Managing Authority:

Regione Puglia

Strategic Environmental Assessment of Italy – Albania - Montenegro Cross-Border Cooperation Programme

Environmental report

t33 srl - www.t33.it
via XXV Aprile, 28/b , 60125 Ancona (Italy)
Tel. - fax +39 071 898093, info@t33.it

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

AL: Albania

ASCI: Areas of Special Conservation Interest

BOD5: Biological Oxygen Demand

CBC: Cross Border Cooperation

GHG: Greenhouse gasses

EA: Environmental Authority

EEA: European Environmental Agency

EC: European Commission

EU: European Union (28 countries)

ERDF: European Regional Development Fund

IPA: Instrument for Pre-Accession Assistance

IP: Investment Priority

IT: Italy

IUCN: International Union for the Conservation of Nature

JTS: Joint Technical Secretary

Ktoe: Thousand tonnes oil equivalent

LUCF: Land Use Change and Forestry

MA: Managing Authority

ME: Montenegro

MS: Member State(s)

PA: Priority Axis

SAC: Special Areas of Conservation

SEA: Strategic Environmental Assessment

SDI: Sensitivity to Desertification Index

SME: Small and Medium Enterprise

SO: Specific Objective

SPA: Special Protection Areas

TF: Task Force

TO: Thematic Objective

UNCCD: United Nations Convention to Combat Desertification

UNECE: United Nations Economic Commission for Europe

UNFCCC: United Nations Framework Convention on Climate Change

WFD: Water Framework Directive

INTRODUCTION

This draft Environmental report provides an environmental evaluation of the CBC Programme Italy-Albania-Montenegro 2014-2020, in compliance with Directive 42/2001/EC[1] (the 'SEA Directive').

As stated in Article 1 of the Directive *"The objective of this Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations in the preparation and adoption of plans and programmes with a view to promoting sustainable development [...]"*

The Italy-Albania-Montenegro Programme is a cross-border cooperation programme that promotes cooperation between regional and local actors from territories in three different States, namely Italy (EU Member State), Albania and Montenegro (Candidate Member States).

The aim of cross-border cooperation is to *"reinforce the effectiveness of cohesion policy by encouraging exchange of experience between regions on thematic objectives and urban development, including urban-rural linkages, to improve implementation of territorial cooperation programmes and actions as well as promoting analysis of development trends in the area of territorial cohesion through studies, data collection and other measures"* (European territorial cooperation goal[2]).

The cooperation Programme contributes to the European Union (EU) Cohesion Policy for the achievement of EU 2020 Strategy goals.

The Programme will invest in the activities listed in Article 5 of the new Regulation 1301/2013[3], focusing on innovation, competitiveness and business development in Small and Medium Enterprises (SMEs), climate change adaptation and mitigation, promotion of renewable energy, biodiversity and environmental infrastructure, sustainable transport and social inclusion. The programme is structured around four operational priority axes.

[1] Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (OJ L 197, 21.7.2001, p. 30).
[2] See recital 7 of Regulation (EU) No 1299/2013 of the European Parliament and of the Council of 17 December 2013 on specific provisions for the support from the European Regional Development Fund to the European territorial cooperation goal (OJ L 347, 20.12.2013, p. 239).
[3] Regulation (EU) No 1301/2013 of the European Parliament and of the Council of 17 December 2013 on the European Regional Development Fund and on specific provisions concerning the Investment for growth and jobs goal and repealing Regulation (EC) No 1080/2006 (OJ L 347, 20.12.2013, p. 281).

PART I- FRAMEWORK AND PROGRAMME BACKGROUND

1 GENERAL PRESENTATION AND OBJECTIVE OF THE SEA

1.1 JUSTIFICATION AND OBJECTIVE OF THE STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

In compliance with the SEA legislative dispositions and explanatory package[4] and with the requirements from the Terms of Reference, the likely environmental effects of the Italy-Albania-Montenegro Cross-Border Cooperation Programme 2014-2020 will be assessed through adequate measures.

The SEA, in parallel with Italy-Albania-Montenegro (IT-AL-ME) Programming and Ex-ante evaluation, will be carried out in four steps : (1) Scoping or preliminary activities, (2) Environmental reporting (included a context analysis, an environmental assessment of key effects and impacts, the proposal of mitigation actions and the definition of an monitoring system), (3) a public consultation and (4) a decision making. The SEA steps and the stakeholders involved are presented in Figure 1, and described in the following subsections.

[4] Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment. OJ L 197, 21.7.2001, p. 30

Figure 1 Steps for the application of the SEA procedure to the CBC Programme Italy-Albania-Montenegro

Step 1: "Scoping"

The preliminary "scoping phase" is principally aimed to define the scope and the level of detail of the information to consider for the evaluation activities developments as setting the perimeter of the evaluation. In particular, the following point will be addressed:

a) Areas covered by the Programme	✓ Addressed in section 2.
b) Environmental issues, including relevant environmental objectives, relevant for the SEA?	✓ Addressed in sections 3. and 4.
c) Periods of time to be covered	✓ 2014-2020
d) Depth of assessment required	✓ Covered by sections 3, 4 and 5.
e) Data and information needed (and available)	✓ Covered by section 7.
f) Methods come into consideration	✓ Addressed in section 5.
g) Alternatives and options to be considered	✓ Addressed in section 5.
h) Entities and experts to be involved in review of the Environmental report	✓ Addressed by annex 1 and 2.

These questions were answered in the Scoping Report. This report included a brief presentation of the Programme, a proposal of environmental issues, indicators and objectives, a description of the methodology, a presentation of the public consultation process and details on the documents and information sources used.

