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CONTRACT

«TECHNICAL CONSULTANCY SUPPORT: REPORT FOR THE STRATEGIC  
ENVIRONMENTAL ASSESSMENT OF  
COOPERATION PROGRAMME INTERREG VI-A  
GREECE-BULGARIA 2021-2027»



**DELIVERABLE:**  
«STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA) OF THE COOPERATION PROGRAMME  
INTERREG VI-A GREECE-BULGARIA 2021-2027»



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The present Strategic Environmental Assessment Report (SEA) of the Cross Border Cooperation Programme INTERREG VI-A Greece - Bulgaria 2021-2027, is prepared in the context of the project "Technical Consultancy Support: Report for the Strategic Environmental Assessment of Cooperation Programme INTERREG VI-A Greece – Bulgaria 2021-2027". The Managing Authority of the European Territorial Cooperation Programmes, part of MINISTRY OF DEVELOPMENT AND INVESTMENTS, assigned this project to EEO GROUP Independent consultancy, according to the contract signed by both on 12<sup>th</sup> October 2021.

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## Acronyms

BOP	Border Orientation Paper
CB	Cross Border
CBC	Cross Border Cooperation
CF	Cohesion Fund
E.O.	Environmental Objective
E2030	Europe 2030 Strategy
EAP	Environment Action Programme
EC	European Council
EEA	European Environment Agency
ELSTAT	Greek Official Statistics
EMFF	European Maritime and Fisheries Fund
EP	European Parliament
ERDF	European Regional Development Fund
ESB	European Social Fund
ESIF	European Structural Funds and Investment
ETC	European Territorial Cooperation
EU	European Union
EUSAIR	EU Strategy for the Adriatic – Ionian Region
GDP	Gross Domestic Product
GHG	Greenhouse gases
GR	Greece
IBAs	Important Bird Areas
ICT	Information and Communication Technologies
IUCN	International Union for Conservation of Nature

JMD	Joint Ministerial Decision
JPC	Joint Programming Committee
MA	Managing Authority
MED	Mediterranean Space
mIBAs	marine Important Bird Areas
MSFD	Maritime Strategy Framework Directive
NSI	National Statistical Institute
NSRF	National Strategic Reference Framework
NUTS	Nomenclature of territorial units for statistics
OP	Operational Programme
PAF's	Prioritized Action Frameworks for Natura 2000
pcGDP	Gross Domestic Product per capita
PD	Presidential Decree
R & D	Research and Development
R & I	Research and Innovation
RAE	Regulatory Authority for Energy
RDP	Rural Development Programme
RES	Renewable Energy Sources
RIS	Research and Innovation Strategies for Smart Specialization
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SCI	Sites of Community Importance
SO	Specific Objective

## 1 NON TECHNICAL SUMMARY

The present Strategic Environmental Assessment Report (SEA) of the European Cooperation Programme Interreg VI-A Greece - Bulgaria 2021-2027, is prepared in the context of the project "Technical Consultant Support: Report for the strategic environmental assessment of the Cooperation Programme INTERREG VI-A Greece – Bulgaria 2021-2027" and in accordance with the contents of Directive 2001/42/EC for the environmental assessment of certain plans and programs. The Managing Authority of the European Territorial Cooperation Programmes, of MINISTRY OF DEVELOPMENT AND INVESTMENTS, assigned this project to EEO GROUP Independent consultancy.

### 1.1 The process of SEA

The Strategic Environmental Assessment (SEA) is an ex ante evaluation of the environmental effects of the Cooperation Programme INTERREG VI-A Greece - Bulgaria 2021-2027. The SEA process includes the preparation of the Strategic Environmental Assessment Report (SEA Report), its submission, consultation, with authorities (which by reason of their specific environmental responsibilities, are likely to be concerned by the environmental effects of the programme) and the public, its approval by the national authorities (after taking into account the environmental report and the results of the consultation) and the establishment of a monitoring and evaluation system during the implementation of the programme. It is an autonomous process in relation to the programme's design process and is performed in parallel, as a mandatory stage, according to Directive 2001/42/EC.

### 1.2 Aims and Objectives of the Programme

The main aim of the programme is to ensure that it will contribute positively to achieve sustainable development on both countries, a high level of environmental protection, as well as social and economic development according to the provisions of Green Deal and the Sustainable Development Goals (SDGs) of UN's 2030 Agenda for Sustainable Development. The new programme supports the objectives and priorities of both Member States, Greece and Bulgaria, with particular regard to the transition to a green and circular economy with low carbon emissions, with innovative initiatives for the entrepreneurship and sustainable development of the eligible area.

The strategic objective of the Interreg CBC Programme Greece-Bulgaria 2021-2027 is to support the convergence of the area toward the growth and sustainability standards of the National and European Area, by responding to the complex challenges of the geographical regionalization and highlighting through cooperation, understanding, and networking its specific characteristics as comparative advantages.

The Programme will exploit the potential of the new programming framework and will focus on addressing needs that are important for the CBC area but may not be at the heart of national development priorities

and therefore not covered effectively for the area by National Programmes. In this context, it will also provide specific approaches and mechanisms that will help wider strategies applying at the area (for example TEN-T) to be more effective in favor of the local development.

### 1.3 Description of the Programme

In order to achieve the objectives, the programme has chosen to intervene in three Priorities, with three Policy Objectives (PO), as follows:

**PO.2: A greener, low-carbon transitioning towards a net zero carbon economy and resilient Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate change mitigation and adaptation risk prevention and management, and sustainable urban mobility**

**PO.3: A more connected Europe by enhancing mobility**

**PO.4: A more social and inclusive Europe implementing the European Pillar of Social Rights**

For each policy objective, one or more Specific Objectives (SO) are selected that best approach the achievement of the stated objective and are based on the needs and the potentials of the eligible area. The Priorities, the Policy Objectives and the Specific Objectives are shown in a tabular form on the following Table 1.1.

**Table 1-1: INTERREG VI-A Greece-Bulgaria 2021-2027 programme**

Priority 1: A more Resilient and Greener Greece-Bulgaria Cross Border Territory			Priority 2: A more accessible Greece- Bulgaria Cross Border Territory	Priority 3: A more inclusive Greece- Bulgaria Cross Border Territory	
PO.2: A greener, low-carbon transitioning towards a net zero carbon economy and resilient Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate change mitigation and adaptation risk prevention and management, and sustainable urban mobility			PO.3: A more connected Europe by enhancing mobility	PO.4: A more social and inclusive Europe implementing the European Pillar of Social Rights	
SO1.4: Promoting climate change adaptation, risk prevention and disaster resilience	SO1.6: Promoting the transition to a circular and resource efficient economy	S.O1.7: Enhancing biodiversity, green infrastructure in the urban environment and reducing pollution	SO2.2: Developing and enhancing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross border mobility	SO3.2: Improving equal access to inclusive and quality services in education, training and lifelong learning through developing accessible infrastructure, including by fostering resilience for distance and on-line education and training	SO3.6: Enhancing the role of culture and sustainable tourism in economic development, social inclusion and social innovation

Overall, the expected results of the programme are (non-exhaustive list):

- Improvement of relative position in Innovation performances to EU mean values
- Integrated risk management and early warning systems
- Increase of circular economy potential
- Rehabilitation of polluted lands / waste fields
- Halt of habitat, biodiversity, and biogenetic stock loss
- Natural capital as a sustainable growth factor.
- Improvement of mobility in favour of business cooperation and labour integration
- Increase of sustainable transport's share
- Upgrade of local public transport connections.

## 1.4 Alternatives

Realistic alternatives are presented and evaluated, regarding their effects on the environment and sustainable development.

The selection of the suggested alternative is being done based on the environmental, economic and social criteria towards the Sustainable Development principles direction. The justification of the selection is being presented in chapter 5 of the present report. In accordance with the SEA Directive 2001/42/EC, the alternatives should be realistic, i.e they should be feasible and eligible based on the specific data and regulations of the programme framework.

The alternatives that are presented are:

- Zero alternative or “do nothing scenario”, in which the non- implementation of the programme is being examined consisting the zero scenario
- Suggested alternative, which best integrates the requirements consisting the proposed solution.

## 1.5 Description of the current state of the environment

The programme is implemented at the NUTS III administrative area surrounding the 475km borderline that separates the two countries, plus the Regional Units of Thessaloniki, Kavala and Thasos. The borderline stretches West to East from the tri-border point between Greece, Bulgaria and Republic of North Macedonia to the similar one between Greece, Bulgaria and Turkey. The region includes seven (7) Greek Regional Units: Evros, Xanthi, Rodopi, Drama, Kavala, Serres and Thessaloniki, as well as four (4) Bulgarian Regions: Blagoevgrad, Haskovo, Smolyan, Kardzhali.

The CBC area covers an overall area of 40,111 km<sup>2</sup> and a population estimated at 2.663.345 inh. at 2019. The overall population density is 66,4 inhabitants per km<sup>2</sup>, almost the half of the EU27 average

The Area of Thessaloniki is the most populated and most sparsely populated are the areas of Drama and Smolyan. Demographic decline is a long-term trend in the mountainous part of the region in both countries with ageing to be an equally unfavourable demographic condition. In general, Greece and Bulgaria have the third and fourth oldest population in Europe.

The cross-border area is mostly mountainous formed by the Rodopi, Belasica/ Kerkini and Slavyanka / Orvilos mountains and divided by valleys crossing the border line from North to South. The programme area also contains plain and coastal areas of the Macedonia – Thrace regions; the Thracian Pelagos and the northern part of the Thermaikos gulf as well as the two major islands of Thasos and Samothraki. Rough mountainous landscape and river streams act both as natural barriers between the Greek and Bulgarian territories and only few road passes (mostly opened during the last decades) are connecting the two countries. Mountains, valleys, coastal line and Islands are forming the diverse landscape of the CBC area. It includes variations from the Pirin Mountains to the forest of Rodopi, the lakes and the wetlands of the coastal areas and the Mediterranean landscape of Thasos and Samothraki islands.

The passage of almost parallel rivers crosses the area from North to South forming estuaries at the coastline. From West to East, the most important rivers are Struma/Strymonas (length 415 km, river basin 17,330 km<sup>2</sup>), Mesta/Nestos (length 280 km, river basin 5,184 km<sup>2</sup>), Marica / Evros (length 480 km, river basin 53,000 km<sup>2</sup>). Maritsa is the longest river that runs solely in the interior of the Balkans. Its hydrological system also comprises its tributary Ardas (length 290 km). More than 70% of the total area is mountainous. The lowlands are limited almost exclusively to the coastal (Greek) zone, while even the islands have high peaks reaching up to the height of 1.600 meters (Samothraki). It is the coastal areas that show the greatest landscape changes, caused mainly from the growth and concentration of anthropogenic activities (housing, agriculture, tourism). The mountainous area is dominated by agri-food and forestry uses, industry is mainly found on the perimeter of some medium and small towns.

In the Greek part of the study area, according the national list of the European ecological network Natura 2000 updated in 2018<sup>1</sup>, there have been found 54 Natura 2000 sites, added to 35 identified sites in Bulgaria, bring us to the total number of 89 Natura 2000 sites of great significance, spread through the study area. In the study area there are three marine Important Bird Areas; Samothraki Island, Mount Athos and surrounding marine area, Gulf of Kavala and marine area of Thasos Island.

The Greece-Bulgaria CBC area is one of the poorest in the European Union, as the GDP (pps) per capita is below 50 % of the EU average. The CBC area is characterized by large internal disparities, as Bulgaria has long been a transition economy (Border Orientation Paper – BOP- Greece Bulgaria 2019, OECD 2021).

The impact of the SARS-COVID 19, so far, affected in a different way CBC area of both countries. In general, Greek economy is more vulnerable to the crisis than the Bulgarian. At 2020, the loss of GDP in Greece was 9.2% while in Bulgaria was less than 1%. (EU27 -4.5%).

## 1.6 Assessment, Evaluation and Management of the environmental impacts of the Programme

The evaluation of the impacts is based on the environmental parameters that are suggested through the Directive 2001/42/EC of the European Parliament as adapted by the JMD 107017/2006 of Greek Legislation, on the assessment of the effects of certain plans and programmes on the environment. Through this examination, all possible effects that may arise during the programme's implementation, are detected, estimated and evaluated. A correct selection of these parameters is vital in order for the Strategic Environmental Assessment to be substantial.

The parameters that have been selected are the following:

1. Biodiversity
2. Population- Human health
3. Soil
4. Water
5. Air, Climate and climate change

<sup>1</sup> [https://www.ekby.gr/ekby/el/natura\\_tables\\_el\\_Dec2017.pdf](https://www.ekby.gr/ekby/el/natura_tables_el_Dec2017.pdf)

6. Infrastructure
7. Cultural Heritage
8. Landscape
9. Noise
10. Sustainable development
11. Interrelationship

The evaluation of the environmental impacts is made according the methodology of guiding questions. According to this methodology, a network of evaluating questions is being formed, taking under consideration the environmental aims of the study, in order to determine all the possible environmental impacts for each environmental parameter. The questions are formed in a way to get a yes or no answer.

The environmental impacts on each parameter will be examined per Priority and its Specific Objectives (SOs) using some selected criteria such as the probability, the scale, the duration, the reversibility, the cross-border dimension, the sequence of an impact and the interaction.

The assessment and evaluation of the effects of the proposed actions resulted in the following:

- The majority of the actions of the Programme will have a positive impact on the state of the environment both locally-regionally and (where possible) in a cross-border level.
- A significant part of the actions cover the financing needs of joint actions for achieving objectives of regional, national and European policy on the Environment and Sustainable Development.
- The positive effects concern both the artificial, and the natural environment, in particular the sustainable spatial development, the improvement of living conditions and environmental characteristics in urban centers, the water management, the management of protected areas, the achievement of climate change objectives and the promotion of blue and green growth.
- The integration of environmental dimension into the activities design is included in all the objectives of the programme and is not strictly limited to the measures (specific objectives) that are exclusively associated with protection.
- Any negative impacts, resulting from the project, are evaluated as local and of low impact. All negative impacts are associated with the construction phase of projects included in the programme area and have a short-term character. Overall, for all negative impacts of the programme there are appropriate measures for preventing or reducing their extent and intensity are proposed.

Based on the above-mentioned, it is estimated that the implementation of the programme will create a strong positive synergy with the objectives of environmental policy. In order, however, the degree of this synergy to be maximized and in order to avoid the identified negative impacts, some measures are taken to prevent and control the environmental effects as analytically described in chapter 8 of the present report.

## The “Do no significant harm (DNSH)” principle

The Programme has been evaluated according to the “Do no significant harm (DNSH)” principle.

According to the **Taxonomy regulation**, *"The Funds should support activities that would respect the climate and environmental standards and priorities of the Union and would do no significant harm to environmental objectives within the meaning of Article 17 of Regulation (EU) No 2020/852 "*.

The evaluation of the programme following the "Do no significant harm" principle, is presented in detail in chapter 7.3 of the present report.

In order to implement the DNSH principle, the following environmental objectives have been examined, as defined in Article 17 of the Taxonomy Regulation.

1. Climate change mitigation
2. Climate change adaptation
3. Sustainable use and protection of water and marine resources
4. Circular economy
5. Pollution prevention and control
6. Protection and restoration of biodiversity and ecosystems.

