 0/+	Landscape: 0/+
Human health/Population: 0/+	Cultural heritage and material assets: 0/+	Interactions between the above-mentioned issues

Description of the likely significant effects on the environment:

The type of action 5.3 aims to deliver formal and informal training events to enhance the language and intercultural competences of the local populations and to develop skills of local and regional workforce, applicable on the labour-market of both countries with a special focus on digitalisation, taking into account also formal, non-formal and informal education approaches.

Its likely significant impacts on the environment are as follows:

- **positive indirect impacts in short, medium and long term** related to: improved capacities and knowledge among business actors in the region in key areas like digitalisation, climate change adaptation, environmental awareness or circular economy, as well as strengthened capacity of all groups of the society to address future challenges such as climate change or digitalisation. In medium and long-term these activities help address environmental challenges and promote circular economy, resource efficiency and solutions addressing environmental issues.

Positive impacts can be expected from interactions among the environmental issues. For example, trainings on circular economy could lead to new/improved solutions related to circular economy in long-term, and therefore contribute to resource efficiency.





Measures to reduce or offset significant negative environmental impacts:

As suggested under the type of action 5.2, emphasis should be put on helping to restructure and revitalise sectors most heavily dependent on traditional industries and support the economic diversification of rural areas in the fields of environmental technologies, renewable energy sources and eco-tourism, among others. Cooperation in the field of local and regional employment policies aimed at safeguarding and creating new employment opportunities in eco innovation is also recommended.

During project selection, preference could be given to the projects which also incorporate environmental issues in their training and education activities. As regards implementing provisions related to project selection, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1).

On monitoring, the proposed programme indicators related to the participations in joint training schemes and completion of training schemes should help to keep track of the pool of competences developed in the region. At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of education and training activities and the relevant environmental issues they address, number and type of participants, the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has exclusively positive impacts, mainly in medium and long term. It is expected to contribute particularly to increase capacities which are expected to lead to adopting sustainable lifestyles and potential solutions addressing various environmental issues such as climate change, air pollution and resources efficiency, etc.

Source: M&E Factory, 2021

Priority Objective 4: "A more social and inclusive Europe ..."

Specific objective vi: Enhancing the role of culture and sustainable tourism in economic development, social inclusion and social innovation

Planned action 6.1: Cross-border data collection and know-how exchange in the field of tourism and culture to better understand the cross-border tourism landscape and potential

Biodiversity: 0/+	Soil: 0/+	Water: 0/+
Climate: 0	Air: 0	Landscape: +
Human health/Population: 0/+	Cultural heritage and material assets: +	Interactions between the above-mentioned issues

Description of the likely significant impacts on the environment:

The type of action 6.1 aims to create a solid base of information on main characteristics of the cultural assets and services of tourism in the border area.

Its likely significant impacts on the environment are as follows:

- **positive direct impacts in short and medium term:** New or improved knowledge and data on main characteristics of the cultural assets and services of tourism in the region.
- **positive indirect impacts in medium and long term:** Use of data and knowledge (when applied in the region) would lead to better-informed decision making and evidence-based investments and activities addressing tourism and cultural heritage including systematic visitor monitoring, monitoring the cultural heritage, cultural landscape assets, etc.

Overall, positive impacts can be expected from interactions among the environmental issues. For example, research and data on cultural assets, would also support measures related to the preservation of natural resources, cultural heritage and landscape in the cross-border region.

Measures to reduce or offset significant negative environmental impacts:

Additional emphasis could be put on the collaboration between relevant stakeholders from various sectors to ensure that there is an exchange and use of data covering tourism, cross-border mobility, air and noise pollution, climate change, use of fossil fuels etc.

During project selection, preference could be given to the projects which incorporate environmental issues. As regards implementing provisions related to project selection, integration of core questions on the environmental output of the project into the project application is recommended. The project application form should include a section with a pre-environmental assessment to be undertaken by the project. In addition, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1).





On monitoring, the proposed programme indicators related to the jointly developed solutions and solutions taken up or up scaled by organisations should help to assess, especially in the medium and long term, whether these solutions are developed and are being implemented.

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint solutions and activities and the relevant environmental issues they address, number and type of stakeholders involved (e.g. public authorities, NGO etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has positive impacts. It is expected to indirectly contribute to the preservation, protection and maintenance of cultural heritage and the diversity of the historically grown cultural landscape.

Source: M&E Factory, 2021

Priority Objective 4: “A more social and inclusive Europe ...”

Specific objective vi: Enhancing the role of culture and sustainable tourism in economic development, social inclusion and social innovation

Planned action 6.2: Developing cross-border strategies and action plans to allow a better strategic embedment of projects addressing culture and tourism

Biodiversity: +/-	Soil: +/-	Water: +/-
Climate: +/-	Air: +/-	Landscape: +/-
Human health/Population: +/-	Cultural heritage and material assets: +/-	Interactions between the above-mentioned issues

Description of the likely significant impacts on the environment:

The type of action 6.2 aims to provide a strategic framework for future tourism projects in the cross-border region.