This preliminary Scoping activity ended after a consultation with the authorities responsible forenvironmental issues (Environmental Authorities, EAs) in September and October 2014. Each TF member has consulted the EAs for the territory of its competence. Suggestions expressed during preliminary consultation are summarized in the following table.

TF Member	Suggestion
Apulia Region	Insert the "Piano stralcio per l'assetto idrogeologico dell'Autorità di Bacino della Apulia" in the external coherence analysis
Molise Region	No suggestion
Montenegro	Take into account national strategic

	documents – i.e. plans and programmes of the sector policies – and other documents relevant for the Programme
Albania	No suggestion

According to these suggestions, documents at national level relevant for the CBC Programme have been included in the coherence analysis.
The "Piano Stralcio per l'Assetto Idrogeologico" of Apulia Region, as well as the other regional hydrogeological plans, becomes extremely relevant during the project preparation phases. Therefore the advice in the orientation measure to consider the coherence with these plans of projects predisposal under OS 3.1.

Step 2: Environmental Report

The Environmental Report is integral to the Programme and its entire elaboration and approval process. According to Article 5(1) of the Directive 42/2001/EC, the Environmental Report shall identify, describe and assess 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*". The information to be included in the Environmental Report is specified in Annex I of the Directive. The final report version entails a non-technical summary and the main results of the activities.
The Environmental Report also details the results of the pre-consultation phase with Environmental Authorities and highlights how the contributions have been taken into account.

Step 3: Consultation

Public consultation is an important step in the SEA procedure and is the next step to be carried out.
Its aim is twofold: to inform the public about the likely environmental effects of the Programme and to collect any additional methodological elements and suggestions for changes to the Programme from a wider audience, to achieve high sustainability.
Public consultation takes place at the end of the drafting process and under detailed arrangements determined by each Member State.

Step 4: Decision making

Article 8 of the SEA Directive states that "*the opinions expressed [...] shall be taken into account during the preparation of the [...] programme and before its adoption or submission to the legislative procedure*".
At the end of the consultation, SEA experts collected all views and recommendations expressed by the public and will add any improvements or modifications to the Environmental Report and the CP final draft. Two weeks after the end of the consultation, taking national and regional

arrangements into account, the SEA experts offered the Managing Authority (MA)/Joint Technical Secretary (JTS) recommendations to be included and discussed these during a meeting with the CP drafters.

1.2 QUALITY CONTROL

The SEA Directive states in article 12(2) "*Member States shall ensure that environmental reports are of a sufficient quality to meet the requirements of this Directive and shall communicate to the Commission any measures they take concerning the quality of these reports*".

Quality control is integral to all activities of the SEA team in preparing the Italy-Albania-Montenegro Cooperation Programme 2014-2020. The objectives are to ensure the transparency of the whole evaluation process, to provide stakeholders with information about the activities and to give them the opportunity of amending or augmenting the contents and information provided in the environmental reports and documents published by the evaluators.

Quality control includes:

- Involving the Environmental Authorities (EAs) in defining the assessment scope with a consultation based on a Scoping Report prepared by the team of experts. The results of the consultation, including suggestions and comments from EAs, were taken into consideration in this report;
- A permanent exchange of information between the SEA team, the JTS, the ex-ante evaluators and the CP drafters;
- The preparation of an intermediate document by the SEA experts, with the first results on the assessment.

2 THE CBC ITALY-ALBANIA-MONTENEGRO PROGRAMME

2.1 COOPERATION AREA

The Italy-Albania-Montenegro Programme ('the Programme') is a cross border cooperation programme between Italy, Albania and Montenegro, co-financed by the European Regional Development Fund (ERDF) and the Instrument for Pre-Accession Assistance (IPA). The Programme contributes to the European Cohesion Policy, which pursues harmonious development across the Union by strengthening economic, social and territorial cohesion in order to stimulate growth.

The Cooperation Programme extends on both sides of the Adriatic Sea and includes the following NUTS 3 regions:

- the Italian Provinces of Foggia, Bari, Brindisi, Lecce, Barletta-Andria-Trani (BAT) and Taranto (Apulia Region) as well as Isernia and Campobasso (Molise Region);
- Albania (whole country)
- Montenegro (whole country).

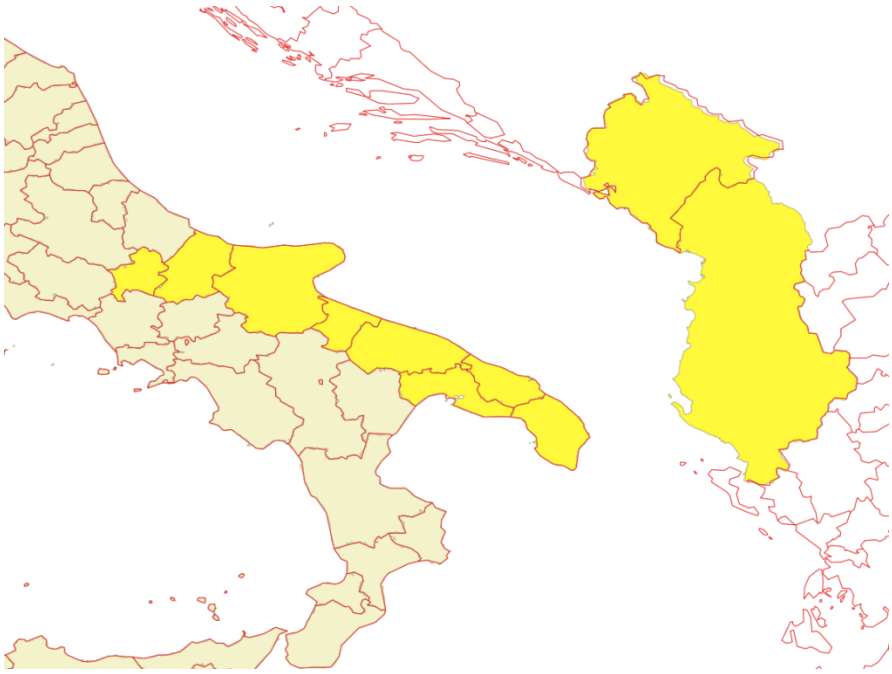


Figure 2 Energy efficiency index measured as a three-year moving average (base 100=2000)