According to the above mentioned examination, the Programme:

- The Programme is not expected to lead in significant GHG emissions and as a result it will not affect the climate change mitigation.
- The Programme is not expected to lead to an increased adverse impact of the current climate and the expected future climate, on the activity itself or on people, nature and assets. As a result it will not act negatively to the climate change adaptation.
- The Programme is not going to be detrimental to the good status or the good ecological potential of bodies of water, including surface water and groundwater, or to the good environmental status of marine waters. Consequently, it will not affect the sustainable use and protection of water and marine ecosystems.
- The Programme is not expected to lead to significant inefficiencies in the use of materials or in the direct or indirect use of natural resources. In this way, it will not act against the principles of circular economy.
- The Programme does not significantly increase the generation, incineration or disposal of waste and the long-term disposal of waste does not cause significant and long-term environmental harm. The programme will not act against waste prevention and recycling.
- The Programme is not expected to lead to a significant increase in emissions of pollutants into air, water or land. Consequently, it will not act against the pollution prevention and control of the aforementioned environmental parameters.
- The Programme is not going to be significantly detrimental to the good condition and resilience of

ecosystems, or detrimental to the conservation status of habitats and species, including those of Union interest. As a result, it will not act against the protection and restoration of biodiversity and ecosystems.

Consequently, the programme has been designed in order not to harm any of the above aforementioned environmental objectives; it is in line with the "do no significant harm" principle.

## 1.7 Mitigation measures

The prevention, reduction and mitigation of environmental impacts of the programme is realized through two main mechanisms: a) the environmental permitting of projects and activities as it is in force and b) the creation of special provisions and / or conditions that will be applied in the implementation of the programme and will be integrated in the management processes (projects approvals etc).

### a) Environmental permitting of projects and activities.

The impacts of each project are controlled by the environmental permitting process as it is in force in Europe acquis and is specialized on the implementation procedures of the institutional framework of the two countries. The approval of a project in the programme does not modify its requirements according to the Environmental Permitting, under which occur the specific terms and conditions of the execution. In relation to the main activities, through the relevant Environmental Impact Reports should be (not exclusively) referred the following issues:

- Compliance with the specific emission limit values of pollutant loads and concentrations for air, water and soil in accordance with the applicable provisions.
- The specific limit values of noise.
- Compliance with national or regional planning for the environment, such as waste management plan, the basin management plans of the WFD, etc.
- The suitability of locating in accordance with the approved land use plans and building restrictions.
- Taking into account all the necessary measures that are provided by the legislation in relation to the prevention and reduction of pollution of protected areas, sea and forest.
- Projects that are located in areas included in the Natura2000 network (as SCI or SPA), will have to comply with Article 6.3 of Habitats Directive 92/43/EEC, that is: *"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect on it, either individually or together with other projects, it is should be estimated regarding its impacts on the site by taking into account its conservation objectives"*.

### b) Specific measures in order to protect the environment.

- Proposals that finance enterprises (innovation - entrepreneurship - competitiveness) and that include (in addition to the mandatory rules of the environmental law)

investment in "green infrastructure and technologies", bioclimatic principles and/or promote the reduction and reuse of materials (according to the principles of circular economy and the hierarchy of waste management), would be highly desirable to be primed during the project selection process.

- In the process of specifying and selecting clusters, it should be considered to include enterprises that manage products or waste that are produced throughout the value chain.
- The actions of tourism development or enhancement of natural resources within Natura 2000 areas should be consistent with the management plans of the areas. In cases, where the projects are listed in areas with Management Agency, its opinion is necessary. In any case, it should be documented that the increase of visiting the protected ecosystems for tourism or other purposes does not have impact on the conservation status.
- Appropriate measures should be taken for technical projects that are implemented within the coastal marine area and may cause either a water quality pollution or a disruption of benthic substrate. Such measures should prevent and reduce the potential pollution of waters and the sediment.

More specifically, the aforementioned mitigation measures should address all the environmental parameters that might be affected by the projects of the Programme, according to the assessment of the environmental effects.

The proposed measures are selected and presented in a tabular form for each environmental parameter in chapter 8 of the present.

## 1.8 Monitoring System

According to Article 10 of Directive 2001/42/EC, the monitoring system of the significant environmental effects of the implementation of the Programme is necessary, in order to identify at an early stage unforeseen adverse effects, and to be able to undertake appropriate remedial action.

The present Report is a first attempt to identify the impact of a programme that has not yet been fully completed. The actions and the types of interventions that have been examined largely determine the nature of the expected impact, but may provide few opportunities for their intensity and therefore their acceptance or not. Thus, due to lack of specific data resulting from the gradual implementation and specialization of the programme, the Report primarily identifies in theory the impacts of the programme. The Report has so far identified the negative impacts and has proposed measures to minimize them. The monitoring system, therefore, should initially validate or correct the theoretical results of the assessment of Report compared with actual environmental impacts resulting from the implementation, and secondly should assess whether the proposed measures have been effectively implemented.

The proposed Monitoring System includes all the relevant environmental indicators per environmental parameter (e.g. biodiversity, air quality and climate change, soil, water, landscape and culture, etc.) and identifies the authorities that carry out the monitoring as well as the frequency of monitoring.

Finally, throughout the monitoring system the identification of the environmental footprint of the programme is achieved; for instance, actions promoting the reduction of GHGs emissions would reduce the carbon footprint of the programme.

## 2 GENERAL INFORMATION

### 2.1 The subject of SEA

This issue is the second deliverable of the Strategic Environmental Impact Assessment of the INTERREG Cross – Border Cooperation Programme "Greece-Bulgaria 2021-2027". It is titled: **“Technical Consultation Support: Strategic Environmental Assessment (SEA) of the Cooperation Programme INTERREG VI-A Greece- Bulgaria 2021-2027”** and is prepared by EEO Group Independent Consultancy, in accordance to the contract signed between EEO Group and the Greek government; in particular the Managing Authority of European Territorial Cooperation Programmes, part of the Ministry of Development and Investments.

This SEA estimates the potential environmental impacts from the programme as it is described in deliverable Draft 3, of the Cooperation Programme, that will be submitted to the members of the Programming Committee for further comments, prior to the final submission to the EC. That deliverable presents the final version of the Cooperation Programme, which includes all the chapters of the Cooperation Programme, taking into consideration the results of the Public Consultations as well as the decisions taken by the Programming Committee and other processes.

The Strategic Environmental Impact Assessment was prepared in accordance to the provisions of Directive 2001/42/EC and the JMD (Joint Ministerial Decision) 107017/28.8.2006 (GG 1225/B/5-9-2006): "Assessment of the environmental effects of certain plans and programs, in compliance with the provisions of Directive 2001/42/EC " on the assessment of the effects of certain plans and programs on the environment " of the European Parliament and of the Council of 27th of June 2001."

The final SEA report will incorporate the answers by the authors of the SEA and relevant documentation needed on the issues and opinions raised during the public consultation by environmental and other relevant services and interested public as defined in Directive 2001/42/EC.

### 2.2 Contracting Authority of the Programme

The Contracting Authority of the Programme is the Managing Authority of European Territorial Cooperation Programmes, which is an internal part of the Greek Ministry of Development & Investments, located in Thessaloniki. Actually, it is that part of the Ministry that pays attention to the wider Hellenic neighborhood, Southeastern Europe and the Mediterranean Sea, as well as the whole of Europe, in order to build and strengthen bilateral cross-border and transnational ties and focus on a balance development on European level.

The main deliverable of the SEA of the Cooperation Programme "INTERREG VI-A Greece- Bulgaria 2021-2027" consists of an Environmental Report according to Directive 2001/42/EC. The SEA will also include the support for the achievement of the obligations related to consultation of environmental authorities and the public as defined in Directive 2001/42/EC.

## 2.3 The contracting entities

The contracting entities of this SEA is the following:

- the Managing Authority of European Territorial Cooperation Programmes on behalf of Hellenic Ministry of Development and Investments, which assigned the SEA
- EEO group Independent Consultancy, which undertakes the assignment from the aforementioned authority and is carrying out the SEA of the proposed programme.

### 2.3.1 Project team

For the preparation of this deliverable, the project team is consisted of the following scientists:

	Name	Qualifications	Role in the project
1	Ioannis Frantzis	Environmental Engineer, MSc	General Coordinator
2	Dimitrios Argyropoulos	Civil Engineer, Sanitary Engineer	Coordinator of the SEA team
3	Lazaros Ntoanidis	Environmental Engineer, MSc	Member of the SEA team
4	Ioanna Eleftheriou	Environmentalist, MSc	Member of the SEA team
5	Martsela Katsanevaki	Environmental Engineer	Member of the SEA team
6	Rebecca Batmanoglou	Chemist	Member of the SEA team
7	Konstantinos Pachygiannakis	Electrical Engineer, MSc	Member of the SEA team
8	Amani-Christiana Saint	Chemical Engineer, MSc, PhD	Member of the SEA team
9	Socrates Tsigardas	Environmental Engineer, MSc	Member of the SEA team
10	Angelos Tsakonas	Project Manager	Communications Support of the SEA team

### 3 AIMS AND OBJECTIVES OF THE PROGRAMME

In this Chapter, the aims of the programme and its wider objectives will be examined, as well as their connection and compatibility with the institutional framework and environmental objectives followed by the European countries. Finally, the relationship with other relevant programmes is going to be included. The following issues will be analyzed, amongst others:

#### 3.1 Aims and objectives of the Cross Border Cooperation Programme INTERREG VI-A GREECE-BULGARIA 2021-2027

The Programme is designed to address the main challenges identified by the diagnostic report in the cross-border area where collaboration is either necessary or is expected to produce significant added value. The preparation of the Programme started at 2020 with the acceptance of the “Concept paper for Greece-Bulgaria Cross-border Cooperation Programme 2021-2027” by the representatives of the two National Authorities.

Cross-border cooperation is encouraged in order to build the resilience of the participating regions regarding the common challenges being among others economic transition, climate change, low innovation and digitisation. At the same time, cooperation will enable the regions to eliminate their economic and social disparities identified by the territorial analysis.

The aims of the programme are focusing on the following:

- Promoting circular economy in the Cooperation Greece-Bulgaria area.
- Installation of detection and early warning system for natural disasters
- Increasing the capacity to respond to disasters and emergencies in the cross-border region of Bulgaria and Greece
- Support to SME's capacities to transit to Green and Circular business models
- Improvement of mobility and travel safety on the CB area
- Development of Green infrastructures, including developing new tools, transferring solutions between stakeholders and promotion of environmentally friendly practices
- Support to micro / family enterprises and Social Cooperative Enterprises in culture and tourism value chain
- Support to tourism chain value SME's to adapt to climate change and/or to upgrade their service towards inclusive and silver tourism
- Digitalization, inter-connection, infrastructure and equipment for Border control systems and security IMS.

To achieve the objectives, the programme has chosen to intervene in three Priorities:

**Priority 1: A more Resilient and Greener Greece- Bulgaria Cross Border Territory.**

**Priority 2: A more accessible Greece- Bulgaria Cross Border Territory**

**Priority 3: A more inclusive Greece- Bulgaria Cross Border Territory**

Each priority consists of special objectives, as it will be analysed in chapter 4.

The aim of the programme is to contribute to the achievement of environmental policy objectives set out both at European and at a macro-region level. The aim of the review of the environmental objectives of other policies, strategies and plans in the context of SEA, is to ensure that the requirements, commitments and obligations arising from them, have been considered and taken into account in planning process. The impact evaluation of the programme based on the SEA Environmental Objectives selected, will be analysed later in the present document and furthermore in the next deliverables.

The aims of the programme are TBD. The present deliverable is taking under consideration the most recent draft of the programme, which is updated until today.

### 3.2 Institutional framework and environmental objectives

It should be noted that different norms and legislation, in harmonization with European environmental protection strategies, apply on each side of the border. In order to establish a common ground for assessment, references on EU level will be used. The examined strategies correspond to the following key environmental issues: biodiversity (fauna and flora), human health and population, soil, water, air and climatic factors, as listed in point (f) of Annex I of Directive 2001/42/EC and presented in the chapter 6 of the present.

The framework which this SEA is considering consists in the European framework for environmental protection and sustainable development **Europe 2030 strategy** as well as all the corrections and additions that have been made through this time. This strategy focuses on promoting a more resource efficient, greener and more competitive economy for Europe.

The policies that must be taken into account and contain objectives related to the programme, are presented in the following table, categorized by the issue.

Field	Title of Plan, programme and policy
Sustainable Development	The Agenda 2030 of UN and the 17 Sustainable Development Goals (SDGs)
	The EU Green Deal (" <i>Transforming the EU's economy for a sustainable future</i> ")
Biodiversity	UN Conventions on Biological Diversity and its protocols

	<p>EU Biodiversity Strategy for 2030 COM (2020) 280 final</p> <ul style="list-style-type: none"> <li>• Directive 92/43/EEC on the conservation of natural habitats and wild flora and fauna</li> </ul>
	<ul style="list-style-type: none"> <li>• Directive 2009/147/EC on the conservation of wild birds</li> </ul>
	<ul style="list-style-type: none"> <li>• PAF's 2014-2020 – Prioritized Action Frameworks for NATURA 2000 (per MS)</li> </ul>
Climate Change Mitigation and Adaptation/ Energy	United Nations Framework Convention on Climate Change – adaptation to climate change
	The Paris Agreement
	The Energy Roadmap 2050 (White Paper)
	Climate Target Plan, COM (2020) 562 final
	European Climate Law /Regulation (EU) 2021/1119
	EU Strategy on Adaptation to Climate Change, COM(2021)82 final
	National Energy and Climate Plan
	National Strategy for adaptation to Climate Change
	National Climate Law (under preparation, the consultation has been completed in 24/12/21)
	<p>National Legislation (eg for RES)</p> <ul style="list-style-type: none"> <li>• Directive 2012/27/EU on Energy Efficiency</li> <li>• Directive 2009/28/EC on the promotion of the use of energy from renewable sources - National Action Plan for Renewable Energy</li> </ul>
Protection-Management of Marine and Coastal Zone	Maritime Strategy Framework Directive (MSFD) 2008/56 / EC
	<ul style="list-style-type: none"> <li>• Maritime Strategy for the Adriatic and Ionian Seas (COM(2012) 713</li> </ul>
	Integrated Coastal Zone Management (ICZM)
	Protocol on Integrated Coastal Zone Management in the Mediterranean (2008).
Territorial and urban development	Leipzig Charter on Sustainable Urban Development
Water	Water Framework Directive (WFD) 2000/60/EC
	Directive 2007/60/EC on the assessment and management of flood risks

Air Pollution- Noise	Directive 2008/50/EC on ambient air quality and cleaner air for Europe
	Directive 2002/49/EC relating on the assessment and management of environmental noise
Soil	Commission Communication entitled “Thematic Strategy for Soil Protection” (COM (2006) 231).
Circular Economy/ Waste	Directive 2008/98/EC on waste management (N. 4072/12)
	EU action plan for the Circular Economy, COM(2020)98 final
	National Action Plan for Circular Economy
	National legislation (eg Law 4042/2012, etc)
	National Waste Management Plan (in preparation)
	National Waste Prevention Plan
Cultural heritage and landscape	European Landscape Convention (2004)

### 3.3 Relationship with other programmes

The programme will support the national development strategies through targeted interventions on issues where cross-border action creates added value, facilitates more effective implementation, and ensures better efficiency in the use of resources. In this direction, it will contribute directly or indirectly to the achievement of the objectives of the National Partnership Agreements 2021-2027 of both countries and their National / Regional Operational Programmes, the Resilience and Recovery Plans and the Just Transition Mechanism. The priority areas, in which the CBC Programme can contribute, are:

- Supplemental activities to construction of TEN-T East-Med connections (both financed by PA and RRP of both countries) and especially for improved access to TEN-T and cross-border mobility.
- Climate resilience and risk management measures and efficient resource management as to be implemented by national and regional plans regarding WFD and Flood risk Directive, also included in PA and RRP.
- Cross-border activities regarding education, lifelong learning and inclusion would specialize the context of European Regional Development Fund (ERDF) and national programmes.
- Extroversion activities, support of entrepreneurship and development of research and innovation in the eligible area through INTERREG programmes

In local and regional level, synergies will be adapted with regional operational programmes in themes of tourism and culture initiatives.