Its likely significant impacts on the environment are as follows:

- **positive direct impacts in short and medium term:** Harmonised strategies and action plans focused on tourism and cultural heritage;
- **positive indirect impacts in medium and long term:** Cross-border strategies, management and action plans (when effectively implemented) should lead to more synchronised efforts in promoting and developing tourism and cultural heritage in the region, including sustainable travelling.
- **negative indirect impacts in medium and long term:** On one hand, strategies and actions promoting tourism and cultural heritage are expected to increase the number of visitors and the projects focused on tourism. On the other hand, these could lead to increased traffic and noise pollution caused by traffic, land use and soil sealing as well as increased pressure on natural and cultural heritage, biodiversity and natural resources. These impacts can be limited by ensuring a wide participation of stakeholders and citizens during the drafting of the strategies and plans, as well as by carrying out ex-ante environmental assessments and preparing visitor management plans.

Positive and negative impacts can be expected from interactions among the environmental issues. For example, cross-border strategies and action plans related to tourism are expected to improve and promote sustainable tourism development. However, potential indirect negative impacts related to increased traffic, noise pollution and pressure on cultural heritage should be foreseen and avoided.

Measures to reduce or offset significant negative environmental impacts:

Aligned with the type of action 6.1, Visitor Management Action plans can be specifically foreseen to mitigate any risk related to increased pressure on cultural heritage and landscape due to a high number of visitors.

During project selection, preference should be given to the projects incorporating environmental issues and sectors affected by tourism development. Involvement of relevant stakeholders on both sides of the border is necessary, especially those that are/will be involved in the future implementation of these strategies and plans. It is also recommended that issues such as involvement of civil society and the public be given priority.

As regards the implementing provisions related to project selection, integration of core questions on the environmental output of the project into the project application is recommended. The application form should include a section with a pre-environmental assessment to be undertaken by the project which help to foresee and avoid potential negative impacts. In addition, some elements can be highlighted to reduce the project’s carbon footprint (see type of action 1.1).





On monitoring, the proposed programme indicators related to the jointly developed solutions and solutions taken up or up scaled by organisations should help to assess, especially in the medium and long term, whether these strategies and plans are developed and are being implemented. At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint solutions and activities and the relevant environmental issues they address, number and type of stakeholders involved (e.g. public authority, business associations, NGOs), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has mainly positive impacts. It is expected to contribute to the preservation, protection and maintenance of cultural heritage and landscape. However, particular focus is needed with regard to minimising noise pollution caused by traffic as well as pressures on natural and cultural heritage, biodiversity, etc.

Source: M&E Factory, 2021

Priority Objective 4: "A more social and inclusive Europe..."

Specific objective vi: Enhancing the role of culture and sustainable tourism in economic development, social inclusion and social innovation

Planned action 6.3: Implementing actions including small-scale infrastructure developments for sustainable culture and tourism development in the cross-border region

Biodiversity: +/-	Soil: +/-	Water: +/-
Climate: +/-	Air: +/-	Landscape: +/-
Human health/Population: +/-	Cultural heritage and material assets: +/-	Interactions between the above-mentioned issues

Description of the likely significant impacts on the environment:

The type of action 6.3 aims to prepare and implement measures including small-scale investments in cultural and natural heritage sites that demonstrate added value.

Its likely significant impacts on the environment are as follows:

- **positive direct impacts in short to medium term:** Improved tourism offer and products in the cross-border region through joint labels and key theme, joint (cross-border) destinations, soft mobility offers, cycle paths, bike parking (for overnight stays) or e-charging stations for e-bikes, digital information for tourists, etc.;
- **positive indirect impacts in medium and long term:** Tourism small-scale infrastructures, is expected to improve the preservation of natural and cultural heritage, protected areas, as well as promotion and use of sustainable and greener transport modes and use of digital information. In particular, spatially identifiable positive effects, related to air, biodiversity, soil and landscape, are possible where a shift from motorised private transport to soft mobility offers, cycle paths is achieved.
- **negative direct and indirect impacts in short and medium term:** Some negative impacts are expected, either directly through small-scale interventions (local impact on land consumption, habitat disturbance, fragmentation, cultural assets) or indirectly due to increased economic activity and traffic in tourist attractions (traffic, emissions, waste, impact on climate, noise pollution etc.). However, in case of existing routes, some effects related to land take and its negative impacts on urban biodiversity, landscape and cultural assets can be insignificant.

Overall, it is important to note that a high number of activities are aimed at improving services, marketing and communication and no significant negative impacts are expected. As regards small-scale infrastructure interventions, the level of detail of the IP does not allow more detailed forecasts. However, in general, this impact may be localised depending on the project. The exact impact will also depend largely on the type and number of projects funded.