2.2 PROGRAMME OBJECTIVES AND INVESTMENT PRIORITIES

The Programme focuses on the exchange of knowledge and experiences, to develop and implement pilot actions, to test the feasibility of new policies, products and services and to support investments.

The strategy of the programme is primary focused on the following thematic priorities set by IPA regulations[5]: enhancing competitiveness, encouraging sustainable tourism, promoting sustainable transports and improving public infrastructures; protecting the environment. The priority axes selected in this preliminary phase will concern the following topics:

- Entrepreneurships and innovation;
- Valorised Heritage;
- Environment protection and risk management;
- Integrating sustainable networks.

1. Among these issues, four Priority Axes have been selected: Strengthening the cross-border cooperation and competitiveness of SMEs
2. Smart management of natural and cultural heritage for the exploitation of cross border sustainable tourism and territorial attractiveness;
3. Environment protection, risk management and low carbon strategy;
4. Promoting sustainable transport and improving public infrastructures by, inter alia, reducing isolation through improved access to transport, information and communication networks and services and investing in cross-border water, waste and energy systems and facilities.

In each Priority Axis (PA), one or more specific objectives (SO) with related actions will be selected. A first draft of the possible SO is summarised in Table 1.

[5] EU Regulation n.231/2014, Annex III "Thematic priorities for assistance for territorial cooperation".

Table 1: Programme's axis and Specific Objectives

IPA Thematic priority	Priority axis	Specific Objectives
Enhancing competitiveness, the business environment and the development of small and medium-sized enterprises, trade and investment through, inter alia, promotion and support to entrepreneurship, in particular small and medium-sized enterprises, and development of local cross-border markets and internationalization	1. Strengthening the cross-border cooperation and competitiveness of SMEs	1.1 Enhance the framework conditions for the development of SME's cross-border market.
Encouraging sustainable tourism and cultural and natural heritage	2. Smart management of natural and cultural heritage for the exploitation of cross border sustainable tourism and territorial attractiveness	2.1 Boost attractiveness of natural and cultural assets to improve a smart and sustainable economic development
		2.2 Increase the cooperation of the key actors of the area for the delivery of innovative cultural and creative products
Protecting the environment and promoting climate change adaptation and mitigation, risk prevention and management through, inter alia: joint actions for environmental protection; promoting sustainable use of natural resources, resource efficiency, renewable energy sources and the shift towards a safe and sustainable low-carbon economy; promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems and emergency preparedness	3. Environment protection, risk management and low carbon strategy	3.1 Increase cross-border cooperation strategies on water landscapes
		3.2 Promoting innovative practices and tools to reduce carbon emission, to improve energy efficiency in public sector
Increasing cross border accessibility, promoting sustainable transport service and facilities and improving public infrastructures	4. Promoting sustainable transport and improving public infrastructures by, inter alia, reducing isolation through improved access to transport, information and communication networks and services and investing in cross-border water, waste and energy systems and facilities	4.1 Increase coordination among relevant stakeholders to promote sustainable cross border connections in the cooperation area

3 CONTEXT ANALYSIS, ENVIRONMENTAL INDICATORS AND CHARACTERISTICS OF THE AREA TO BE SIGNIFICANTLY AFFECTED.

The SEA directive requires an analysis of the status of the environment in absence of the Programme: this analysis is the basis for the further evaluation of environmental effects. In this chapter, a brief presentation of the main environmental issues related to the CBC Programme is exposed and possible environmental criticalities are pointed out. The status indicators used here to describe the context, will be part of the SEA monitoring system.

3.1 CLIMATE CHANGE AND ASSOCIATED RISKS

The main human-caused driving force of climate change is GHG emissions.[6] Among the primary consequences are the increase in average of temperature and sea level, the decrease of the average precipitation level and the increasing frequency of extreme weather events such as heat waves, storms and floods. In addition, climate changes are responsible of other potential problems as the increases in pests and diseases due to changes in climate conditions.

GHG emission

Albania does not have any obligation about GHG emission, but it has adopted a target of reduction of 38%. According to Albania's Second National Communication for UNFCCC, in 2000 the total amount of GHG emission in Albania was 7,620 Gg, with an average of 2.4 tonnes CO2-eq per capita. These values are lower than the European average, and this is due to the relatively low consumption of energy and to the high percentage of energy generated by hydropower plants (90%). The analysis by economic sectors shows that the energy sector accounts for the largest share of these emissions, followed by agriculture (27%), and Land Use Change and Forestry (LUCF, 22%). A general trend from 1990 to 2000 is not apparent.

Montenegro does not have a national greenhouse gas emission limitation or reduction targets, but it is currently implementing this policy as part of the accession process to the European Union as well as in the context of the global negotiation process on a future climate regime. The total equivalent greenhouse gas emissions assessed in the First National Communication to the UNFCCC - not including LUCF, is 5,070Gt of CO2eq in 1993, and 5,320 in 2003. The analysis by economic sectors, for the year 2003 shows that the main contributor is the energy sector (responsible for half the total emission, coming mainly from aluminium plants) followed by

[6] See the Fifth IPPC report, which confirms the global trends and underline the human responsibility to global warming, available on the International Plant Protection Convention's website at www.ipcc.ch.

industrial processes (35%), agriculture (12%) and waste (2%). The comparison with 1993 data shows an increase no greater than 5%.