The complementarities include Interreg Europe, INTERACT, URBACT and ESPON and applicable B Interreg Programmes Dunabe, Mediterreanean, ADRION. Whereas the Programme focus on solutions to solve the cross-border challenges, Interreg Europe allows for interregional capacity building to improve regional policies. Cooperation among all Interreg strands is furthermore ensured by the INTERACT programme in the various programme management areas.

### 3.3.1 Links with macroregional strategies

Each country is associated with a different macroregional strategy. The EU Strategy for the Danube Region (Bulgaria) focusing on comprising environmental threats, untapped shipping potential, insufficient energy connections, uneven socio-economic development, uncoordinated education and R&I systems, shortcomings in safety and security. The strategy and its action plan focus on four pillars – Connect the region, Protecting the Environment, building prosperity and Strengthen the Region, each of them with several key themes. On the other hand, the EU Strategy for the Adriatic-Ionian Region (Greece) aims to enhancing territorial cohesion and promoting the common challenges and goals of the area, while contributing to the further integration of the Western Balkans., The strategy and its action plan focus on four pillars – Sustainable Tourism, Connecting the region, Environmental Protection and Blue growth.

Synergies are nevertheless expected to be developed indirectly in common ground of strategies such as environmental planning and connectivity, while capacity building and best practices of the implementation of the macro-regional strategies may add value to the priorities selected and the implementation of projects of the Cooperation programme INTERREG VI-A Greece-Bulgaria 2021-2027.

## 4 DESCRIPTION OF THE PROGRAMME

This chapter contains the description of the programme with the particular reference to:

- a) Its geographical scope
- b) Its contents
- c) The projects and activities that may arise from its implementation.

### 4.1 Map of the Programme area

Interreg Greece – Bulgaria CBC Programme 2021-2027 is implemented at the NUTS III administrative area surrounding the 475 km border line that separates the two countries, plus the Regional Units of Thessaloniki, Kavala and Thasos. The border line stretches West to East from the tri-border point between Greece, Bulgaria and North Macedonia to the similar one between Greece, Bulgaria and Turkey. The eligible area includes:

- Seven (7) Greek Regional Units:
  - Region of Central Macedonia: Serres and Thessaloniki;
  - Region of Eastern Macedonia: Xanthi, Drama, Kavala, Thasos and
  - Region of Thrace: Evros, Rodopi
- Four (4) Bulgarian Regional Units:
  - Regions of Blagoevgrad, Haskovo, Smolyan, Kardzhali.



Figure 4-1: Map of the Programme area

The CBC area covers an overall area of 40,111 Km<sup>2</sup> with a population estimated at 2.663.345 inh. at 2019. The overall population density is 66,4 inhabitants per km<sup>2</sup>, almost the half of the EU27 average.

The cross-border cooperation area, stretches from the Bulgarian border with the Republic of North Macedonia to the West, to the valley of river Evros (Maritsa) to the East, and the Thracian plains to the North. The area includes the Rila, Pirin and Rhodope mountains, characterized by stunning woodland and a great potential for tourism development. The rivers Strimon (Struma), Nestos (Mesta), Arda (Arda) and Evros (Maritsa) run through the area and numerous lakes exist.

## 4.2 Programme's strategy

Cross-border cooperation is encouraged in order to build the resilience of the participating regions regarding the common challenges being among others economic transition, climate change, and digitisation. At the same time, cooperation will enable the regions to eliminate their economic and social disparities identified by the territorial analysis.

The programme's overall strategy is to enhance cooperation in the eligible area in order to become:

- greener and low carbon, including climate change mitigation, circularity of activities, multimodality;
- more social and inclusive, including better employment conditions, reinforced health services and reinforced tourism and culture sectors;
- a more secure Greece-Bulgaria area in the vision of a safer Europe.

## 4.3 Priorities

In the frame of the policy orientations of the new Cohesion Policy, the analysis indicates the persisting challenges that the Programme area faces in several areas (economic, environmental and social) that further hinder its potential for smart economic transformation, green transition (including carbon footprint, circularity, biodiversity preservation) and social inclusion also due to high level of unemployment and the pandemic.

To achieve the objectives, the programme has chosen to intervene in three Priorities, each one including some selected Specific objectives (SO) as follows:

### 4.3.1 Priority 1: A more Resilient and Greener Greece- Bulgaria Cross Border Territory.

SO1.4: Promoting climate change adaptation and disaster risk prevention and resilience, taking into account eco-system based approaches

Interreg Greece-Bulgaria 2021-2027 will support cross border cooperation to enhance capacities for an effective climate resilience and adaptation. As climatic phenomena and effects are not restricted by borders main principal for SO1.4 is the consideration of the integrity of the natural systems in planning and implementing prevention, control, and confrontation measures at the area. Cooperation fields can include both managerial (including information exchange and security plans) and infrastructure actions.

More specifically the Programme will fund actions for:

- Risk prevention, monitoring, planning and installation of early warning systems.
- Climate-proof landscape planning and eco-DRR (ecosystem-based Disaster Risk Reduction) measures.
- Cooperation plans, protocols, infrastructures, and equipment for effective risk treatment, including digital solutions.
- Adaptation measures for economic sectors affected by climate change such as winter sports, cultural tourism, gastro and wine tourism.

#### SO1.6: Promoting the transition to a circular and resource efficient economy

Strategy seeks to promote information capacity building, skills improvement and networking of different stakeholders (private-public partnerships, R&D, SMEs, public institutions, etc.) across the border to identify, develop and start joint circular economy solutions. Supported projects should aim to promote value chains based on resource efficiency and exploitation of local (bilateral) use, reuse and repair of secondary materials and outputs. Actions should also include awareness and capacity building measures along with good practices exchange tools.

More specifically the Programme will fund actions for:

- Development of Joint action plans for the promotion and application of CERE strategies
- Creation and support of cross-border and cross-sectoral networks and secondary / used material and products markets.
- Digital cooperation tools
- Development and application Entrepreneur Circular transformation models

Awareness raising and know-how exchange

#### S.O1.7: Enhancing biodiversity, green infrastructure in the urban environment and reducing pollution

Under the SO1.7 the Greece-Bulgaria Interreg Programme will support cooperation actions for the development and implementation of strategies, action plans, tools, trainings, and pilot actions that protect nature more efficiently and make environmental management more sustainable. Actions will focus on the appointment of joint approaches that are addressing common local conditions. Integrity of cross border ecosystems (river basins, forests, ecological corridors).

### 4.3.2 Priority 2: A more accessible Greece- Bulgaria Cross Border Territory

SO2.2: Developing and enhancing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross border mobility

Main target of the CBC Programme is to support the secondary transport network that will either support the diffusion from the TEN-T or will create local hubs to remote areas. This context also includes the promotion of multimodal mobility and connection of the local networks to the (under upgrade) railway network. Improvement of smart and sustainable transport will help to the reduction of geographic isolation of mountainous communities and will contribute to the uprise of economic and social interphase via direct cross border connection between neighbouring small cities (pop. From 10.000 to 100.000 inhabitants) that are currently disconnected. Improved accessibility in secondary connections is essential for encouraging the commercial and business cooperation, the formation of integrated competitive tourism destinations, cooperation in health and civil protection sectors.

National/ Regional ERDF and CF financial instruments are supporting cross border connectivity in the area both in TEN-T (upgrade of the railway line Thessaloniki – Sofia) and secondary connections (upgrade of the part Melivia – Dimario). During previous periods, the Greece-Bulgaria cooperation programmes supported the improvement of cross-border mobility by strengthening important parts of new links. In the new period this strategic choice remains timely, shaped accordingly and in line with the progress of the TEN-T and redefined by incorporating the guidelines for greener, resilient, and inclusive transport.

#### Main Actions are:

- Functional upgrade/ modernization, road safety and resilience improvements in secondary (non-TEN-T) connections that join urban or rural areas with cross border corridors.
- Actions that support the local connections to TEN-T, including improved access to local tourism and and business hubs and to facilitate sustainability of the CB mobility
- Bypass of urban centres of CB connection roads.
- Improvement of the coordination between regional transport operators across borders (including e.g. the harmonization and cross-border integration of ticketing information and services and the setting up of interregional partnerships of transport operators)
- Infrastructure for the service of persons with disabilities in cross-border corridors or border control stations.

### 4.3.3 Priority 3: A more inclusive Greece- Bulgaria Cross Border Territory

SO3.2: Improving equal access to inclusive and quality services in education, training and lifelong learning through developing accessible infrastructure, including by fostering resilience for distance and on-line education and training

Under SO.4.ii integrated interventions combining educational, employment and entrepreneurship are supported. To separate actions from other financial support measures, supported actions should focus on thematic areas of bilateral interest where practices such as educational and business models can be exchanged, or further cooperation between professionals can be encouraged. Those thematic areas can be agri-food endemic products, promotion of sustainable - territorial tourism, management of the cultural reserve, transportation, mountainous economy and resource management.

More specifically the Programme will fund actions for:

- Training activities to workers, self-employed, unemployed, and would-be Entrepreneurs focused on cooperation and common activities.
- Information and technical exchange on educational and training practices
- Support of self-employment – entrepreneurship of special target groups as women, youths, disabled.

**SO3.6: Enhancing the role of culture and sustainable tourism in economic development, social inclusion and social innovation**

For SO3.6 CBC Greece-Bulgaria 2021-2027 in alliance with National and Regional Tourism Development Strategies, will support territorial integration and networking aiming to encourage tourists that are visiting the area to navigate in the inner parts and to increase their cross-border mobility. Special attention will be given to a) the promotion of inclusive and silver tourism destinations in the area, as prominent tourism development activities that will provide multiple benefits to local development, b) adaptation of destination and tourism facilities to Climatic Threats.

More concretely, the programme will fund actions in the following thematic fields:

- Support of tourism destination and attractions networking across borders, including the creation of thematic networks and routes.
- Adaptation of tourism sector to Climate change and inclusiveness.
- Promotion of digitization of tourism resources and processes and adoption of digital and innovative tools in local tourism industry
- Upgrade of human resources and entrepreneur skills in tourism
- Linking of tourism with local (CBC) supply chain in the context “farm to fork” EU strategy.

Supported actions would create positive effects applied in the eligible area which will have a cross-border character. The overall expected results are following.

#### **4.4 Expected results**

Cooperation actions at cross-border level are expected to result in more strengthened capacities and skills in terms of the following:

- Improvement of relative position in Innovation performances to EU mean values

- Integrated risk management and early warning systems
- Increase of circular economy potential
- Rehabilitation of polluted lands / waste fields
- Halt of habitat, biodiversity, and biogenetic stock loss
- Natural capital as a sustainable growth factor.
- Improvement of mobility in favor of business cooperation and labor integration
- Increase of sustainable transport's share
- Upgrade of local public transport connections, improvement of mobility and travel safety

#### 4.5 Financing plan

The financial appropriations by year are shown in the next table:

**Table 4-1: Financial appropriations by year**

<i>Fund</i>	<i>2021</i>	<i>2022</i>	<i>2023</i>	<i>2024</i>	<i>2025</i>	<i>2026</i>	<i>2027</i>	<i>Total</i>
<i>ERDF</i>	6.044.665,05 €	8.059.553,40 €	9.402.812,30 €	9.738.627,03 €	10.746.071,20 €	11.417.700,65 €	11.753.515,38 €	67.162.945,00€
<i>Total</i>	6.044.665,05 €	8.059.553,40 €	9.402.812,30 €	9.738.627,03 €	10.746.071,20 €	11.417.700,65 €	11.753.515,38 €	67.162.945,00€

## 5 ALTERNATIVES

Modeling and evaluation of alternative planning scenarios is an important step of the strategic environmental assessment. In the Article 5 of Directive 2001/42/EC for strategic environmental assessment, it is mentioned that if an environmental impact assessment is required for a purpose, "an environmental report shall be prepared in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated".

These alternatives aim on detecting the future condition of all examined parameters and attempt to the description the final condition, i.e. the condition after the implementation of proposed actions.

The Programme's priority axes and specific objectives were elaborated based on the perspective for development and sustainable management and conservation of natural resources and biodiversity of the cross-border area.

In accordance with the SEA Directive, the alternatives should be realistic, i.e they should be feasible and eligible based on the specific data and regulations of the programme framework. The territorial cooperation Programme is not offered for an exhaustive study of alternatives mainly because it does not include any primary projects of large scale with significant potential environmental impacts. So, two (2) realistic alternatives have been considered:

- Zero alternative or the "do nothing scenario", in which the non- implementation of the programme is been examined consisting the zero scenario
- Suggested alternative; an updated programming strategy, which best integrates the requirements consisting the proposed solution.

For these two alternatives the effects on the environment and sustainable development are presented and evaluated, as follows.

### 5.1 Zero alternative: Zero solution (no plan or programme)

The zero scenario or the "do nothing scenario", i.e the non-implementation of the programme, will impede the real convergence with the developed regions of each country and the EU, with a negative impact on the economy, on the improvement of the living standards in the eligible areas, on the protection and enhancement of the natural and cultural wealth and on the improvement and protection of natural resources. More specifically it would result in the immediate cancellation of the funding of several million euros which should be directed towards actions with positive environmental impact. In this case, however, the expected environmental effect that will be lost is estimated to be much higher. The main element that will lead to the loss of this added value is the absence of the same programming framework that will allow coordination of actions for the joint protection and management of natural and cultural resources that require special support. Furthermore the cooperation and contact between two

neighboring countries will be diminished. In addition, the non-implementation of the programme, is opposed to the general principle of the EU for the cohesion and balancing of inequalities in governmental and regional level.

## **5.2 Suggested alternative: Preparing the Development Programme for the Period 2021-2027 based on a Centralized Strategic Planning (Planned Growth)**

The proposed solution, which was presented in Chapter 4, is considered to best integrate the requirements of actual environmental policy in the area and contribute to the pursuit of sustainable development in the cross-border area.

The present alternative solution aims to address deficiencies and problems that haven't been adequately addressed in the previous programming period and to give greater emphasis on actions relating to sustainable development and quality of life. In this way, the strategy will ensure the coherence and continuity with the present programming period in order to improve the effectiveness of the programme in the cross border area.

The new planned growth aims to exploit the strengths and the advantages of the cross border area, to address the weaknesses, to create new opportunities for socio – economic and regional development and to face the risks.

The Programme aim at the exchange, testing and spreading of good practices and policies. The Development Strategy of the programme, as specified in priorities and specific objectives, in the INTERREG VI-A CBC Programme Greece-Bulgaria 2021-2027, is consistent with the development needs of the Cross Border Area and includes the need for:

- Environmental protection and sustainable use of natural sources and the renewable energy as well.
- Risk Prevention and Natural Disaster Management.
- Promotion of sustainable transport infrastructures, information and communications network, water and waste management and energy efficiency.
- Improvement of the cross border capacity to support entrepreneurship, business sustainability and competitiveness.
- Conservation of cultural and natural resources as a precondition for the development of tourism.