Positive and negative impacts can be expected from interactions among the environmental issues. For example, increased small-scale investment in soft mobility offers, cycle paths would lead to improved air quality. However, negative impacts related to land take, biodiversity, noise pollution and pressure on natural and cultural heritage may arise and should be taken into account.

Measures to reduce or offset significant negative environmental impacts:

Considering the current pandemic and future health crises, focus should be also put on integrating activities related to human health (e.g. Health protocols for service providers, tour guides, etc.). In addition, the planned actions





should ensure the sustainable and long-term use of the natural and cultural heritage sites, and any potential negative impact on the other environmental issues.

During project selection, preference should be given to projects that address environmental issues in a positive way, such as save resources and land, avoid fragmentation effects in the creation and design of new tourist paths, promote public and sustainable transport as well as support the development of regional markets and local supply chains.

As regards the implementing provisions related to project selection, integration of core questions on the environmental output of the project into the project application is recommended. The application form should include a section with a pre-environmental assessment to be undertaken by the project which help to foresee and avoid potential negative impacts. In addition, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1).

On monitoring, the proposed programme indicators related to the jointly developed solutions and solutions taken up or up scaled by organisations as well as participations in joint actions during and after the project completion should help to assess, especially in the medium and long term, whether these solutions and pilot actions are developed and applied on a larger scale (where possible) and if cooperation between partners is maintained.

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint solutions and activities and the relevant environmental issues they address, number and type of stakeholders involved (e.g. public authority, business associations, NGOs), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has mainly positive impacts. It is expected to indirectly contribute to the preservation, protection and maintenance of cultural heritage, the diversity of the historically grown cultural landscape and promotion of sustainable mobility. Particular focus is needed with regard to minimising negative impacts arising from increased traffic and associated emissions and pressures on natural and cultural heritage, biodiversity, etc.

Source: M&E Factory, 2021

Priority Objective 4: "A more social and inclusive Europe..."

Specific objective vi: Enhancing the role of culture and sustainable tourism in economic development, social inclusion and social innovation

Planned action 6.4: Implementing thematic trainings and skill development of stakeholders in the culture and tourism sector

Biodiversity: 0/+	Soil: 0/+	Water: 0/+
Climate: 0/+	Air: 0/+	Landscape: 0/+
Human health/Population: +	Cultural heritage and material assets: +	Interactions between the above-mentioned issues

Description of the likely significant impacts on the environment:

The type of action 6.4 aims to increase the level of knowledge and develop the skills of stakeholders of touristic attractions and services at the local and sub-regional level. Possible activities should be embedded in the strategic framework of the border region.

Its likely significant impacts on the environment are as follows:

- **positive indirect impacts in short, medium and long term:** Improved capacities and knowledge among stakeholders of the tourism industry in areas related to nature tourism, sustainable products, cultural heritage, agricultural product chains (local cuisine), and digitalisation. In medium and long-term, these activities help to better integrate environmental issues into objectives addressing tourism development and promote sustainable practices, especially in the private sector.

Positive impacts can be expected from interactions among the environmental issues. For example, trainings on sustainable products could lead to new/improved solutions related to circular economy in long-term, and therefore contribute to resource efficiency in the tourism industry.

Measures to reduce or offset significant negative environmental impacts:

Awareness activities and trainings on risks affecting human health can be recommended, considering the current pandemic and future health crises. Training activities should also cover topics related to the sustainable and long-term use of the natural and cultural heritage sites.





During project selection, preference could be given to the projects which incorporate environmental issues. As regards implementing provisions, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1).

On monitoring, the proposed programme indicators related to the participations in joint training schemes and completion of training schemes should help to keep track of the pool of competences developed in the region. At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of activities and the relevant environmental issues they address, number and type of stakeholders and participants (e.g. public authorities, NGOs, etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action has exclusively positive impacts, mainly in medium and long-term. It is expected to contribute particularly to increase capacities which are expected to lead to adopting sustainable lifestyles and potential solutions in the tourism industry related to resource efficiency, circular economy, digitalisation etc.

Source: M&E Factory, 2021

ISO 1: "Interreg-specific objective 'a better cooperation governance'..."

Specific objective b: enhancing 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

Planned action 7.1: Elaborating monitoring and data exchange systems to improve cross-border know how exchange and decision making

Biodiversity: not relevant	Soil: not relevant	Water: not relevant
Climate: 0/+	Air: not relevant	Landscape: 0/+
Human health/Population: 0/+	Cultural heritage and material assets: 0	Interactions between the above-mentioned issues

Description of the likely significant impacts on the environment:

The type of action 7.1 aims to enhance the information and data exchange across-border to support joint administrative and legal activities addressing for example border obstacles or migration and security challenges.

Its likely significant impacts on the environment are as follows:

- **positive indirect impacts in short, medium and long term:** New or improved knowledge and data in the short term would lead to better-informed decision making addressing administrative and legal obstacles in order to support projects that promote sustainable development and help address health care issues.