Italy, for the year 2012 had a total GHG emission (considering also those becoming from land use, and LUCF) of 441,527 Gg of CO2 eq, with a reduction of about 14% in respect to year 1990. According to the data of the European Environment Agency, the sector that most contributes to the emission is the energy one (use and supply, excluding transport) that alone covers 59% of total emissions. Transports are responsible for 23% of GHG emissions.

Considering CO2 emissions only from the burning of fossil fuels and cement manufacture (see Figure 3) a negative trend is not evident.

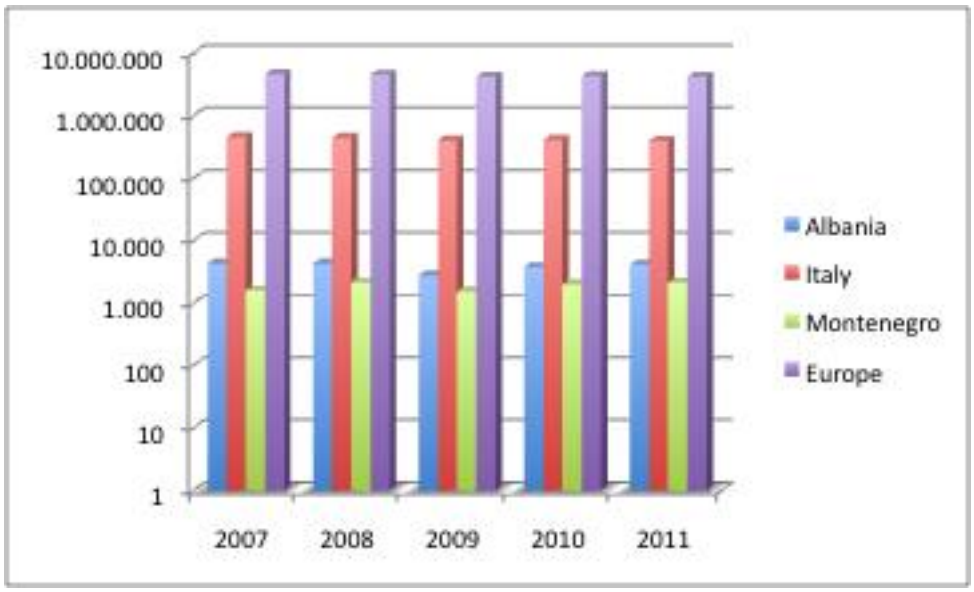


Figure 3 – CO2 emissions from human activity (in Million Metric Tons, logarithmic scale for visualisation purpose) Source: T33 elaboration on data from the US Department of Energy's Carbon Dioxide Information Analysis Center (CDIAC) for the UN.

Coastal erosion

Coastal erosion is a threat that is increasing in the last years, both for climate change causes (especially sea level rise) and human pressure.

The Albanian coastline extends for 427 km, composed for the 64% by sedimentary beaches; 154 km are almost completely erosional. The reduction in sedimentary input from river because of human intervention on river system, e.g. dam construction, is one of the main causes of erosion. Some parts of the coast erode at rates of 0.3-20 m/year, even up to 30 m/year at one spot[7].

Montenegro has a 288 km long coastline, made up for 25% by artificial and natural beaches. Recently, erosional changes have been noticed on several beaches. The main cause of this

[7] Pranzini, Enzo, and Allan Thomas Williams, eds. *Coastal erosion and protection in Europe*. Routledge, 2013.

change lies in the rapid hinterland urbanisation, building of settlements and infrastructures immediately adjacent to the coast, all activities that cause beach width reduction, with decrease of the area for wave energy dissipation[8].

In Italy about 42% of the beaches are already under erosion. This problem is more stressed in the Adriatic coastline, because of its predominant composition of beaches and low elevation coast (see Figure 4). According to a survey carried out in 2008[9], most pocket beaches longer than 300 m are eroding in Italy. Principal factors inducing beach erosion are dam construction on rivers and land subsidence of river deltas caused by water extraction for agriculture and industry, and gas extraction.