Regarding the Zero Solution, the non-implementation of the Programme will impede the real convergence with the developed regions of each country, with a negative impact on the economy, the living standards of the eligible areas, the protection and enhancement of the natural and cultural wealth and the protection of natural resources.

The Suggested Alternative is selected, since it is going to improve natural and human environment and natural resources, building on and highlighting the strengths and reducing or/and eliminating the weaknesses, thereby reaching the goal of Sustainable Development.

Consequently, the evaluation of the alternatives for the implementation and non implementation of the Cooperation Programme (zero solution), for the programming period 2021- 2027, is based on criteria, which are related to the priorities of the EU in favor of sustainable development, protection and improvement of environmental quality, enhancement of economic growth, competitiveness and employment and social inclusion.

## 6 DESCRIPTION OF THE CURRENT STATE OF THE ENVIRONMENT

This section provides valuable information about the current situation of the environment by highlighting the key environmental issues and identifying the environmental characteristics of areas likely to be significantly affected within the study area.

### 6.1 Abiotic Environment

#### 6.1.1 Geography

The cross-border cooperation area includes the Region of Eastern Macedonia-Thrace and the Region of Central Macedonia in Greece and the South-Central Planning Region and South-West Planning Region in Bulgaria. The study area is delimited by West from the Bulgarian border with the Republic of North Macedonia, by the East from the Greek border with Turkey and the valley of river Evros (Maritsa), by the North from the Thracian plains and by the South from the Aegean and Thracian Sea.

The eligible area is mostly mountainous formed by the Rodopi, Belasica/ Kerkini and Slavyanka / Orvilos mountains and divided by valleys crossing the border line from North to South. The programme area also contains plain and coastal areas of the Macedonia – Thrace regions; the Thracian Pelagos and the northern part of the Thermaikos gulf as well as the two major islands of Thasos and Samothraki. Rough mountainous landscape and river streams act both as natural barriers between the Greek and Bulgarian territories and only few road passes (mostly opened during the last decades) are connecting the two countries. Mountains, valleys, coastal line and Islands are forming the diverse landscape of the CBC area. It includes variations from the Pirin Mountains to the forest of Rodopi, the lakes and the wetlands of the coastal areas and the Mediterranean landscape of Thasos and Samothraki islands. The Rila, Pirin and Rhodope mountains are characterized by stunning woodland and a great potential for tourism development. Respectively for the Greek eligible area, the National Parks of great importance are the parks of Evros, Rodopi, Kerkini, Dadias and Nestos.

#### 6.1.2 Climatic data - Atmosphere

The geographic location and the morphology of the area contribute to the formation of a wide array of climatic conditions. The coastal zones are mainly Mediterranean, whereas the hinterland is characterized by continental and in some cases alpine climate. The Rhodope Mountains form a barrier to the moderating influence of the Aegean. This barrier and the meeting of hot and cold air masses are causing frequent rainfalls during the wintertime and snowfall in higher altitudes. Microclimate permits a heavy snow cover to be preserved for a long time allowing winter recreation activities to be developed. Temperatures can be as low as -30°C in winter whereas in summer there is a large dispersion of values in the mountains and

in the coastal zones. The quality of air is generally good. There are hot spots mainly due to industrial activities but they are of limited impact. Two major polluters, metallurgy works plant and a uranium mine, operate in southwestern Bulgaria, contaminating the environment with lead, sulfur dioxide, hydrogen sulfide, ethanol, and mercury. Bulgarian air also holds the highest concentration of sulfur dioxide and carbon monoxide. At the Greek side the major polluters are concentrated near Kavala urban area, at the Karvali industrial area, where a petrochemical factory and a fertilizer company are the main polluters.

### 6.1.3 Geology – Soil

The programme area is consisted of a large number of different soil types ranging from alluvial coastal zones to Karst mountain areas and granite massives. River zones and delta areas are characterized from sand and gravel zones with limited permeability. Mountain areas contain a huge variety of soils with asbestolithic and metamorphic formations, alluvial elements etc. There is a large number of deposits ranging from lignite to gold and quicksilver. Marble is also an important development factor followed by turf and extended geothermal fields with immediate potential for exploitation. Punctual risks do exist mainly due to industrial contamination, intensive agriculture uses causing soil depletion, pesticides and mines (open pits for lignite). Erosion is not an extensive threat in the area; however, hot spots are identified mainly in coastal zones threatened by salinization.

### 6.1.4 Hydrology – Hydrogeology

According the River Basin Management Plans of Greece and the Water Act of Bulgaria, the area is characterized by a large number of significant rivers and water reservoirs. The most important of them, from east to west, are Maritza/Evros, Ardas Mesta/Nestos, Struma/Strymon and Vardar/Axios.

**The Maritza/Evros** river, with a length of 480 km, is the 2nd longest river that runs solely in the SE Europe (following Danube) with a great importance for all the Balkans. Evros springs in the Rila Mountains in Western Bulgaria, flowing southeast between the Balkan and Rhodope Mountains. Then, meeting with the Greek Bulgarian border, enters for a few kilometers in Turkish territory, forming the triangle of Karagats, near Edirne, whence is the geographical border between Greece and Turkey. Finally, it flows out in the northern Aegean Sea, in the so-called Thracian sea, forming a huge and labyrinthine-like delta, which forms one of the most significant Greek wetlands. Two main tributaries are formed; Toyntzas and Ardas. Finally, the river's quality is questioned, as a high concentration of heavy metals has been measured due to mineral activities waste in Bulgaria and Turkey. As a result, the levels of nitrate, nitrite, total phosphorus and ammonium salts are extremely high by the time Evros is flowing out in the Thracian Sea.

The Ardas is tributary of river Evros and it springs in the Bulgarian Rhodope Mountains near the town of Smolyan. The river is flowing for about 290 kilometers eastward, with 241 km crossing the Bulgarian territory and 49 km flowing through Greece. Then, it joins the Maritza/Evros river, just west of Edirne in Turkey. One of the main problems caused by Evros and its tributary Ardas are the annually reoccurring

floods especially at the beginning of spring. Due to the heavy snowfalls which are amounted to record water-levels in Bulgaria, the dams are frequently overflowing in the Ardas basin causing the floods.

**The Mesta/ Nestos** is one of the five longest Greek rivers and has a length of 243km of which 130 km are flowing through Greece and the rest through Bulgaria. It springs in the Rila Mountains and flows into the Thracian Sea near the island of Thasos after it crosses the mountain ranges of Western Rhodope Mountains and Mountain Falakro. The largest part of the river flows between mountain ranges, with the exception of the lowland area of the river's mouth, which occupies an area of 440 km<sup>2</sup> and expands as a deltaic system of high ecological and biodiversity value with many significant species of flora and fauna. The river's ecological quality is marked as incomplete. The most challenging threats the ecosystem faces are the water pollution from agricultural pesticides and toxic industrial waste caused by the timber industries, the operation of uranium mines, as well as the overgrazing and logging that occur in the study area.

**The Struma/Strymon** is a transboundary river, which flows through Greece, Bulgaria and the Republic of North Macedonia with a total length of 392 km. It springs in the Vitosha Mountain in Bulgaria, runs through lowland of Serres and lake Kerkini and finally flows out into Strymonikos Bay. The river enters Greece in acceptable quality levels. However, in lowland of Serres, the river is burdened by fertilizers and industrial waste.

Considering the overall quality of the surface and ground water, it can be designated as of incomplete to good status.

The main pressures are relevant with the agricultural, industrial and urban activity. The transboundary river basins are very important for the area's development taken into account the natural resources and the potential for sustainable development and tourism. Collaboration between Bulgarian and Greek governments for water management and especially river Mesta/Nestos started in 1964. From 1964 to 1991, three agreements were signed for these issues such as production of electric power and implementation of monitoring programs regarding quality and quantity. The most recent agreement was signed in 1995 with a duration of 35 years concerning the amount of Mesta/Nestos water discharge that should be available in the Bulgarian–Greek border.

Both Nestos and Evros are polluted with urban disposals (e.g. BOD) as well as with industrial disposals (minerals, toxic elements etc). The major problem is the management of urban wastewater resulting from the lack of infrastructure for sewage treatment in agglomerations with a population between 2,000 - 10,000 inhabitants and in smaller settlements where the collection networks have been constructed but the untreated wastewater are disposed into rivers and lakes and from management of sewage sludge produced in existing wastewater treatment installations. These problems are highlighting the need for pollution monitoring and early warning systems.

**The Vardar or Axios** is the longest river in North Macedonia and the second longest river in Greece. It rises at Vrutok, in Northern Macedonia and it's draining into Thermaikos Gulf near Thessaloniki. The river

is 388km long, with a basin population of 2 million inhabitants as of 2015. The study area includes the flow out of the river to the Aegean Sea, the Axios Delta; an area of great ecological importance.

### 6.1.5 Water use

Irrigation, industry use and power production are causing the water use burden within the cross-border area.

In the Maritsa/Evros the non-navigable river is used for power production and irrigation. Reservoirs on the Maritza include the Kiprinos Dam. The Bulgarian portion of Ardas river, tributary of river Evros, is accented by three hydroelectric and irrigation dams, Kardzhali Dam, Studen Kladenets and Ivaylovgrad Dam.

The Mesta/Nestos has more than 50 tributaries. Dospat is the longest one and it has its source in Bulgaria (Rozov Vrah, "Pink Peak"), it flows southeast until Dospat Dam, after which it makes a turn southwest to continue to the south and flow into the Mesta. In the Greek part of the study area, the most important dams interrupting the river's natural flow are in Thisavros, Platanovrisi and Temenos. These dams are used for irrigation, industrial use and production of hydroelectric power.

In the Greek part of **the Struma/Strymon** river, the very significant wetland of Lake Kerkini was formed, due to the construction of a dam. Main uses of this dam are flood protection and irrigation.

In the Axios basin, high nutrient surpluses have been estimated in both cropping and livestock systems (Laspidou and Samanzi, 2015), and better management of fertilization is recommended. More than 90% of the water is used for agriculture (Chatzinikolaou et al., 2010; Psomas et al., 2016). Based on surface water data, nutrient excess from agriculture appears to be the most considerable source of pollution. As a result agricultural activities increase nutrient concentrations in the river water and impact the groundwater. The aquifer in the lower catchment in Greece has been impacted significantly by both agricultural pollution and sea water intrusion due to pumping.

### 6.1.6 Land use

The cross-border area presents an altitude scaling, with mountainous areas mainly occupied by forests and woodland while lowland and coastal areas of the Aegean and the Thracian sea dominated by the agricultural use with strong presence of fields and pastures.

## 6.2 Natural environment - Biodiversity

The topography of this area contributes to the presence and development of numerous species and biotopes. Three main zones are distinguishable (Figure 6-1):

- the Mediterranean: in the plains and river lowlands and the coastal zones,
- the alpine: in the mountain zones of Bulgaria and

- the continental: mainly on the areas north of the Rhodope barrier.



Figure 6-1: Biogeographic zones in the study area (Reference: <http://natura2000.eea.europa.eu>)

Human impact on the ecosystems is equally diversified. Some zones are heavily exploited (e.g. the coastal zones, the Nestos valley and delta, the urban conglomerations north of the Rhodope Mountains, the Struma valley in Serres region). There endemic ecosystems have vanished and environment is almost entirely influenced by human activity. In other areas, the ecosystems have remained intact for thousands of years, rendering the area one of the most rich and biodiverse on the entire continent.

From the eastern side to west the most important ecological areas are:

- the riverside forests along the Maritza/Evros and Ardas Triangle with nesting zones for migratory birds, predators and sparrows, the forest of Dadia and the Maritza/Evros Delta, one of the most important zones in the area with a huge concentration of species and biotopes;
- the Porto Lagos lagoon and the lower Mesta/Nestos valley and delta pose;
- the Rhodope Mountains and Rila mountain in Bulgaria;
- the Fraktos Forest in Drama, recognized as one of the most important forest ecosystems;
- the valley of river Struma including Kerkini lake, an ecosystem with high ecological value.
- the Axios National Park, home to a vast array of flora and fauna.

### 6.2.1 Protected areas

Biodiversity is essential for human health and well-being, economic prosperity, food safety and security, and other critical areas necessary for the individual and collective thriving of all humans and all human societies. In this frame, EU has adopted the **European Green Deal** that provides an action plan for a more sustainable EU economy by boosting the efficient use of resources by moving to a clean, circular economy, restoring biodiversity and cutting pollution. Sustainable development is deeply rooted in the EU policies and the EU has fully committed itself to the implementation of the **2030 Agenda for Sustainable Development** (United Nations 2030 Agenda) and its 17 Sustainable Development Goals (SDGs). The **Convention of Biological Diversity (CBD)** introduces an action agenda focusing on the following topics among others: Conservation and restoration of land ecosystems, conservation and sustainable use of species; fresh water, coastal and ocean ecosystems as well as climate change and adaptation.

The designated protected areas of the eligible area are going to be presented in this chapter, as follows:

#### Natura 2000

A significant part of the study area consists of areas that have been included in the Network Natura 2000. All of these areas are shown on the map below, including SPAs and Special Areas of Conservation (SACs) of Directive 92/43/EOK, while many species are classified as threatened by the IUCN. . In the Greek part of the study area, according the national list of the European ecological network Natura 2000 updated in 2018<sup>2</sup>, there have been found 54 Natura 2000 sites, added to 35 identified sites in Bulgaria, bring us to the total number of 89 Natura 2000 sites of great significance, spread through the study area. In addition, the Special Protection Areas in the Greek territory, also belong to the Network of Important Bird Areas (IBAs) of Greece (Portolou et al., 2009). In the study area there are three marine Important Bird Areas; Samothraki Island, Mount Athos and surrounding marine area, Gulf of Kavala and marine area of Thasos Island.