Measures to reduce or offset significant negative environmental impacts:

Additional emphasis could be put on the long-term collaboration between public institutions, which should enable sustainable cooperation in the future, especially in key areas such as health and social care. In addition, studies and analysis, which identify border obstacles can be supported, in particular those related to environmental issues.

During project selection, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1).

On monitoring, the proposed programme indicators related to the participations in joint actions across borders during and after project completion should help assess the involvement of stakeholders and their commitment after project completion.

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint actions and activities and the relevant environmental issues they address, number and type of participants (e.g. public authorities, NGOs, etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action is considered to be largely neutral or positive to the environment. While detailed assessment cannot be made, this type of action could contribute to addressing obstacles related to sustainable development, human health and population.

Source: M&E Factory, 2021





ISO 1: "Interreg-specific objective 'a better cooperation governance'..."

Specific objective b: enhancing 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

Planned action 7.2: Developing strategic frameworks among public organisations in all relevant fields to address upcoming challenges of the border region

Biodiversity: not relevant	Soil: not relevant	Water: not relevant
Climate: +/-	Air: not relevant	Landscape: 0/+
Human health/Population: 0/+	Cultural heritage and material assets: 0	Interactions between the above-mentioned issues

Description of the likely significant effects on the environment:

The type of action 7.2. aims to boost strategic developments across the border to allow for better strategic embedding of economic and social cooperation on all identified key thematic fields.

Its likely significant impacts on the environment are as follows:

- **positive direct impacts in short and medium term:** Harmonised strategies to reduce border obstacles and support SMEs in order to better address common challenges.
- **positive indirect impacts in medium and long term:** Cross-border strategies, management and action plans (when effectively implemented) should lead to more synchronised efforts in addressing border obstacles, including those obstacles that affect actions focused on sustainable development and digitalisation.

Measures to reduce or offset significant negative environmental impacts:

Regarding the support of SMEs, particular emphasis should be put on helping to restructure and revitalise sectors most heavily dependent on traditional industries and support the economic diversification especially in the fields of green technologies, resource efficiency and eco-innovation.

During project selection, preference could be given to the projects which incorporate environmental issues into their joint strategies. As regards implementing provisions related to project selection, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1).

On monitoring, the proposed programme indicators related to the participations in joint actions across borders during and after project completion should help assess the involvement of stakeholders and their commitment after project completion.

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint actions and activities and the relevant environmental issues they address, number and type of participants (e.g. public authority, SMEs, etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action is considered to be largely neutral or positive to the environment. By addressing legal and administrative border obstacles in a more strategic manner, this type of action could support activities envisaged under other types of actions. However, detailed assessment on specific environmental issues cannot be made.

Source: M&E Factory, 2021

ISO 1: "Interreg-specific objective 'a better cooperation governance'..."

Specific objective b: enhancing 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

Planned action 7.3: Implementing joint solutions to improve cross-border governance and reduce cross-border obstacles

Biodiversity: not relevant	Soil: not relevant	Water: not relevant
Climate: +/-	Air: not relevant	Landscape: +/-





Human health/Population: +	Cultural heritage and material assets: 0/+	Interactions between the above-mentioned issues
<p><i>Description of the likely significant effects on the environment:</i></p> <p>The type of action 7.3 aims to boost joint solutions across the border to reduce barriers and obstacles caused by different legal and administrative systems.</p> <p><i>Its likely significant impacts on the environment are as follows:</i></p> <ul style="list-style-type: none"> • positive indirect impacts in medium and long term: Cross-border initiatives that reduce barriers and obstacles caused by different legal and administrative systems are expected to have positive impacts, especially with regard to human population and health (e.g. solutions to reduce border obstacles related to social and health care services). • limited negative indirect impacts in medium and long term: Some activities related to employment might have an indirect negative impact in cases of an increased number of daily commuters or urban sprawl. However, this impact is expected to be limited and can be prevented and/or reduced by promoting sustainable transport and effective planning. 		
<p><i>Measures to reduce or offset significant negative environmental impacts:</i></p> <p>Stronger emphasis could be put on solutions which address border obstacles related to environmental issues and sectors related to it (other than health care), without overlapping with activities implemented under other types of actions.</p> <p>During project selection, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1).</p> <p>On monitoring, the proposed programme indicators related to the participations in joint actions across borders during and after project completion should help assess the involvement of stakeholders and their commitment after project completion.</p> <p>At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint actions and the relevant environmental issues they address, number and type of participants (e.g. public authority, SMEs, etc.), the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.</p>		
<p><i>Comment on the key questions:</i></p> <p>Compared to the zero scenario, this type of action is considered to be largely neutral and/or positive to the environment, while some limited indirect impacts might be expected related to increased mobility and urban sprawl. By addressing legal and administrative border obstacles, this type of action could support activities envisaged under other types of actions that address environmental issues.</p>		

Source: M&E Factory, 2021

ISO 1: "Interreg-specific objective 'a better cooperation governance'..."