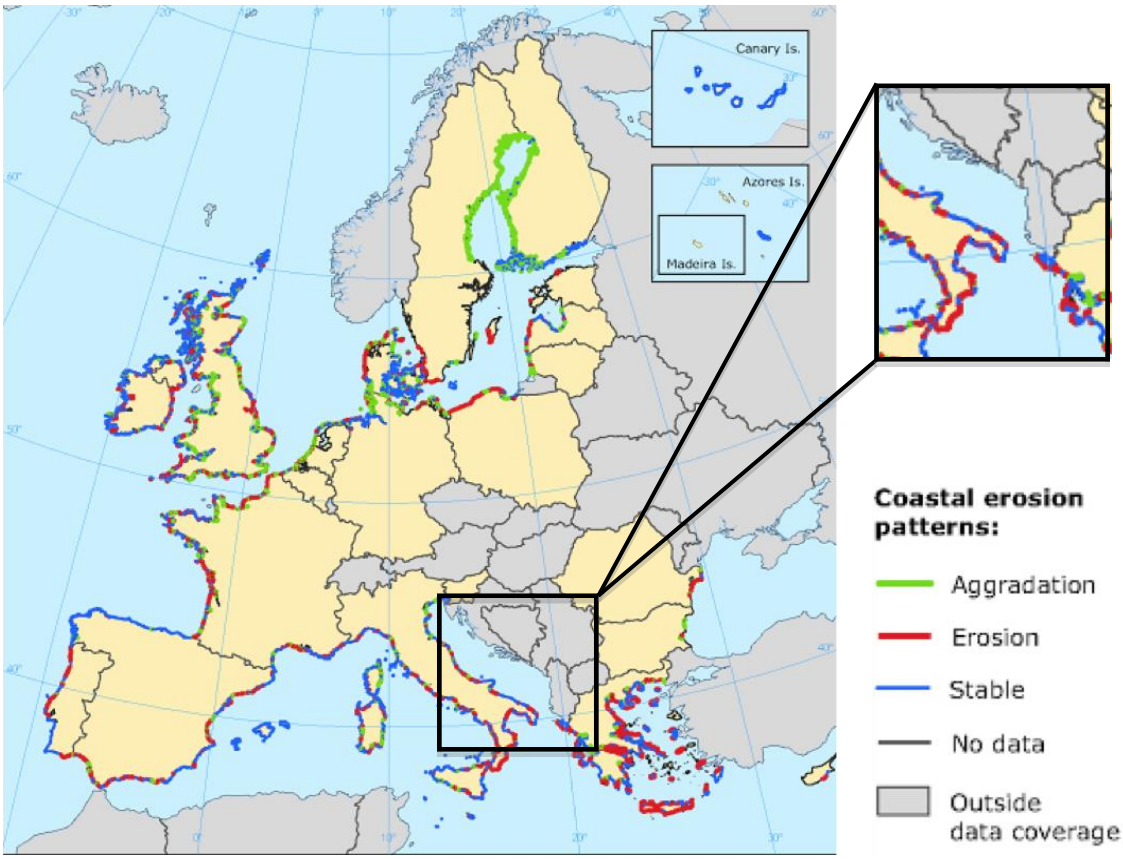


Figure 4 – Pattern of coastal erosion (Source: European environmental Agency; data for Albania and Montenegro are not still available)

[8] Pikelj, Kristina, and Mladen Juracic. "Eastern Adriatic Coast (EAC): geomorphology and coastal vulnerability of a karstic coast." *Journal of Coastal Research* 29.4 (2013): 944-957

[9] Pranzini, Enzo, and Allan Thomas Williams, eds. *Coastal erosion and protection in Europe*. Routledge, 2013

Flood risks

Change in the magnitude and frequency of floods at regional scale can be associated to climate change as well as to in land use and engineering. In recent decades, the number of major flood events and associated economic loss has risen in Europe.

In Italy from 1991 to 2001 about 12,000 landslides and more than 1,000 floods have occurred. In addition to major events, many smaller flooding events damaged agricultural and urban areas, causing significant damages but no human victims[10].

In Albania river flood risk is expected to increase with the period of greatest risk shifting from spring to winter considering the expected change in seasonal snowfall pattern[11].

In Montenegro flood waves are expected to become more frequent and stronger due to more intense rainfall and a change in the type of precipitation[12] .