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<sup>2</sup> [https://www.ekby.gr/ekby/el/natura\\_tables\\_el\\_Dec2017.pdf](https://www.ekby.gr/ekby/el/natura_tables_el_Dec2017.pdf)

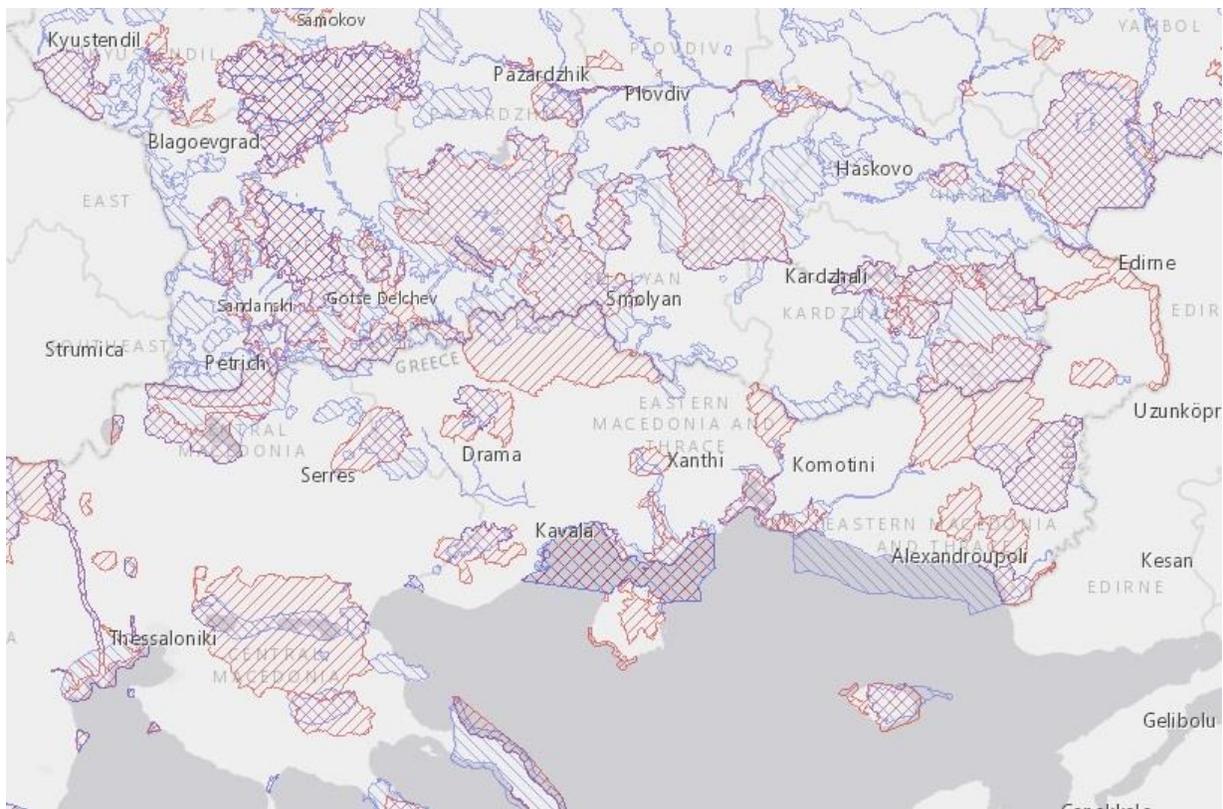


Figure 6-2: NATURA 2000 areas in Greece and Bulgaria eligible area (reference: Natura 2000 Network viewer)

### RAMSAR Wetlands

In the implementing programme area, six protected areas are identified based on the Ramsar International Convention, as shown in the table below.

Table 6-1: Identified Ramsar Wetlands

Name	Date of inclusion		Area
Evros Delta	21/08/75	Thraki	9,267 ha
Lake Vistonis, Porto Lagos, Lake Ismaris & adjoining lagoons	21/08/75	Thraki	24,396 ha
Nestos Delta & adjoining lagoons	21/08/75	Anatoliki Macedonia, Thraki	21,930 ha
Lakes Volvi & Koronia	21/08/75	Kentriki Macedonia	23,649 ha
Artificial Lake Kerkini	21/08/75	Kentriki Macedonia	10,996 ha
Axios, Loudias, Aliakmon Delta	21/08/75	Kentriki Macedonia	11,808 ha

## National Parks – Natural Parks – UNESCO Heritage

In the Greek part six areas have been characterized as National Parks in accordance with Greek legislation and numerous areas, in accordance with both Greek and Bulgarian legislation, have been recognized as forests of outstanding beauty, listed natural monuments, important bird sanctuaries, biogenetic reserves etc.

At the northeastern part of the study area, in district of Blagoevgrad, two out of three Bulgarian national parks are situated, Pirin and Rila National Parks as well as the Nature Park of Rila Monastery. The largest is the Pirin National Park, which is identified as a UNESCO World Heritage, covers an area of 403.32 km<sup>2</sup> and lies in an altitude between 1008m and 2914m.

Another important place is Rhodope Mountain, where a rich variety of ecosystems of the Balkan Peninsula can be found. Almost 60% of the European species can be encountered here and this consists the main reason why Rodopi Mountain Range is one of the most important regions of Europe. Many areas protected by national, European or international legislation and conventions. Forests cover more than 70 % and coniferous species prevail.

Places of high ecological importance are the Deltas formed at the mouth of rivers Nestos, Axios and Evros. All three are important wetlands recognized at national, European and international level, having a valuable role for wildlife and humans. These areas are included in the list of Ramsar Convention with wetlands of international importance and the Natura 2000 ecological network while in national level they are classified as National Parks.

### 6.2.2 Current Environmental Infrastructure

#### Wastewater Infrastructure

In Europe, the treatment of urban wastewater is regulated by the Council Directive 91/271/EEC concerning urban waste water treatment (UWWTD). A time plan has been set out for the construction of necessary infrastructure for collecting and treating waste water in agglomerations (urban areas), which generate more than 2 000 p.e. of waste water. The UWWTD sets common standards among countries for the concentrations of organic pollution, suspended solids, nitrogen and phosphorus in the discharges of treated urban waste water, as well as the necessary monitoring frequency. Each urban area that generates waste water more than 2 000 p.e. is assessed for its compliance with the UWWTD. In Greece, 96%<sup>3</sup> of sewage is treated in line with EU legislation; urban wastewater is treated in 232 plants across the country before it is discharged. In the eligible area are found four biological treatment plants that apply secondary treatment and 43 biological treatment plants with nitrogen and/or phosphorus removal.

In Bulgaria, just the 30%<sup>4</sup> of sewage is treated with the EU legislation. More specifically, two primary treatment, 35 biological treatment (secondary) and 75 biological treatment plants with nitrogen and phosphorous removal are operating throughout the country as it is shown in the map below. In the eligible area, much less treatment plants are operating. More specifically, seven biological treatment plants

<sup>3</sup> <https://water.europa.eu/freshwater/countries/uwwt/greece>

<sup>4</sup> <https://water.europa.eu/freshwater/countries/uwwt/bulgaria>

(secondary treatment) and six biological treatment plants with nitrogen and phosphorus removal.



Figure 6-3: Map of the wastewater treatment infrastructures in the eligible Greek area

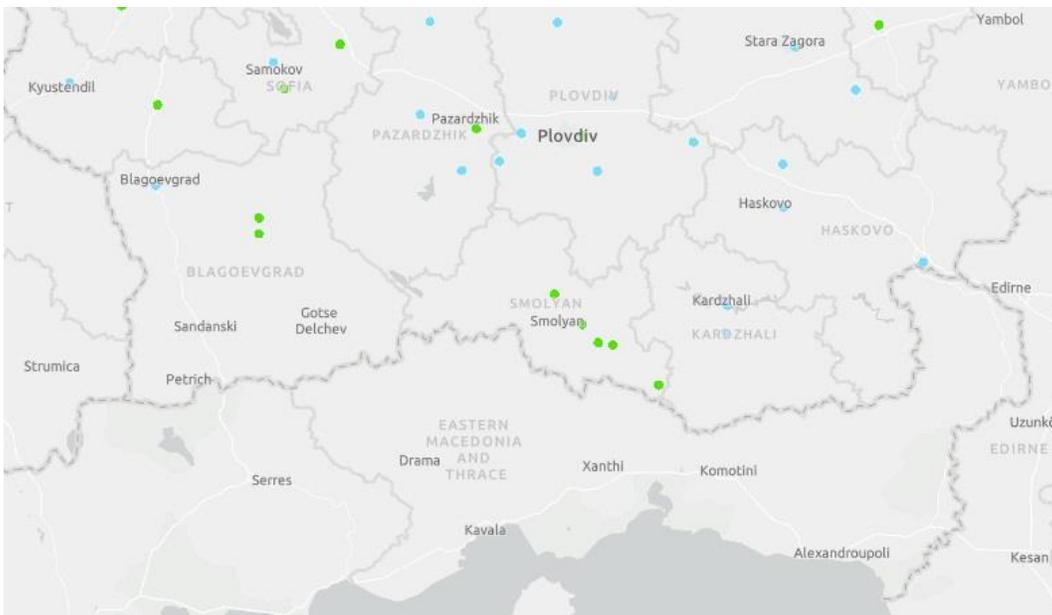


Figure 6-4: Map of the wastewater treatment infrastructures in the eligible Bulgarian area

## 6.3 Population – Economy – Employment

### 6.3.1 Population - Demography

The CBC area covers an overall area of 40,111 km<sup>2</sup> and a population estimated at 2.663.345 inh at 2019. The overall population density is 66,4 inhabitants per km<sup>2</sup>, almost the half of the EU27 average.

The Area of Thessaloniki is the most populated and most sparsely populated are the areas of Drama and Smolyan. Demographic decline is a long-term trend in the mountainous part of the region in both countries with ageing to be an equally unfavourable demographic condition. In general, Greece and Bulgaria have the third and fourth oldest population in Europe.

### 6.3.2 Economy

The Greece-Bulgaria CBC area is one of the poorest in the European Union, as the GDP (pps) per capita is below 50 % of the EU average. The CBC area is characterized by large internal disparities, as Bulgaria has long been a transition economy (Border Orientation Paper – BOP- Greece Bulgaria 2019, OECD 2021).

The impact of the SARS-COVID 19, so far, affected in a different way CBC area of both countries. In general, Greek economy is more vulnerable to the crisis than the Bulgarian. At 2020, the loss of GDP in Greece was 9.2% while in Bulgaria was less than 1%. (EU27 -4.5%).

Compared to the EU average, the economy remains considerably more agricultural, less industrial and more service-dependent.

### 6.3.3 Employment

The labor market differs significantly inside the cross-border region both in terms of employment (unemployment, sectors of activity) and in terms of earnings. Activity rate in 2019 was 74.7% for Eastern Macedonia – Thrace, 65.3% for Central Macedonia (decreased from 74.2% in 2017) and 73.8% in Bulgaria. Unemployment rate in Bulgaria at 2019, was one of the lowest in Europe (6.7%); in Blagoevgrad 4.1% (2019), in Haskovo 0.4%, in Kardzhali 2.0% and only in Smolyan it was 8.8% . On the contrary, Central Macedonia and Eastern Macedonia-Thrace are considered amongst the regions with the highest unemployment in Europe with rates of 19.6% and 16.2% accordingly.

Unemployment rate in both countries has increased further in 2020 due to the impact of SARS-COVID 19 on the economy. Tourism, recreation, and commerce are the sectors mostly affected.

Regarding the Labor market, “Border Orientation Paper (BOP) Greece – Bulgaria” points: On ‘higher education and lifelong learning’, the Bulgarian region of South-West scores above the EU average, whilst all other regions are slightly below the EU average; In terms of ‘labor market efficiency’, the Bulgarian region of South-West scores slightly above the EU average, whilst all other regions are below the EU average, with the two NUTS II regions in Greece scoring very substantially below the EU average. The

position of South-West region is does not reflect the situation of Blagoevgrad district. Data on labor market from NSI (2019) shows that Blagoevgrad and Haskovo are the districts with the lower average salary and wage nationally (9,810; 10,566 levs accordingly). On the other hand, Kardzhali and Smolyan are having considerably lower than the national average employment rate.

#### Labor Mobility

According to the Flash Eurobarometer (2016), only 7% of those surveyed from the Greece-Bulgaria border region indicated that they have ever travelled to their cross-border neighbor for work or business purposes, with the levels being remarkably similar for residents from both countries. This score is half the average of cross-border territories in EU. Only 3% of residents have travelled cross-border for work or business purposes 'several times a year or more often'.

B.O.P suggests that although there are national support systems for searching employment in the respective domestic contexts on either side of the Greek-Bulgarian border, and these systems each have knowledge of their neighbor's systems, there is limited cross-border coordination and cooperation between actors operating these systems. Therefore, there is no coordinated and joint information management on cross-border job vacancies and there are no effective assistance or advice services which support jobseekers and facilitate cross-border job placements of job seekers. The cross-border employment market also suffers due to the language difference.

#### **6.3.4 Digitization**

Greece and Bulgaria are both scoring at the tail of EU and being rated as 'underperforming' on DESI (Digital Economy and Society Index). In comparison, Greece has a relative better position in Integration of digital technologies and use of internet services and Bulgaria in Digital public services. In terms of eHealth services, Greece and Bulgaria are broadly similar in terms of ranking, both being rated well below the EU average. In Northern Greece (NUTS I) according to ELSTAT 2020, 78.8% of the population had access to internet. This percentage is slightly higher than the national average. In Bulgaria where more detailed statistic exists, the 75.1% of household is having access to the internet (2019, NSI). At Haskovo the share of households with Internet access is 68.1% and the share of individuals aged 16-74, regularly using internet is 58.4% (National share is 66.8%). At Kardzhali the shares are 67.5% and 57.3% respectively. Blagoevgrad shares are closer to national average (71.1%access, 65.2% use). In Smolyan shares in both indicators are 82.4% and 68.1%.

#### **6.3.5 Tourism**

Tourism shows significant variations in intensity and typology in the CBC area. More developed are the coastal Greek areas. City tourism is mainly developed due to Thessaloniki and secondary to Kavala, Xanthi and Drama. Nights spent in Greek areas are more than double of that in Bulgarian ones. The Bulgarian CB area is divided in 3 different Tourist zones: a) Thrace has 35 municipalities (of which 6 at the CB area), b) Region Rila – Pirin has 23 municipalities (of which 14 at the CB area) and c) Rodopi Zone is of 27

municipalities (of which 23 in the CB area). The main tourist product is related with winter and natural activities concentrated in the wider areas of the two major ski resorts of the area at Bansko (Blagoevgrad) and Pamporovo (Smolyan) and at traditional settlements. Nights spent by foreigners, amount to 56.8% in Greek and 47.9% in Bulgarian CBC areas. These percentages fall significantly short of the respective national percentages which were 84.6% for Greece and 79.8% for Bulgaria (2019).

The “B.O.P. Greece – Bulgaria” suggests that the area has great tourism potential with certain limitations: lack of information points - lack of sustainable tourism development plans and strategies capitalizing on area-specific resources - lack of integrated tourism destinations both thematically and territorially - poor natural and cultural heritage protection capacity - weak international visibility of cultural and natural resources.

Recent approaches such as the VIA EGNATIA Culture – Tourism ITI provide the strategic and financial framework to issue the integrated tourism development both thematically and territorially, creating conditions for the development of an attractive and sustainable tourism product. The SARS-COVID 19 pandemic crisis is expected to have a negative impact in the medium term and therefore the main priority for the next five years is expected to be the reconstruction and recovery of the tourism destinations, rather than the territorial expansion and interconnection. Moreover, the possibility of integrated spatial tourism development at CB level presupposes the interconnection of the internal zones of each destination (coastal with hinterland, winter tourism centers with cities and cultural monuments) which is in many cases absent.

## 7 ASSESSMENT, EVALUATION AND MANAGEMENT OF ENVIRONMENTAL EFFECTS OF THE PROGRAMME

### 7.1 Introduction

The evaluation of the results is based on the environmental parameters that are suggested through the Directive 2001/42/EC of the European Parliament as adapted by the JMD 107017/2006 of Greek Legislation, on the assessment of the effects of certain plans and programmes on the environment. These parameters will examine and reveal the possible effects that may arise through the programme's implementation. A considerable selection of these parameters is vital in order for the Strategic Environmental Assessment to be substantial.

The selection of the parameters is following:

1. Biodiversity
2. Population- Human health
3. Soil
4. Water
5. Air, Climate and climate change
6. Infrastructure
7. Cultural Heritage
8. Landscape
9. Noise
10. Sustainable development
11. Interrelationship.