Specific objective b: enhancing 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

Planned action 7.4: Developing skills as well as awareness raising aiming at a better cross-border cooperation

Biodiversity: not relevant	Soil: not relevant	Water: not relevant
Climate: +	Air: not relevant	Landscape: +
Human health/Population: +	Cultural heritage and material assets: +	Interactions between the above-mentioned issues
<p><i>Description of the likely significant impacts on the environment:</i></p> <p>The type of action 7.4 aims to improve skill development of public authorities in the cross-border region to improve mutual and cross-border understanding.</p> <p><i>Its likely significant impacts on the environment are as follows:</i></p> <ul style="list-style-type: none"> • positive direct and indirect impacts in short, medium and long term related to: increased capacities of public officials in relevant environmental fields such as climate change and tourism. In medium and long term, this is expected to lead to better decision-making and implementation of activities that address environmental issues. 		





Measures to reduce or offset significant negative environmental impacts:

Emphasis could be put on knowledge management and capitalisation to ensure that the know-how and skills gained by public officials are applied on a continuous basis by the public authorities.

During project selection, some elements can be highlighted to reduce the project's carbon footprint (see type of action 1.1). In addition, skill development activities, which also cooperate environmental topics could be highlighted.

On monitoring, the proposed programme indicators related to the participations in joint actions across borders during and after project completion should help assess the involvement of public authorities and their commitment after project completion.

At project level, monitoring should be in line with the programme objectives and indicators in order to allow for more detailed information on the type of joint actions and the relevant environmental issues they address, number and type of participants from public authorities, the budget, etc. This information should serve as a basis for earmarking projects for future programme evaluation.

Comment on the key questions:

Compared to the zero scenario, this type of action is considered to be positive to the environment. By supporting skill development, this type of action can support various activities envisaged under other types of actions that address environmental issues such as climate change and cultural heritage.

Source: M&E Factory, 2021





5.4 Secondary, cumulative, synergistic, positive and negative effects

Table 25 presents the environmental impacts of the individual types of actions in terms of the duration of the impact, whether it is reversible, and interactions with regard to the amplification of positive or negative effects. In addition, the possibility of localising the impacts and the option of a downstream environmental assessment within the framework of, for example, an environmental impact assessment are indicated.

Table 25: Synergistic and cumulative effects

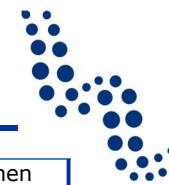
PO	SO	Type of action	Duration of the impact: <i>Short-term</i> <i>Medium-term</i> <i>Long-term</i>	Reversible? <i>Yes</i> <i>No</i>	Interactions with other actions: <i>Yes (with which)</i> <i>No</i>	Spatial impacts: <i>Localisable</i> <i>Not localisable</i>	Downstream check possible?	Synergistic and cumulative impacts
PO2	SO iv	1.1	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 1.2, 1.3	not localisable	No	Positive cumulative impacts can be expected in case of existing data and knowledge on this topic. Synergies with other projects under SO iv (or other similar projects) would strengthen the positive impacts.
		1.2	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 1.1, 1.2, 1.4	not localisable	No	Positive cumulative impacts can be expected in case of existing strategies and action plans on this topic. Synergies with other projects under SO iv (or other similar projects) would strengthen the positive impacts.
		1.3	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 1.1, 1.3, 1.4, 7.2	not localisable	Potentially subject to EIA and NATURA 2000 site assessments	Positive cumulative impacts can be expected in case of existing solutions on which future projects can be built. Synergies with other projects under SO iv (or other similar projects) would strengthen the positive impacts.
		1.4	Short, medium and mostly long-term	Yes	Positive synergies with types of actions 1.1, 1.3, 1.4, 3.4, 7.4	not localisable	No	Synergies with other projects under SO iv, PO3 3.4, ISO1 7.4 (or other similar projects) would strengthen the positive impacts.
	SO v	2.1	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 1.1, 2.2, 2.3, 3.1, 7.1	not localisable	No	Positive cumulative impacts can be expected in case of existing data and knowledge on this topic. Synergies with other projects under SO v (or other similar projects) would strengthen the positive impacts.
		2.2	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 2.1, 1.2, 3.2, 7.1	not localisable	No	Positive cumulative impacts can be expected in case of existing strategies and action plans on this topic. Synergies with other projects under SO v (or other similar projects) would strengthen the positive impacts.
		2.3	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 2.1, 2.2	not localisable	Potentially subject to EIA and NATURA 2000 site assessments	Positive cumulative impacts can be expected in case of existing solutions on which future projects can be built. Synergies with other projects under SO v (or other similar projects) would strengthen the positive impacts.