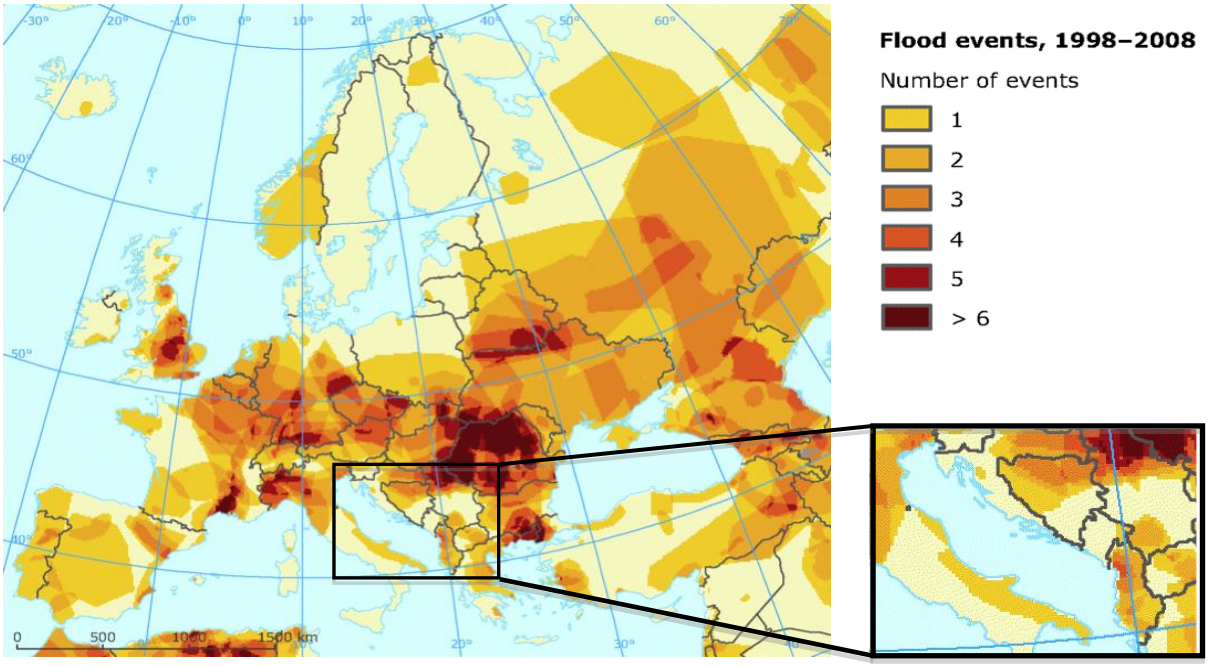


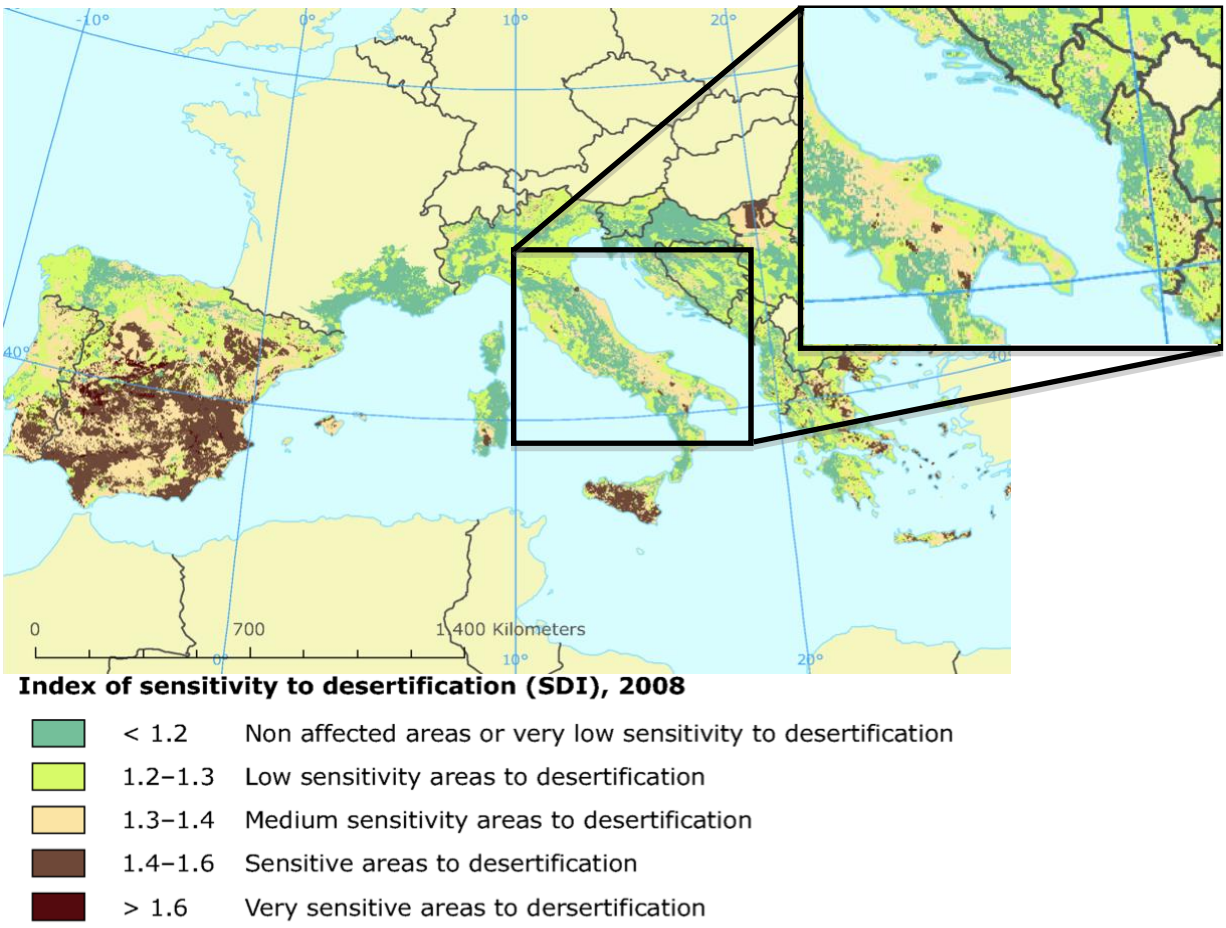
Figure 5 – Number of flood events in Europe from 1998 to 2008 (Source: European environmental Agency)

[10] Ministry for the Environment, Land and Sea of Italy, 2007, Fourth National Communication UNFCCC
[11] Diku, A., 2011. The impact of climate change on food production/selected crop yields in Albania
[12] initial national communication on climate change of Montenegro to the UNFCCC).

Risk of desertification

Increasing risk of desertification is one of the main consequences of climate change in the Mediterranean region. Desertification has been neatly defined in the UNCCD as "*land degradation in arid, semi-arid and dry sub-humid regions resulting from various factors, including climatic variations and human activities*". The "sensitivity to desertification index (SDI), based on soil quality, climate and vegetation parameters and developed inside the DISMED project (Desertification Information System for the Mediterranean), shows a low to medium sensitivity in the CBC area. The most vulnerable area results the central and southern region of the Italian side.

Figure 6 – Sensitivity to desertification (source: DISMED Project)



Situation and trend of climate change and associated risks for the CBC area

Emission of GHG in the CBC area shows lower values with respect to the European level. All administrations involved in the Programme are carrying out measure and strategy for additional reduction in strategic sector, so that an incremental trend is not apparent.

Coastal erosion represents a problem for all the CBC coastal area and it has increased in the last years, both for climate change causes (especially sea level rise) and human pressure.

Flood events are frequent in all countries involved in the Programme but less than the European average; their number increased in last years in consequences of climate changes.

Concerning the risk of desertification, the CBC area shows a low to medium sensitivity. As previous indicators, an increasing trend is observed for this risk, linked to ongoing climate changes.