The selection of the above parameters is in accordance with the appendix 3 of the JMD 107017/2006, with an addition of noise and sustainable development. The connection between the above parameters, is a factor which estimates the interaction and interrelationship of the above parameters with regards to the expected impact of them.

### 7.2 Methodology

For the evaluation of the environmental impacts, the methodology of **guiding questions** is being followed. This is a widely spread methodology, being introduced amongst others in «*Handbook on SEA for Cohesion Policy 2007 - 2013*» of the Greening Regional Development Programmes Network. According to this methodology, a network of evaluating questions is being formed, taking under consideration the environmental aims of the SEA, in order to determine all the possible environmental impacts for each

environmental parameter. The questions are formed in a way to get a yes or no answer. Moreover, the answers may give a clue of the magnitude of the impact.

This option promotes significantly the granularity of diagnosis, for the following reason: an environmental objective (e.g. improved air quality) depends on a number of environmental parameters (e.g. concentrations of NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, emissions of these pollutants by sector, etc.). Turning the focus of critical questions on environmental parameters can determine not only whether the INTERREG VI-A Cross-Border Cooperation Programme "Greece-Bulgaria 2021 -2027" helps achieve the environmental objective, but also which parameters contribute to environmental impacts, so as further evaluations can focus on detailed causal factors of impact and to propose appropriate measures.

The environmental impacts on each parameter will be examined per Priority and Specific Objective (SO).

The guiding questions which will be used in this SEA report are demonstrated in the following table.

Environmental Parameters	Guiding Questions
1. Biodiversity-flora and fauna	<p><b>Is the implementation of the SO expected to affect:</b></p> <p><b>B1: The extent and consistency (internal) of protected areas?</b></p> <p><b>B2: the conservation of habitats and protected species of flora and fauna?</b></p> <p><b>B3: The extent and consistency (internal) of forest ecosystems?</b></p> <p><b>B4 The maintenance of racial or genetic diversity, richness and composition of populations of wildlife species?</b></p>
2. Population, public health	<p><b>Is the implementation of the SO expected to affect:</b></p> <p><b>P1: the population demographics?</b></p> <p><b>P2: the population employment?</b></p> <p><b>P3: the population education level?</b></p> <p><b>P4: the level of public health services and the public health protection?</b></p> <p><b>P5: The exposure of individuals to new or increased sources of pollutants, radiations or other substances or energy that may be harmful to human?</b></p>
3. Soil	<p><b>Is the implementation of the SO expected to affect:</b></p> <p><b>G1: ground stability and geomorphology?</b></p> <p><b>G2: ground quality against pollution from waste and wastewater?</b></p> <p><b>G3: Effective waste management and compliance with the European obligations</b></p>
4. Waters	<p><b>Is the implementation of the SO expected to affect:</b></p> <p><b>W1: inland and coastal waters hydromorphology?</b></p> <p><b>W2: water resources efficiency;</b></p> <p><b>W3: waters quality against pollution from waste and wastewater?</b></p>
5. Air, climate and climate change	<p><b>Is the implementation of the SO expected to affect:</b></p> <p><b>AC1: Air Quality?</b></p> <p><b>AC2: Climate change adaptation</b></p> <p><b>AC3: Climate change mitigation by the reduction of GHGs emissions and the increase of CO<sub>2</sub> absorption?</b></p> <p><b>AC4: The achievement of the targets for renewable energy and energy efficiency?</b></p>

6. Material Assets-Infrastructure	<p>Is the implementation of the SO expected to affect:</p> <p>M1: The value of land, the public character and access to public goods?</p> <p>M2: The balanced territorial development (retaining population and income) and relationships of town - countryside?</p> <p>M3: the infrastructure</p>
7. Cultural Heritage	<p>Is the implementation of the SO expected to affect:</p> <p>H1: the protection and enhancement of cultural sites - monuments?</p>
8. Landscape	<p>Is the implementation of the SO expected to affect:</p> <p>L1: The existing character of the landscape,</p> <p>L2: the enhancement of natural landscape quality</p> <p>L3: The commitments of protection of the coastal zone?</p>
9. Noise	<p>Is the implementation of the SO expected to affect:</p> <p>N1: Noise levels</p> <p>N2: protection of people from noise pollution?</p>
10. Sustainable Development	<p>Is the implementation of the SO expected to affect:</p> <p>S1: the increase of the GDP while keeping low carbon footprint?</p> <p>S2: promoting the SDGs to the UN 2030 Agenda for Sustainable Development?</p>
11. Interrelationship	<p>Is the implementation of the SO expected to affect the interrelationship of the above parameters?</p>

The environmental impact assessment of each Priority or Specific Objective element is evaluated using the following criteria:

1. **Probability:** It expresses how much expected or not, an impact may be. The evaluation is primarily based on the consideration of:
  - (a) The impacts which are highly expected from an action, a type of project or an activity according to the experience on similar projects and
  - (b) The uniqueness of the conditions in which the programme is implemented, such as those identified in the current state of the environment.
2. **Scale-Direction of Impact:** Each action can have zero, positive or negative direction impacts, which may have different Scale, being strong or weak regarding the degree of intensity. The variation of the intensity is associated with the main scale of the project, the perception of the changes that are expected to bring about in critical factors, and the importance of the parameter that affects the type of area.

It is noted that, besides clear negative or positive impacts, ambiguous or mixed impacts may be identified and have one or both of the following characteristics:

- a) Have a positive effect on one environmental parameter, but negative on another. This case occurs often in actions involving different impacts direction during construction and operation phase (+/-).
- b) The scale and the direction of the impact depends on certain conditions which will be primarily determined by the specificity of actions. In these cases, beyond the identification of actions, those conditions will be

investigated in order to be proposed as measures to improve the environmental performance of the programme (see Chapter 8)

3. **Duration:** It refers to the amount of time that the impact will last. Short term duration usually happens during construction phase (e.g. noise from machinery, dust, etc.), while Long term duration mostly happens in some cases during the operation phase. As medium-term impacts are the impacts that occur after a critical concentration of a factor that creates disturbance.
4. **Reversibility:** It refers to the ability of the Priority or Specific Objective elements to prevent, reduce or offset or restore to the previous state of the environmental objective in the case either that the related action ends/ stops functioning or suitable mitigation measures are implemented. This criterion is not used for positive impacts.
5. **Cross- border dimension:** Refers to the spatial extent of the impacts, whether they affect both countries areas or one country only (local impact).
6. **Sequence:** It refers to the type of expected impacts that is whether they are primary or secondary impacts. Primary impacts happen near the Programme implementation area and concurrently with it. Secondary impacts of the Programme may occur because of the Programme implementation but in a distant geographical area or at another time.
7. **Interaction:** Refers to the cumulative or synergistic nature of the impact and the cumulative effects that may arise by the implementation and coexistence of two or more impacts and how their scale is affected.

The above criteria, their rating and the symbols that will be used to assess the environmental impact of the CBC Programme “Greece – Bulgaria 2021-2027”, are illustrated in Table 7-1.

The assessment and evaluation of the impacts occurring by the programme's implementation, will take into consideration the content of the CBC Programme "Greece-Bulgaria 2021-2027" and the environmental status of the eligible area, as it's described in Chapter 6. The relevant analysis will result in a number of environmental parameters, identified to have a negative or positive impact. These findings will be presented in Table 7-2.

**Table 7-1: Impact Assessment Criteria and Symbols**

Criterion	Abbreviation	Evaluation rank	Symbol	
1	Probability	Prob	Very Probable	++
			Probable	+
			Non Probable	0
2	Scale-Direction	Scale	Large scale Negative impact	--
			Small scale Negative impact	-
			No impact	0

			Large scale Positive impact	++
			Small scale Positive impact	+
3	Duration	Dur	Long term or permanent impact	>>
			Short term or temporal impact	>
			No impact	0
4	Reversibility	Rev	Reversible	+
			Irreversible	-
			No impact	0
5	Cross Border dimension	Cross	Cross border impact	B
			Non Cross border impact-Local	L
			No impact	0
6	Sequence	Seq	Primary	P
			Secondary	S
			No impact	0
7	Interaction	Int	Cumulative	CU
			Synergistic	SY
			No interaction	n-I
			No impact	0

### 7.3 Do no significant harm (DNSH)

Before the strategic environmental impact assessment which will follow, the Programme will be first evaluated according to the “**Do no significant harm (DNSH)**” principle.

According to the **Taxonomy regulation** "The Funds should support activities that would respect the climate and environmental standards and priorities of the Union and would do no significant harm to environmental objectives within the meaning of Article 17 of Regulation (EU) No 2020/852 "().

In order to implement the DNSH principle, the following environmental objectives will be examined, as defined in Article 17 of the Taxonomy Regulation.

1. Climate change mitigation
2. Climate change adaptation
3. Sustainable use and protection of water and marine resources
4. Circular economy
5. Pollution prevention and control
6. Protection and restoration of biodiversity and ecosystems.

The DNSH principle evaluation is presented in the next table. As it is shown, the evaluation is based on the answer given on a specialized question which is addressed to each environmental objective.

**Table 7-2: Environmental Assessment of the Programme using DNSH objectives**

	Environmental objective	Question	Answer	Justification of DO NO SIGNIFICANT HARM
1	<b>Climate change mitigation</b>	Is the Programme expected to lead in significant GHG emissions?	NO	The energy sector is a key factor for the development of 2030 energy and climate policies, for both countries. The National plan for Energy and Climate (NPEC) for both countries includes targets for the reduction of GHGs emissions as well as saving energy, enhancing RES, avoiding land use change on areas that may act as emission sinks (e.g afforestation) and improving energy efficiency performance. The implementation of the programme is in line with the above guidelines and it will not lead to significant GHG emissions.
2	<b>Climate change adaptation</b>	Is the Programme expected to lead to an increased adverse impact of the current climate and the expected future climate, on the activity itself or on people, nature and assets?	NO	In the context of climate adaptation, prevention and preparedness measures, awareness campaigns for disaster risk management, flood protection and the development of early warning systems, constitute significant challenges in the eligible area. The programme is in line with the above guidelines.
3	<b>Sustainable use and protection of water and marine resources</b>	Is the Programme going to be detrimental to the good status or the good ecological potential of bodies of water, including surface water and groundwater, or to the good environmental status of marine waters?	NO	In the cross-border area, investment needs should be identified, enhancing the sustainable water management. Investments and interventions are considered very important for the development of green infrastructure for the management of wastewater; including surface water and groundwater. Through the programme, cooperation actions may implement for the elimination of soil, air and water pollution.
4	<b>Circular economy</b>	Is the Programme expected to lead to significant inefficiencies in the use of materials or in the direct or indirect use of natural resources, or if it significantly increases the generation, incineration or disposal of waste, or if the long-term disposal of waste may cause significant and long-term environmental harm?	NO	The environmental resources protection, is a key factor for the overall development of the eligible area. The transition to a circular economy can be strengthen by the cooperation of the two members in the specific fields for example of sustainable production and consumption of products, less waste with greater value, ect; which is vital for the environmental sustainability of the Region.

5	<b>Pollution prevention and control</b>	Is the Programme expected to lead to a significant increase in emissions of pollutants into air, water or land?	NO	The cooperation actions for the reduction of the air, soil, noise and water pollution are expected to fulfil the eligible area's needs.
6	<b>Protection and restoration of biodiversity and ecosystems</b>	Is the Programme going to be significantly detrimental to the good condition and resilience of ecosystems, or detrimental to the conservation status of habitats and species, including those of Union interest?	NO	The protection of the natural environment and biodiversity is the baseline priority of both countries, which is brought in alignment with the EU Biodiversity Strategy and the EU Forest Strategy. Cooperation actions and exchange of good practices should be implemented in the frame of protection and prevention of the natural environment e.g. in the forest environment; In particular, significant attention should be given to the raise of social awareness and the involvement of the society in the above issues.

#### 7.4 Environmental Impact Assessment

The evaluation which is performed in the following table illustrates that the programme demonstrates a clear compatibility with the objectives of the Green Deal and the proposed Eighth EU Environmental Action Programme. Moreover, the programme has adopted environmental sustainability as a horizontal principle.

The analysis of the Policy Objectives followed by the environmental Impact assessment evaluation in tabular form, are following.

**PO2: A greener, low-carbon transitioning towards a net zero carbon economy and resilient Europe by promoting clean and fair energy transition, green and blue investment, the circular economy, climate change mitigation and adaptation risk prevention and management, and sustainable urban mobility**

- SO1.4: Promoting climate change adaptation and disaster risk prevention and resilience, taking into account eco-system based approaches
- SO1.6: Promoting the transition to a circular and resource efficient economy
- S.O1.7: Enhancing biodiversity, green infrastructure in the urban environment and reducing pollution

The programme is going to support actions and measures in order to reduce the vulnerability of the programming area to climate change and especially to floods, landslides, forest fires and heatwaves, as well as prevent and manage related risks that the area faces. All actions and measures for climate change adaptation and disaster risk prevention will have positive primary impacts to the local societies not only by the means of the socio-economic field but over and above to their health and prosperity. These actions will lead to a primarily positive impact regarding climate change and protection of natural ecosystems. The preservation of protected species will be strengthened, consisting a positive impact, which is indirect though significant for the protection of the biodiversity. Raising the awareness and education regarding

civil protection and disaster management, as well as, the implementation of early warning systems, will have a positive impact also in the natural environment in the aspects of air, ground and water quality preservation and enhancement. The objectives will be aligned with the EU Green Deal priorities and their implementation will promote the SDGs of UN 2030 Agenda for Sustainable Development. The programme will contain actions that include the creation of platforms and other forms of networks. For example the awareness- raising actions and education in issues related to climate change adaptation, risk prevention and enhanced protection and preservation of nature and biodiversity. These actions will enable the interaction among key stakeholders for the exchange of knowledge and best practices; will have a positive impact in the population in social and economic terms. The impacts are evaluated as of high probability and long term positive impacts.

The programme is going to promote strategies across the borders, in order to identify, develop and start joint circular economy solutions. Supported projects will aim to promote value chains based on resource efficiency and exploitation of local (bilateral) use, reuse and repair of secondary materials and outputs. The programme is in compliance with the EU action plan for Circular economy, leading to strongly positive impacts in sustainable development sector. These actions might also provide added value to local businesses, leading to a positive impact in material assets and infrastructure sector. Waste of several sources is linked to the coastal management as well as to water management. Initiatives that support infrastructure for the development of industrial symbiosis, reduction of waste, improved management of waste and promote resource efficiency (reform, reduce, recycle), consist another positive impact of the programme in terms of soil and water protection. On the basis of the behavioral change of single actors, knowledge and awareness raising will be achieved and skills in the area of circular economy in all sectors will be strengthened.

An action included in the programme is the joint monitoring, management and restoration plans of ecologically connected protected areas divided by border line, as well as green and blue infrastructures that support functions of ecological corridors in the CBC areas. Actions like these act significantly for the protection and preservation of the natural environment, consisting a positive impact applied in the biodiversity sector. The programme also includes actions for the promotion of wellbeing of the inhabitants in urban areas. Green areas (e.g. urban forests) and blue areas (e.g. lakes) can support the functions of ecological corridors in the areas with important primary positive impacts for both the preservation of natural environment and the wellbeing of the inhabitants.