	SO vii	3.1	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 1.1, 2.1, 3.2, 3.3	not localisable	No	Positive cumulative impacts can be expected in case of existing data and knowledge on this topic. Synergies with other projects under SO vi (or other similar projects) would strengthen the positive impacts.
		3.2	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions i2.2, 3.1 3.2, 7.1	not localisable	No	Positive cumulative impacts can be expected in case of existing strategies and action plans on this topic. Synergies with other projects under SO v (or other similar projects) would strengthen the positive impacts.
		3.3	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 3.1, 3.2, 1.3, 2.3	not localisable	Potentially subject to EIA and NATURA 2000 site assessments	Positive cumulative impacts can be expected in case of existing solutions on which future projects can be built. Synergies with other projects under SO vi (or other similar projects) would strengthen the positive impacts.
		3.4	Short-term Medium-term and mostly long-term	Yes	Positive synergies with types of actions 3.3, 1.4, 7.4, actions under PO4	not localisable	No	Synergies with other projects under SO vii, PO3 3.4, ISO1 7.4 (or other similar projects) would strengthen the positive impacts.
PO3	SOiii	4.1	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 6.1, 6.2, 6.3	not localisable	No	Positive cumulative impacts can be expected in case of existing data and knowledge on this topic. Synergies with other projects under PO3 and PO4 related to tourism (or other similar projects) would strengthen the positive impacts.
		4.2	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 1.2, 2.2, 3.2, 6.1, 6.2, 6.3	not localisable	No	Positive cumulative impacts can be expected in case of existing strategies and action plans on this topic. Synergies with other projects under PO2, PO3, PO4 related to tourism (or other similar projects) would strengthen the positive impacts.
		4.3	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 4.1, 4.2, 6.3	not localisable	Potentially subject to EIA and NATURA 2000 site assessments	Positive cumulative impacts can be expected in case of existing solutions on which future projects can be built. Synergies with other projects under PO3 and PO4 related to tourism (or other similar projects) would strengthen the positive impacts.
PO4	SOii	5.1	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 1.4, 1.2, 2.2, 3.2, 5.2, 5.3 ISO 1b	not localisable	No	Positive cumulative impacts can be expected in case of existing data and knowledge on this topic. Synergies with other projects under other POs 1.4, 1.2, 2.2, 3.2, 5.2, 5.3 ISO 1b would strengthen the positive impacts.
		5.2	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 1.4, 1.2, 2.2, 3.2, 5.1, 5.3, 6.4, ISO 1b	not localisable	No	Positive cumulative impacts can be expected in case of existing strategies and action plans on this topic. Synergies with other projects under other POs 1.4, 1.2, 2.2, 3.2, 5.3, 6.4, ISO 1b would strengthen the positive impacts.
		5.3	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 1.4, 1.2, 2.2,	not localisable	No	Positive cumulative impacts can be expected in case of existing solutions on which future projects can be built. Synergies with other projects under other POs





					3.2, 5.1, 5.3, 6.4, ISO 1b			1.4, 1.2, 2.2, 3.2, 5.3, 6.4, ISO 1b would strengthen the positive impacts.
	SOiv	6.1	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 1.1, 2.1, 3.1, 4.1, 6.2, 6.3	not localisable	No	Positive cumulative impacts can be expected in case of existing data and knowledge on this topic. Synergies with other actions 1.1, 2.1, 3.1, 4.1 (or other similar projects) would strengthen the positive impacts.
		6.2	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 1.2, 2.2, 3.2, 4.1, 6.1, 6.3	mostly not localisable (some activities which envisage strategies for better coordination between natural heritage sites may be localisable)	No	Positive cumulative impacts can be expected in case of existing strategies and action plans on this topic. Synergies with other actions 1.2, 2.2, 3.2, 4.1, 6.1, 6.3 (or other similar projects) would strengthen the positive impacts.
		6.3	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 1.3, 2.3, 3.3, 4.1, 6.1, 6.2	not localisable	Potentially subject to EIA and NATURA 2000 site assessments	Positive cumulative impacts can be expected in case of existing solutions on which future projects can be built. Synergies with other actions 1.3, 2.3, 3.3, 4.1, 6.1, 6.2 (or other similar projects) would strengthen the positive impacts.
		6.4	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 6.1, 6.2, 6.3, 1.4, 7.4, actions under PO4	not localisable	No	Synergies with other actions 6.1, 6.2, 6.3, 1.4, 7.4, actions under PO4 (or other similar projects) would strengthen the positive impacts.
ISO1	b	7.1	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 1.1, 2.1, 3.1, 4.1, 6.1	not localisable	No	Positive cumulative impacts can be expected in case of existing data and knowledge on this topic. Synergies with other actions 1.1, 2.1, 3.1, 4.1, 6.1 (or other similar projects) would strengthen the positive impacts.
		7.2	Short-term Medium-term Long-term	Yes	Positive synergies with types of actions 1.2, 2.2, 3.2, 4.1, 4.2 6.1, 6.3	not localisable	No	Positive cumulative impacts can be expected in case of existing strategies and action plans on this topic. Synergies with other actions 1.2, 2.2, 3.2, 4.1, 4.2 6.1, 6.3 (or other similar projects) would strengthen the positive impacts.
		7.3	Short-term Medium-term Long-term	Yes	Positive synergies with various types of actions which are affected by border obstacles	not localisable	No	Positive cumulative impacts can be expected in case of existing solutions on which future projects can be built. Synergies with other actions to better address border obstacles would strengthen the positive impacts.
		7.4	Short-term Medium-term Long-term	Yes	Positive synergies with various types of actions under PO2, PO3, PO4 and ISO 1/b	not localisable	No	Synergies with various actions under PO2, PO3, PO4 and ISO 1/b would strengthen the positive impacts.