Table 2: Macro indicators for climate change

Indicator	State	Trends
GHG emission	☺	⇨
Coastal erosion	☹	↗
Flood risks	😐	↗
Risk of desertification	😐	↗

3.2 INLAND BIODIVERSITY AND ECOSYSTEM

Biodiversity is the richness of life and the diversity of its forms. Biodiversity also provides ecosystem services which are, following the definition of the Millennium Ecosystem Assessment, "the multiple benefits supplied by ecosystems to humankind". These include the production of food and water, the control of climate and disease as well as spiritual and recreational benefits.

Nationally designated protected areas

According to the International Union for the Conservation of Nature (IUCN) definition, a protected area is a "defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature".

Albania recently implemented the protection of natural system, expanded the extension of its network of protected areas, from the 6% in 2005 to 13% in 2009 of the total land area of the country. Natural and touristic protected areas are considered as protected terrestrial and aquatic areas due to their biodiversity and the natural and cultural assets they offer. These areas are protected by the State and there are about 384 of them. They are divided into six categories according to their importance: 4 are strictly protected areas including, the Lagoon (Lushnjė), Gashi River (Fier), Rrajca (shines) and Kardhiq (Gjirokastra), 11 are national parks; 300 are natural monuments; 26 are managed areas, protected landscapes and 4 are protected terrestrial or marine landscapes and 4 are protected resources areas. The most important ones are presented in **Errore. L'origine riferimento non è stata trovata.**.

Montenegro has an overall network of protected areas covering 9% of the territory mainly composed by five national parks: Durmitor, Skadar Lake, Lovcen, Biogradska gora and

Prokletije. The remaining part includes over forty protected areas within the following categories: monument of nature; region of special natural features, and (general and special) reserves.[13] The procedure for proclamation of protected natural resources has been defined by the Law on Nature Protection. National Parks are established by a special Act promulgated by the Parliament of Montenegro. Strict Nature Reserve, Wilderness Area (Special Nature Reserve), Strictly Protected, and Protected Species and Habitats are proclaimed by the Government of Montenegro. The national network of protected areas currently covers 109,257 hectares or 8% of the territory of Montenegro.[14]

In the two Italian regions involved in the Programme, Apulia and Molise, there are numerous natural Protected Areas among which the most important ones are National Reserves, National Parks and Natura 2000 Sites.

The National Reserves and the National Parks in the CBC area are presented in the table below:

Table 3: Natural Reserves and National Parks in the CBC area

National Natural Reserves		
Country/Region	***Protected Area***	***Surface (ha)***
APULIA	Falascone	48
	Foresta Umbra	399
	Il Monte	129.73
	Ischitella e Carpino	299
	Isola di Varano	145
	Lago di Lesina (parte orientale)	930
	Marinella Stornara	45
	Masseria Combattenti	82
	Monte Barone	124
	Murge Orientali	733
	Oasi WWF Le Cesine	380
	Palude di Frattarolo	257
	Saline di Margherita di Savoia	3,871
	San Cataldo	28
	Sfilzi	56
	Stornara	1,456

[13] Source: SEE HNV farming network
[14] Porej, D. & Stanišić, N., 2009. Results of the initial evaluation of Protected Area Management in Montenegro using RAPPAM Methodology

	Torre Guaceto	1,000
MOLISE	Collemeluccio	347
	Montedimezzo	291
	Pesche	552
ALBANIA	Laguna e Karavastase	1,250
	Lugina e lumit te Gashit	3,000
	Rrajca	4,700
	Kardhiqi	1,800
MONTENEGRO	Tara River Basin	182.899
	Kotor – Rasin Bay	15,000
National Parks		
APULIA	Alta Murgia	68,077
	Gargano	121,118
MOLISE	Abruzzo Lazio Molise	49,680
ALBANIA	Dajti	3,300
	Thethi	2,630
	Lura	1,280
	Pishat e Divjakes	1,250
	Bredhi i Drenoves	1,380
	Lugina e Valbones	8,000
	Bredhi i Hotoves	12,000
	Qafe Shtama	2,000
	Zall Gjoçaj	140
	Prespa	27.75
	Butrinti	29
MONTENEGRO	Lovcen	6,220
	Biogradska Gora	5,650
	Durmitor	39,000
	Lake of Skader	40,000
	Prokletije	16,630

Natura 2000 areas

An important tool for biodiversity protection is the Natura 2000 network, based on the Habitats Directive[15] and Birds Directive[16] to protect habitat and species of peculiar importance. The aim of the network is to assure the long-term survival of Europe's most valuable and threatened

[15] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).
[16] Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (OJ L 103, 25.04.1979)

species and habitats. Natura 2000 is based on management and assessment tools and not on strict reserves. It works for the sustainable management (both ecological and economical) of ecosystems. The Natura 2000 network includes Special Areas of Conservation (SAC) designated by Member States under the Habitats Directive, and incorporates Special Protection Areas (SPAs) which are designated under the 1979 Birds Directive. Natura 2000 it is not based on prohibitions but drives the use of social and economic activity as instruments for conservation. This allows conservation goals to be integrated into ordinary management and improves ecological connectivity between separated protected.

In Italy, the two regions involved in the Programme host 146 Natura 2000 sites, covering 509.219 ha. The site typology in each region is presented in the table below:

Table 4: Natura 2000 Network in Italian Region involved in the Programme (Source: Italian Environmental Ministry)

REGION	SPA			SAC			SAC/SPA			Natura 2000		
	n. sites	sup. (ha)	%	n. sites	sup. (ha)	%	n. sites	sup. (ha)	%	n. sites	sup. (ha)	%
Apulia	4	288114	26,7	53	236117	21,9	1	19886	1,8	58	390495	36,2
Molise	3	33875	7,6	76	65607	14,8	9	32143	7,3	88	118724	26,8
TOT *	**7**	**321989**		**129**	**301724**		**10**	**52029**		**146**	**509219**	
TOT IT	**277**	**3021599**	**10,0**	**1942**	**3424974**	**11,5**	**330**	**1372044**	**4,6**	**2576**	**6379090**	**21,2**

* Total for CBC area in Italy

Albania, as non-EU countries, fulfils some of the requirements of the Habitat and Birds Directives through the Emerald Protected Areas Network that designs Areas of Special Conservation Interest (ASCI). In Albania 25 potential sites have been designed under the Emerald network, for 5,222.430 ha, corresponding to 18% of the national territory.