Table 7-3: Environmental Impact Assessment of PO2

Impact Evaluation of SO1.4 , SO1.6 and SO1.7									
Environmental parameter	Environmental Objective-Question	Prob	Scale	Dur	Rev	Cross	Seq	Int	
Is the implementation of the SO expected to affect:									
<b>Biodiversity flora- fauna</b>	- <b>B1:</b> the extent and consistency (internal) of protected areas?	+	++	>>	0	B	P	SY	
	<b>B2:</b> the conservation of habitats and protected species of flora and fauna?	++	++	>>	0	B	P	SY	
	<b>B3:</b> the extent and consistency (internal) of forest ecosystems?	++	++	>>	0	B	P	SY	
	<b>B4:</b> the maintenance of racial or genetic diversity, richness and composition of populations of wildlife species?	+	++	>>	0	B	P	SY	
<b>Population Public Health</b>	- <b>P1:</b> the population demographics?	+	++	>	0	L	S	n-l	
	<b>P2:</b> the population employment?	++	++	>	0	L	S	SY	
	<b>P3:</b> the population education level?	+	+	>	0	L	S	n-l	
	<b>P4:</b> the level of public health services and the public health protection?	+	+	>	0	L	S	n-l	
	<b>P5:</b> the exposure of individuals to new or increased sources of pollutants, radiations or other substances or energy that may be harmful to human?	0	0	0	0	0	0	0	0
<b>Soil</b>	<b>G1:</b> ground stability and geomorphology?	+	++	>>	0	B	S	CU	
	<b>G2:</b> ground quality against pollution from waste and wastewater?	++	++	>>	0	B	P	CU	
	<b>G3:</b> effective waste management and compliance with the European obligations	++	++	>>	0	B	P	CU	
<b>Water</b>	<b>W1:</b> inland and coastal waters hydromorphology?	+	+	>>	0	B	P	CU	
	<b>W2:</b> water resources efficiency?	++	++	>>	0	B	P	CU	
	<b>W3:</b> waters quality against pollution from waste and wastewater?	+	++	>>	0	B	P	CU	
<b>Air, climate and climate change</b>	<b>AC1:</b> the air quality?	+	+	>>	0	B	P	CU	
	<b>AC2:</b> the climate change adaptation?	++	++	>>	0	B	P	CU	
	<b>AC3:</b> Climate change mitigation by the reduction of GHGs emissions and the increase of CO2 absorption?	++	++	>>	0	B	P	CU	

	<b>AC4:</b> the achievement of the targets for renewable energy and energy efficiency?	++	++	>>	0	B	P	CU
<b>Material Assets - Infrastructure</b>	<b>M1:</b> the value of land, the public character and access to public goods?	+	+	>>	0	L	S	n-I
	<b>M2:</b> the balanced territorial development (retaining population and income) and relationships of town - countryside?	++	++	>>	0	L	P	SY
	<b>M3:</b> the infrastructure?	+	++	>>	0	L	P	SY
<b>Cultural Heritage</b>	<b>H1:</b> the protection and enhancement of cultural sites - monuments?	+	++	>>	0	L	S	SY
<b>Landscape</b>	<b>L1:</b> the existing character of the landscape?	+	++	>>	0	B	P	CU
	<b>L2:</b> the enhancement of natural landscape quality?	++	++	>>	0	B	P	CU
	<b>L3:</b> the commitments of protection of the coastal zone?	+	++	>>	0	L	S	CU
<b>Noise</b>	<b>N1:</b> the noise levels?	+	+	>	0	L	S	n-I
	<b>N2:</b> the protection of people from noise pollution?	+	+	>	0	L	S	n-I
<b>Sustainable Development</b>	<b>S1:</b> the increase of the GDP while keeping low carbon footprint?	++	++	>>	0	B	P	CU
	<b>S2:</b> promoting the SDGs to the UN 2030 Agenda for Sustainable Development?	++	++	>>	0	B	P	CU
<b>Interrelationship</b>	The interrelationship of the above parameters?	+	+	>>	0	B	P	CU

### PO3: A more connected Europe by enhancing mobility

- SO2.2: Developing and enhancing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross-border mobility

The main target of the CBC Programme is to support the secondary transport network; either by supporting the diffusion from the TEN-T or by creating local hubs to remote areas. In this context, the promotion of multimodal mobility and connection of the local networks to the railway network, is included. These actions will act positively to the population in terms of accessibility, safety and connectivity between the two Member States. Improvement of smart and sustainable transport is acting towards the reduction of geographic isolation of mountainous communities and will contribute to the uprise of economic and social interphase via direct cross border connection between neighboring small cities (pop. From 10.000 to 100.000 inhabitants) that are currently disconnected. Promoting sustainable transportation, is aligned with the targets of supporting energy efficiency, and is expected to have a

positive effect on climate conditions. The improvement of road network will indirectly contribute in the improvement of air quality, by facilitating mobility of vehicles which do not produce significant amounts of air pollutants, contributing to climate change mitigation by the reduction of GHGs emissions. Consequently, large-scale positive effects are expected. The predicted actions would have cumulative positive results and cross-border dimension. The results are expected to have a permanent positive effect. Improved access networks have large-scale positive effect on the landscape with long-term results. Slight negative effect is expected during the construction phase of the infrastructure which is expected to be short and last only during the execution of the works. The appropriate measures are going to be taken in order to minimize the effects on soil, air, and water pollution that may arise.

**Table 7-4: Environmental Impact Assessment of PO3**

Impact Evaluation of SO2.2								
Environmental parameter	Environmental Objective-Question	Prob	Scale	Dur	Rev	Cross	Seq	Int
<b>Is the implementation of the SO expected to affect:</b>								
<b>Biodiversity - flora-fauna</b>	<b>B1:</b> the extent and consistency (internal) of protected areas?	0	0	0	0	0	0	0
	<b>B2:</b> the conservation of habitats and protected species of flora and fauna?	+	-/+	>	+	B	S	n-l
	<b>B3:</b> the extent and consistency (internal) of forest ecosystems?	0	0	0	0	0	0	0
	<b>B4:</b> the maintenance of racial or genetic diversity, richness and composition of populations of wildlife species?	+	+	>>	0	B	S	n-l
<b>Population - Public Health</b>	<b>P1:</b> the population demographics?	+	++	>>	0	L	P	CU
	<b>P2:</b> the population employment?	+	++	>>	0	L	P	CU
	<b>P3:</b> the population education level?	+	+	>>	0	L	S	n-l
	<b>P4:</b> the level of public health services and the public health protection?	+	++	>>	0	B	P	CU
	<b>P5:</b> the exposure of individuals to new or increased sources of pollutants, radiations or other substances or energy that may be harmful to human?	0	0	0	0	0	0	0
<b>Soil</b>	<b>G1:</b> ground stability and geomorphology?	0	0	0	0	0	0	0
	<b>G2:</b> ground quality against pollution from waste and wastewater?	+	-/+	>	+	B	S	n-l

	<b>G3:</b> effective waste management and compliance with the European obligations	+	++	>>	0	L	P	n-l
<b>Water</b>	<b>W1:</b> inland and coastal waters hydromorphology?	0	0	0	0	0	0	0
	<b>W2:</b> water resources efficiency?	+	+	>>	0	L	S	n-l
	<b>W3:</b> waters quality against pollution from waste and wastewater?	+	-/+	>	+	B	S	n-l
<b>Air, climate and climate change</b>	<b>AC1:</b> the air quality?	++	-	>	+	L	P	CU
	<b>AC2:</b> the climate change adaptation?	++	++	>>	0	B	S	CU
	<b>AC3:</b> Climate change mitigation by the reduction of GHGs emissions and the increase of CO2 absorption?	++	++	>>	0	B	P	CU
	<b>AC4:</b> the achievement of the targets for renewable energy and energy efficiency?	++	++	>>	0	B	S	CU
<b>Material Assets - Infrastructure</b>	<b>M1:</b> the value of land, the public character and access to public goods?	+	++	>>	0	B	P	CU
	<b>M2:</b> the balanced territorial development (retaining population and income) and relationships of town - countryside?	+	++	>>	0	B	P	n-l
	<b>M3:</b> the infrastructure?	+	++	>>	0	B	P	n-l
<b>Cultural Heritage</b>	<b>H1:</b> the protection and enhancement of cultural sites - monuments?	0	0	0	0	0	0	0
<b>Landscape</b>	<b>L1:</b> the existing character of the landscape?	+	+	>	0	L	P	n-l
	<b>L2:</b> the enhancement of natural landscape quality?	+	+	>>	0	L	S	n-l
	<b>L3:</b> the commitments of protection of the coastal zone?	+	+	>	0	L	S	n-l
<b>Noise</b>	<b>N1:</b> the noise levels?	+	-	>	+	L	S	n-l
	<b>N2:</b> the protection of people from noise pollution?	+	+	>>	0	L	S	n-l
<b>Sustainable Development</b>	<b>S1:</b> the increase of the GDP while keeping low carbon footprint?	+	++	>>	0	B	P	CU
	<b>S2:</b> promoting the SDGs to the UN 2030 Agenda for Sustainable Development?	++	++	>>	0	B	S	CU
<b>Interrelationship</b>	The interrelationship of the above parameters?	+	+	>>	0	B	P	CU

#### PO4: A more social and inclusive Europe implementing the European Pillar of Social Rights

- SO3.2: Improving equal access to inclusive and quality services in education, training and lifelong learning through developing accessible infrastructure, including by fostering resilience for distance and on-line education and training.
- SO3.6: Enhancing the role of culture and sustainable tourism in economic development, social inclusion and social innovation

The programme is going to support partnerships/ initiatives for enhanced access to employment for groups that may face constraints (women, youth, migrants, ect). In addition, it is going to support the development of joint platforms or other types of digital infrastructure (e-learning, e-education, e-trainings ect). Considering the high level of unemployment, especially for young people as well as high level of NEETs (Not in Education, Employment, or Training) in the Programme area, actions like these, will act positively towards the eligible area's needs; will tackle high levels of unemployment as well as high levels of NEETs of the area and the consequences related to ageing population by having a positive impact in the population employment and educational level.

Additionally, the programme will support the increase of the number of services of general interest (for example hospitals, primary schools and train stations) that are also located in disadvantageous areas. Social infrastructures for dis-connected communities (e.g people of mountain-villages) or for elders will improve the quality of their life with important positive long-term impacts on the population's well-being and prosperity. In this way, the transition to a more social and inclusive GR-BL area is going to be promoted, and the programme will have positive impacts in the sector of infrastructure by enhancing the public character and access to public goods.

The programme is going to enhance the role of culture and tourism with a focus to sustainable tourism taking into account advanced technologies and the potential offered in the frame of the new reality that has occurred since the pandemic outbreak. The proposed actions will aim in this frame to promote sustainable and thematic cultural routes at regional as well as macro-regional level by further distributing tourism flows. The implementation of these objectives will be aligned with the SDGs of UN 2030 Agenda for Sustainable Development, leaving a strongly positive impact in this parameter.

The implementation of innovative technologies in the tourism sector, will increase the number of visitors in the eligible area, so will lead to important positive socio-economic impacts ensuring the protection and conservation of natural environment.

In the frame of promoting sustainable tourism, the promotion of cultural heritage including blue cultural heritage is also going to be strengthen. This will lead to positive impacts in the sustainable development and cultural heritage sectors by promoting actions which will enhance the cultural sites and monuments. Against this background, the workforce that is employed in the sectors of tourism and culture will need to have the necessary capacities and enhanced skills. This will have another positive impact in the population in terms of education and improvement of skills.

Table 7-5: Environmental Impact Assessment of PO4

Impact Evaluation of SO3.2 and SO3.6								
Environmental parameter	Environmental Objective-Question	Prob	Scale	Dur	Rev	Cross	Seq	Int
Is the implementation of the SO expected to affect:								
<b>Biodiversity flora- fauna</b> -	<b>B1:</b> the extent and consistency (internal) of protected areas?	0	0	0	0	0	0	0
	<b>B2:</b> the conservation of habitats and protected species of flora and fauna?	+	+	>>	0	B	S	n-l
	<b>B3:</b> the extent and consistency (internal) of forest ecosystems?	0	0	0	0	0	0	0
	<b>B4:</b> the maintenance of racial or genetic diversity, richness and composition of populations of wildlife species?	+	+	>>	0	B	S	n-l
<b>Population Public Health</b> -	<b>P1:</b> the population demographics?	+	+	>>	0	L	S	SY
	<b>P2:</b> the population employment?	++	++	>>	0	B	P	SY
	<b>P3:</b> the population education level?	++	++	>>	0	B	P	SY
	<b>P4:</b> the level of public health services and the public health protection?	+	+	>>	0	B	P	SY
	<b>P5:</b> the exposure of individuals to new or increased sources of pollutants, radiations or other substances or energy that may be harmful to human?	0	0	0	0	0	0	0
<b>Soil</b>	<b>G1:</b> ground stability and geomorphology?	0	0	0	0	0	0	0
	<b>G2:</b> ground quality against pollution from waste and wastewater?	+	++	>>	0	L	S	n-l
	<b>G3:</b> effective waste management and compliance with the European obligations	++	++	>>	0	L	S	n-l
<b>Waters</b>	<b>W1:</b> inland and coastal waters hydromorphology?	+	+	>	0	L	S	n-l
	<b>W2:</b> water resources efficiency?	+	++	>>	0	B	S	CU

	<b>W3:</b> waters quality against pollution from waste and wastewater?	+	++	>>	0	B	S	CU
<b>Air, climate and climate change</b>	<b>AC1:</b> the air quality?	+	-/+	>	+	L	S	n-l
	<b>AC2:</b> the climate change adaptation?	+	++	>>	0	B	P	CU
	<b>AC3:</b> Climate change mitigation by the reduction of GHGs emissions and the increase of CO2 absorption?	+	++	>>	0	B	P	CU
	<b>AC4:</b> the achievement of the targets for renewable energy and energy efficiency?	+	++	>>	0	B	P	CU
<b>Material Assets - Infrastructure</b>	<b>M1:</b> the value of land, the public character and access to public goods?	+	++	>>	0	L	S	CU
	<b>M2:</b> the balanced territorial development (retaining population and income) and relationships of town - countryside?	+	++	>>	0	L	S	n-l
	<b>M3:</b> the infrastructure?	++	++	>>	0	B	P	n-l
<b>Cultural Heritage</b>	<b>H1:</b> the protection and enhancement of cultural sites - monuments?	++	++	>>	0	B	P	n-l
<b>Landscape</b>	<b>L1:</b> the existing character of the landscape?	+	-/+	>	+	L	S	n-l
	<b>L2:</b> the enhancement of natural landscape quality?	+	+	>	0	L	S	n-l
	<b>L3:</b> the commitments of protection of the coastal zone?	+	+	>	0	L	S	n-l
<b>Noise</b>	<b>N1:</b> the noise levels?	0	0	0	0	0	0	0
	<b>N2:</b> the protection of people from noise pollution?	+	+	>	0	L	S	n-l
<b>Sustainable Development</b>	<b>S1:</b> the increase of the GDP while keeping low carbon footprint?	+	++	>>	0	B	P	CU
	<b>S2:</b> promoting the SDGs to the UN 2030 Agenda for Sustainable Development?	++	++	>>	0	B	S	CU
<b>Interrelationship</b>	The interrelationship of the above parameters?	+	+	>>	0	B	P	CU

In order to protect the environment and the quality of life, projects under the Interreg Cross-Border Cooperation Programme Greece-Bulgaria 2021-2027, which are listed in Annex I (or Annex II) of Directive 2011/92/EU (EIA Directive) shall be made subject to an assessment in accordance with Articles 5-10 of the above mentioned Directive. The effects of such a project on the environment should be assessed in order to take account of concerns to protect human health, to contribute by means of a better environment to the quality of life, to ensure maintenance of the diversity of species, to maintain the reproductive capacity of the ecosystem as a basic resource for life and to achieve the Climate objectives of Paris Agreement both on mitigation and adaptation fields. For such projects, the evaluation of an Environmental Impact Assessment Study (provided by the developer of the project) is needed and the competent authority or authorities in Greece and Bulgaria shall adopt for such projects all appropriate and necessary measures in national or/and transboundary level in order to ensure the implementation of the prevention and precautionary principle.