Source: M&E Factory, 2021





5.5 Summary of the assessment

The Interreg Programme AT–HU affects the most important environmental issues of the cross-border region in a positive way in comparison to the zero scenario. Negative impacts are expected to be negligible and indirect, since the programme focuses mainly on 'soft' actions.

Referring to alternative 1 (draft programme of 8 July 2021), the largest programme budget is allocated to **PO2 "A greener, low-carbon Europe"** (42% of the programme budget), which is expected to have the most significant positive impact on a number of environmental issues by focusing on climate change adaptation and mitigation, water management, and the protection and preservation of nature and biodiversity. While some small-scale interventions related to the implementation of new technologies, green infrastructure or water management could have some short-term and reversible impacts on biodiversity, water, landscape and soil, the potential negative impact of these activities is expected to be limited.

PO4 "A more social and inclusive Europe" receives the second-highest budget allocation (34% of the programme budget). Actions focused on education, training and lifelong learning are considered to be largely neutral or positive to the environment. On the other hand, actions on sustainable tourism could have some negative impacts as a result of small-scale infrastructure development projects and increased numbers of tourists. While a detailed assessment of possible impacts on specific areas cannot be made here, potential negative impacts could be expected, particularly on landscape, cultural heritage, biodiversity, water, air and human health. These impacts should be taken into account by strict project selection criteria.

The lowest budget is allocated to **PO3 "A more connected Europe by enhancing mobility"** (9% of the programme budget). Overall, positive impacts are expected through the promotion of sustainable mobility in the region. Some small-scale infrastructure investments and increased cross-border mobility could have a negative impact in the form of increases in land take, higher pressure on habitats and cultural heritage sites, and additional impact through noise pollution in sensitive areas. Environmental impact assessments and the introduction of project selection criteria during the programme implementation are expected to serve as gatekeepers in the event of unforeseen negative impacts.

Planned actions under **ISO1 "A better cooperation governance"** (15% of the programme budget) are of a very 'soft' nature and no negative impacts are to be expected. They should aim to further enhance the positive effects of the programme on the environment through more effective and sustainable cross-border cooperation in the cross-border region, especially between public authorities.





6 MONITORING PROVISIONS

This chapter will be prepared after the public consultation.





7 REFERENCES

1. European Environmental Agency (EEA) (2021a). [Conservation status of habitats](#)
2. European Environmental Agency (EEA) (2021b). [Conservation status of species](#)
3. OECD database 2021. [Farmbird index](#)
4. Eurostat (2021). [Common farmland bird index](#)
5. Umweltbundesamt (2021a): "Altlastenatlasverordnung"
6. Umweltbundesamt (2021b). Annual Greenhouse Gas Inventory 1990–2019 www.umweltbundesamt.at/fileadmin/site/publikationen/rep0751.pdf
7. BMK/Federal Ministry for Climate Protection, Environment, Energy, Mobility, Innovation and Technology (2021). Die Bestandsaufnahme der Abfallwirtschaft in Österreich – Statusbericht 2021 (Referenzjahr 2019)
8. European Environmental Agency (EEA). [Rote Liste Pflanzen](#)
9. European Environmental Agency (EEA). [Rote Listen gefährdeter Tierarten](#)
10. European Commission (2020). Country Report Austria 2020 eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0519&from=EN
11. Innovációs és Technológiai Minisztérium (ITM) (2020), Jelentés az éghajlatváltozás Kárpát-medencére gyakorolt esetleges hatásainak tudományos értékeléséről, document accompanying the National Energy and Climate Plan, 17 January 2020.
12. Országos Vízügyi Főigazgatóság (OVF) (2020). Magyarország Vízyűjtő-Gazdálkodási Tervének Második Felülvizsgálata (Magyarország Vízyűjtő-Gazdálkodási Tervének Második Felülvizsgálatamagyarország Vízyűjtő-Gazdálkodási Terve-2021. Note: Vitaanyaga Tervet A Kormány Nem Tárgyalta, Ezért Nemtükrözi A Kormány Álláspontját!) EN: National Directorate General for Water (2020). Hungary's River Basin Management Plan 2021 Second Review (The Plan has not been discussed by the Government and therefore does not reflect the government's position) vizeink.hu/2020/12
13. Strauss P. et al (2020). Bodenerosion in Österreich – Eine nationale Berechnung mit regionalen Daten und lokaler Aussagekraft für ÖPUL.
14. Teufelbauer & Seaman (2020). Farmland Bird Index für Österreich: Indikatorenenermittlung 2015 bis 2020 (On behalf of the Federal Ministry of Agriculture, Regions and Tourism)
15. BMNT/Federal Ministry for Sustainability & Tourism (2019). Data, Facts and Figures 2019/2020
16. European Commission (2019a). The EU Environmental Implementation Review, Hungary 2019 ec.europa.eu/environment/eir-report
17. European Commission (2019b). The EU Environmental Implementation Review, Austria 2019
18. Umweltbundesamt (2019a). 12th Environmental Monitoring Report Environmental situation in Austria (DE: Zwölfter Umweltkontrollbericht. Umweltsituation in Österreich)
19. Umweltbundesamt (2019b). Stickstoff – und Phosphorbilanz in der Landwirtschaft
20. Ana Payá Pérez and Natalia Rodríguez Eugenio (2018). Status of local soil contamination in Europe: Revision of the indicator "Progress in the management Contaminated Sites in Europe, EUR 29124EN, Publications Office of the EU, Luxembourg esdac.jrc.ec.europa.eu
21. Austrian Panel on Climate Change (APCC) (2018): Österreichischer Special Report. Gesundheit, Demographie und Klimawandel (ASR18). sr18.ccca.ac.at





22. European Commission (2018). Transport in the EU Current Trends and Issues ec.europa.eu/transport/sites/default/files/2018-transport-in-the-eu-current-trends-and-issues.pdf
23. European Environmental Agency (EEA) (2018). Agricultural land: nitrogen balance www.eea.europa.eu/airs/2018/natural-capital/agricultural-land-nitrogen-balance
24. BMV/Österreichischer Biomasse-Verband & AEA/Austrian Energy Agency (2017): Basisdaten Bioenergie 2017. www.biomasseverband.ooe.at.2017.pdf
25. OECD (2017). The Governance of land use: Country fact sheet Hungary www.oecd.org/regional/regional-policy/land-use-Hungary.pdf
26. Tsiamis K; Gervasini E; Deriu I; D'amico F; Nunes A; Addamo A; De Jesus Cardoso A (2017). Baseline Distribution of Invasive Alien Species of Union concern
27. World bank (2017). Country risk profiles for floods and earthquakes
28. BFW/ Bundesforschungszentrum für Wald (2016): Bundesweites Wildeinflussmonitoring 2004–2015. BFW-Praxisinformation Nr. 42.
29. BMLFUW/Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft (2015): Reduzierung des Verbrauchs landwirtschaftlicher Böden. Maßnahmenvorschläge.
30. BMLFUW/Federal Ministry of Agriculture, Forestry, Environment and Water Management (2014). Biodiversity Strategy Austria 2020+. www.cbd.int/doc
31. European Commission (2012). Austria Country Report on the Implementation of the Water Framework Directive, River Basin Management Plans ec.europa.eu/3rdreport
32. European Commission (2012). Hungary Country Report on the Implementation of the Water Framework Directive, River Basin Management Plans ec.europa.eu/3rd_report
33. ESSL, F.& EGGER, G. (2010): Lebensraumvielfalt in Österreich – Gefährdung und Handlungsbedarf. Naturwissenschaftlicher Verein Kärnten, Klagenfurt, 110 S.; 10th and 12th Environment Control Report. Umweltsituation in Österreich. Umweltbundesamt, Vienna





8 CONSULTATION DOCUMENTATION

In accordance with the SEA Directive, the citizens and authorities who are likely to be concerned with the environmental effects of the Interreg Programme AT–HU 2021–2027 shall be consulted on the environmental report.

The environmental report as well as the draft programme document will therefore be made available to the public and authorities in both countries in order to give them the opportunity to comment.

The SEA Directive does not specify a procedure for the public consultation. The Member States involved should therefore identify the authorities and the public affected by, likely to be affected by, or having an interest in the decision making subject to the SEA Directive. The process should include relevant non-governmental organisations, such as those promoting environmental protection (Article 6 of the Directive).

The public consultation is coordinated by the managing authority of IP AT–HU (MA/JS). The consultation will be announced and made available as agreed between both countries and respecting the Austrian and Hungarian legal provisions. Unrestricted public participation on the Internet will be provided (e.g. on the Interreg programme website). Interested parties can submit comments in their national languages (Hungarian and German).

All comments and opinions received during the public consultation will be documented, integrated in the environmental report, and commented on by the SEA experts.

As a final step, the environmental report will be revised and recommendations will be forwarded to the programme managing authority so that the programme can be revised appropriately and any necessary environmental protection provisions integrated into the implementing provisions.