## 8 MITIGATION MEASURES AND MONITORING

### 8.1 MITIGATION MEASURES

The prevention, reduction and mitigation of environmental impacts of the Programme is realized through two main mechanisms: a) the environmental permitting of projects and activities as it is in force and b) the creation of special provisions and / or conditions that will be applied in the implementation of the programme and will be integrated in the management processes (projects approvals etc).

a) Environmental permitting of projects and activities.

The impacts of each project are controlled by the environmental permitting process as it is in force in Europe acquis and is specialized on the implementation procedures of the institutional framework of the two countries. The approval of a project in the programme does not modify its obligations according to the Environmental Permitting, under which specific terms and conditions of its implementation are imposed. The relevant Environmental Impact Assessment Reports (EIA) should (not exclusively) include the following issues:

- Compliance with the specific emission limit values of pollutant loads and concentrations for air, water and soil in accordance with the applicable provisions.
- Compliance with the specific limit values of noise.
- Compliance with national or regional planning for the environment, such as waste management plan, the basin management plans of the WFD, etc.
- The suitability of locating in accordance with the approved land use plans and building restrictions.
- Taking into account all the necessary measures that are provided by the legislation in relation to the prevention and reduction of pollution of protected areas, sea and forest.
- Projects that are located in areas included in the Natura2000 network (as SCI or SPA), will have to comply with Article 6.3 of Habitats Directive 92/43/EEC, that is: *“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect on it, either individually or together with other projects, it should be estimated regarding its impacts on the site by taking into account its conservation objectives”*.

b) Specific measures in order to protect the environment.

- Proposals that finance enterprises (innovation - entrepreneurship - competitiveness) and that include (in addition to the mandatory rules of the environmental law) investment in "green infrastructure and technologies" (eg, use of geothermal energy etc), bioclimatic principles and/or promote the reduction and reuse of materials (according to the hierarchy of waste management), would be highly desirable to be primed during the project selection process.
- In the process of specifying and selecting clusters, it should be considered to include enterprises that manage products or waste that are produced throughout the value chain.

- The actions of tourism development or enhancement of natural resources within Natura 2000 areas should be consistent with the management plan areas. In cases, where the projects are listed in areas with Management Agency, its opinion is necessary. In any case, it should be documented that the increase of visiting the protected ecosystems for tourism or other purposes does not have impact on the conservation status.
- Appropriate measures should be taken for technical projects that are implemented within the coastal marine area and may cause either a water quality pollution or a disruption of benthic substrate. Such measures should prevent and reduce the potential pollution of waters and the sediment.

More specifically, the aforementioned mitigation measures should address all the environmental parameters that might be affected by the projects of the Programme, according to the assessments of chapter 7.

**Table 8-1 Proposed measures to mitigate environmental impacts**

1	Biodiversity	<ul style="list-style-type: none"> <li>• Utilization of EIA procedures to avoid damages to natural areas, NATURA 2000 and habitats</li> <li>• Integrate biodiversity protection criteria in the selection process of proposals for inclusion in the INTERREG Programme Greece-Bulgaria 2021-2027 (e.g planting native species, actions on the promotion of the environment, environmental awareness and education, information material on protected species)</li> <li>• Provide advice to stakeholders to improve their proposals in terms of biodiversity protection</li> <li>• Integrate ecodesign criteria, environmental management and sustainable natural resource management in the selection of proposals for inclusion in the INTERREG Programme Greece-Bulgaria 2021-2027 (e.g bioclimatic design, implementation of Environmental Management Systems, reuse of excavated material, installation of energy and water saving systems)</li> <li>• Provide advice to stakeholders in terms of achieving the above objectives</li> </ul>
2	Population-Human health	<ul style="list-style-type: none"> <li>• reduce dust emissions and dispersion during construction</li> <li>• promote projects that enhance human physical activities (sports, cycling, running, walking)</li> </ul>
3	Soil	<ul style="list-style-type: none"> <li>• Encourage the use of clean technologies, practices to reduce waste and avoid toxic waste disposal, oily substances or salts in the soil.</li> <li>• Promoting entrepreneurship in introducing innovation in solid waste management in developing R &amp; D and specialized services in the sector</li> <li>• Measures to protect soils from desertification</li> <li>• Reuse of excavation soils for backfilling</li> </ul>
4	Water	<ul style="list-style-type: none"> <li>• Encourage the use of clean technologies, practices to reduce wastewater and avoid waste disposal in the aquatic environment (lakes, rivers).</li> <li>• Encourage the introduction of technologies for reuse and saving water</li> <li>• Encouraging entrepreneurship in the sector of environmental management and protection of water resources</li> </ul>
5	Air, Climate and climate change	<ul style="list-style-type: none"> <li>• Encourage the use of clean technologies, replacement with cleaner fuels, installing pollution filters etc.</li> </ul>

		<ul style="list-style-type: none"> <li>• Encourage the use of RES</li> <li>• Encourage the use of public transport</li> <li>• Inclusion criteria for energy saving and reducing greenhouse gas production in the selection process of proposals for inclusion in the INTERREG Programme Greece- Bulgaria 2021-2027 (e.g RES, use or replacement of equipment with energy-saving devices, actions for raising awareness and education for the public and business on climate change)</li> <li>• Provide advice to stakeholders in terms of achieving the above objectives and the need to reduce traffic volumes in relation to the movement of work force, raw materials and products</li> </ul>
6	Infrastructure-Tangible Assets	<ul style="list-style-type: none"> <li>• Encourage the use of local population workers in construction phase</li> </ul>
7	Cultural Heritage	<ul style="list-style-type: none"> <li>• Avoid installation of disturbing activities within or crossing areas of cultural interest</li> <li>• Use features that provide actions for the development of the tourism sector for the promotion and protection of monuments and sites of cultural interest</li> <li>• Take measures so that the improved accessibility to sites and cultural events areas will not have a negative impact to the cultural environment</li> </ul>
8	Landscape	<ul style="list-style-type: none"> <li>• The INTERREG Programme Greece-Bulgaria 2021-2027, should introduce selection criteria of proposals for the establishment of enterprises in statutory or degraded areas, protection of rural and urban landscape and the development of green infrastructure (e.g installation of plants at industrial or business parks, regeneration or creating of green areas, use of clean technologies, use of energy and water-saving technologies, waste and wastewater management)</li> <li>• Advising stakeholders to protect the landscape from degradation</li> </ul>
9	Noise	<ul style="list-style-type: none"> <li>• Use of noise reduction techniques during construction and operation phases</li> </ul>
10	Sustainable development	<ul style="list-style-type: none"> <li>• Promotion of projects which combine development with environmental friendly features</li> </ul>

## 8.2 MONITORING

The Monitoring System includes all the relevant environmental indicators per environmental parameter (e.g. biodiversity, air quality and climate change, soil, water, landscape and culture, etc) and identifies the authorities that carry out the monitoring as well as the frequency of monitoring.

Data collection is suggested to be based on two sources: **(a)** primary data resulted from measuring environmental parameters and **(b)** assessment of environmental indicators.

The process of finding data through measuring is possible to involve the Regional Authorities (Regions), but also the State Authorities (e.g. Ministry of Environment), Local Authorities, scientific and professional bodies and utilities (e.g. landfills, wastewater treatment plants). Measuring environmental indicators is a complex process; either it is a regular or, even more, a continuous process.

The Regional Directorates should have a key role in regard with the data management and dissemination. In this context, the respective Departments must plan and act as a hub for the collection, analysis and

dissemination of information. In particular, the role of the Regional Departments should include the following:

- Data collection from measurements performed by the Regional Services, either on a permanent or a temporary basis.
- Primary data collection performed by regional utilities (e.g. landfills, wastewater treatment plants, Municipal Enterprises for Water Supply and Sewerage, Public Power Corporation, Management bodies of protected areas).
- Primary data collection performed by public administration (e.g. National Monitoring System for the surface water quality, etc.)
- Primary data collection performed by scientific and other bodies.
- Analysis and synthesis of data in order to draw conclusions on the environmental state within the Region.
- Data storage and development of time series in order to monitor environmental status over time.
- Data dissemination through appropriate reports, according to the current legislation or/and Regional decisions. These reports are intended to **(a)** meet the relevant requirements of legislation, **(b)** inform those that participate to the planning and monitoring process of the INTERREG Programme Greece-Bulgaria 2021 - 2027 implementation (decision makers) and **(c)** inform the public affected by the programme.

It is noted that, as mentioned before, the impact monitoring of INTERREG Programme Greece-Bulgaria 2021 - 2027 will be carried out, where possible, using data derived from:

- The existing network for monitoring environmental parameters of the Ministry of Environment of the two countries or other bodies. Some indicative monitoring networks are:
  - Air pollution quality,
  - Water quality (surface waters, ground waters, coastal bathing waters).
- Separate and independent studies for identifying the impact of the overall program or part of it.
- Reports provided by contractors, either primary or based on data included in the EIA of the projects funded by the INTERREG Programme Greece-Bulgaria 2021-2027.

The environmental indicators for each environmental parameter, the monitoring body and the monitoring frequency are provided in the next table. All indicators values should be measured or estimated **before the project** included in the Programme - **during construction** (if the project has a construction phase) - **during operation** (or implementation).

Table 8-2 Monitoring Indicators

No	ENVIRONMENTAL PARAMETER	ENVIRONMENTAL INDICATOR	MONITORING AUTHORITY	MONITORING FREQUENCY
01	Biodiversity - fauna- flora	<ul style="list-style-type: none"> <li>• satisfactory condition of habitats in the area of a project</li> <li>• satisfactory condition of important species population in the area of a project</li> <li>• Area covered by forests</li> </ul>	<ul style="list-style-type: none"> <li>• Management bodies of protected areas</li> <li>• Competent Directorates of Regions</li> </ul>	According to the Management Plan (if exists) Annually
02	Population – human health	<ul style="list-style-type: none"> <li>• Years of healthy life expectancy</li> <li>• Number of occupational accidents</li> <li>• Percentage of people living below the poverty line</li> </ul>	<ul style="list-style-type: none"> <li>• Competent Directorates of Regions</li> </ul>	Annually
03	Soils	<ul style="list-style-type: none"> <li>• Percentage of degraded land</li> <li>• Quantities of waste disposed in landfills</li> <li>• Development of per capita and total waste generation</li> <li>• recycling (paper, glass, BMW14, aluminium)</li> </ul>	<ul style="list-style-type: none"> <li>• Competent Directorates of Regions</li> <li>• Landfill Management Bodies</li> </ul>	Annually
04	Waters	<ul style="list-style-type: none"> <li>• Surface Water Quality (N, P, BOD5, COD, SS, TDS, Conductivity, Faecal Colliforms)</li> <li>• Groundwater quality (Nitrate, Phosphate, Conductivity, Heavy Metals)</li> <li>• Bathing waters Quality (Faecal Colliforms, transparency)</li> <li>• Percentage of water recycling or reuse</li> </ul>	<ul style="list-style-type: none"> <li>• Competent Directorates of Regions</li> <li>• WWTP Management Bodies</li> <li>• Ministry of Environment</li> </ul>	Sampling and measurements in accordance to the environmental terms of each WWTP. National System of Surface Water Quality Monitoring for Greece According to the Monitoring Programme of bathing water quality on beaches for Greece
05	Air Climatic factors	<ul style="list-style-type: none"> <li>• Days of exceedance of air quality limits (CO, SO<sub>x</sub>, NO<sub>x</sub>, PM<sub>10</sub>)</li> <li>• Emissions by Source</li> <li>• Greenhouse Gas Emissions</li> <li>• Development of energy demand</li> <li>• Percentage of RES (%)</li> <li>• Evolution of number of passenger vehicles</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Environment</li> <li>• Competent Directorates of Regions</li> </ul>	Annually
06	Cultural Heritage (including architectural and archaeological heritage)- Landscape	<ul style="list-style-type: none"> <li>• Number of preserved buildings restored</li> <li>• Number of visitors</li> <li>• Urban green per inhabitant</li> </ul>	<ul style="list-style-type: none"> <li>• Competent Directorates of Regions</li> </ul>	Annually

## 9 REGULATORY ACT

According to the JMD 107017 of Greek Legislation the issuance of a regulatory act for the environmental approval of the Programme is needed.

This act will contain all the measures and monitoring activities described in chapter 8.

## 10 DIFFICULTIES DURING THE CONDUCT OF SEA

During the preparation of the Strategic Environmental Assessment (SEA) of the INTERREG PROGRAMME 2021-2027 the following major difficulties were encountered by the authors of this report:

- the extremely tight time-schedule in relation to the required highly detailed, multi-level and in-depth analysis of strategic planning in a cross-border region and the different cultures, languages and development, environmental policies and legislation, etc.
- the different levels of digital convergence and e-government applications between the two countries which made difficult the direct access to information regarding the application of environmental policies and legislation.

However, the study focused on issues that were considered to have significant effects on the environment of the eligible cross border area and which were analyzed using the most appropriate methodologies and comparative tables. So, all difficulties were finally faced sufficiently and satisfactorily by the authors of this study and according to the Legislation.

## 11 BASIC STUDIES AND RESEARCHES

This chapter refers to the main studies and research that should be elaborated before the approval of the projects and actions described in the INTERREG Programme GREECE-BULGARIA 2021-2027. In this framework, the following studies are recognized not as a prerequisite for the application of the programme but as supportive to the general environmental protection framework and as environmental studies of high priority to set an environmental baseline inventory. Although for few projects of the Program (like the ones that include constructions like infrastructure projects) an Environmental Impact Assessment (EIA) study might be mandatory:

- Special Environmental Studies for all NATURA sites and other areas under national protection regime and the establishment of appropriate five-year management plans.
- Ecological Studies for projects at areas that are included in NATURA network and other protected areas.
- Environmental Impact Assessment studies for all infrastructure projects in the cross-border area of cooperation which may precede or follow the mild measures proposed by the Program.
- Selection and evaluation of environmental indicators to establish a baseline environmental database which would enable benchmarking and ex post evaluation of the program results in specific fields such as water management, conservation status of biodiversity, etc.
- geotechnical studies and surveys,
- surveys mapping the atmospheric and the meteorological environment,
- noise level studies
- systematic recording of protected species of flora and fauna habitats (ecological baseline studies) especially if the region of study is characterized as of high environmental interesting (sites included in the Lists of NATURA 2000, CORINE, Convention Ramsar, SPA, National Forest, etc.).

## 12 CONSULTATION OUTCOMES

This chapter will be analyzed after the public and services consultation phase.

## 13 ANNEXES

### 13.1 BIBLIOGRAPHY

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## 13.2 MAPS

MAP NUMBER	NAME	SCALE
1	REGIONS COVERED BY THE PROGRAMME	1:750.000
2	CORINE LAND COVER	1:750.000
3	PROTECTED AREAS	1:750.000



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