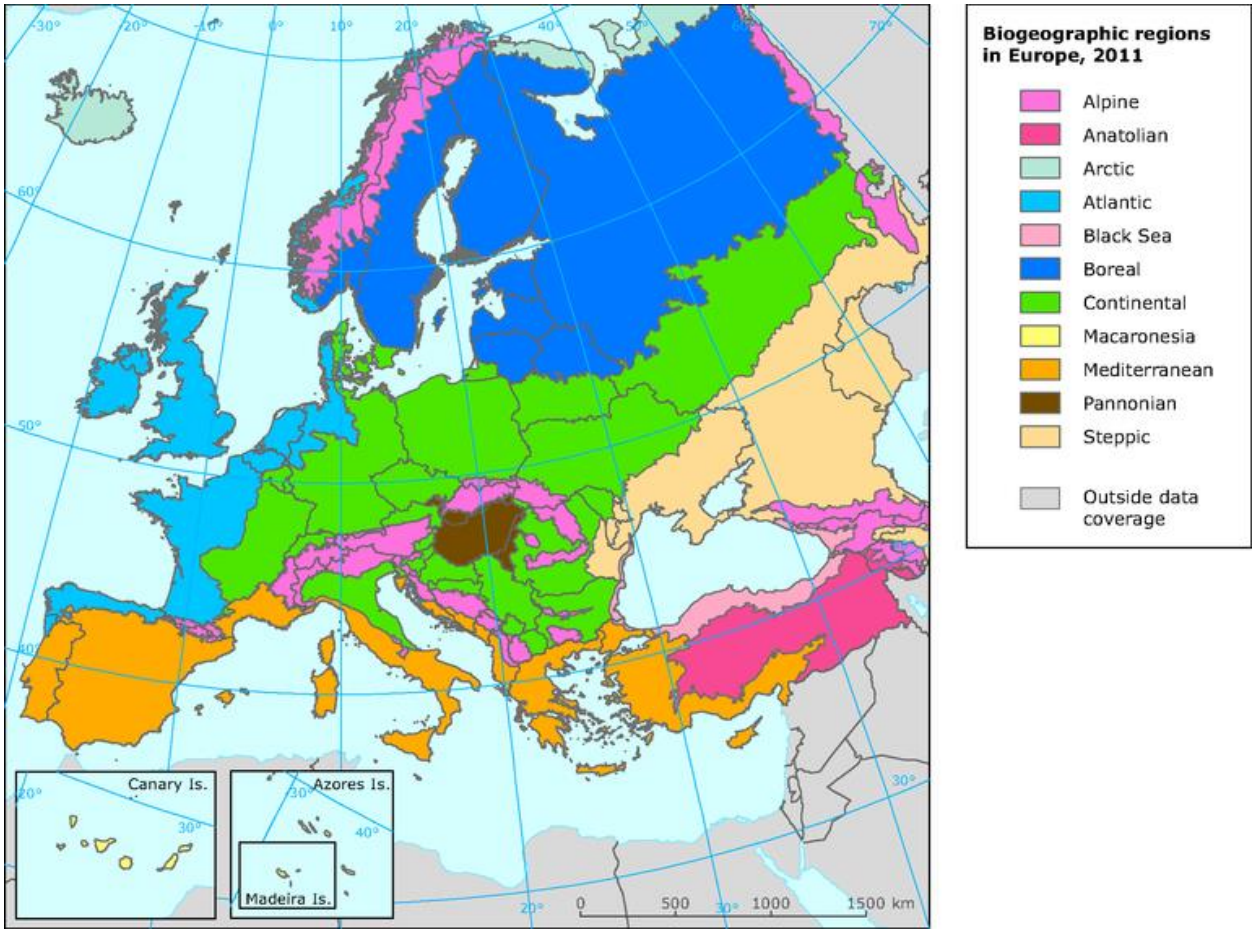
In Montenegro the establishment of the Natura 2000 network is required by the Law on Nature Protection n. 51/08 of 22.08.2008. The candidate Emerald sites officially nominated under the Bern Convention by Montenegro are 32, covering a surface of 200,400 ha, i.e. about the 17% of national territory.[17]

Natural and semi-natural ecosystem

According to the Habitat Directive, 9 Biogeographic regions have been defined in EU countries, (see Figure 7), each with its own characteristic regarding blend of vegetation, climate and geology. The definition has been extended to the territory and for the EMERALD Network set up under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention). Sites in the CBC area belong to the Mediterranean region.

[17] EEA Report 5/2012 "Protected areas in Europe"

Figure 7 – Biogeographic regions for the Habitats Directive (92/43/EEC) and for the EMERALD Network (Source: European environmental Agency)



The Mediterranean region is composed for around one third by agricultural land, including grasslands. Areas with agro-forestry were formerly much more widespread, but they still play a locally important role. Wine, olive and fruit growing are common. Vegetables production is increasing, largely in green-houses around big urban areas. Forests and other wooded land, scrub and heathlands with dwarf shrubs together dominate more than half of the region. Abandonment of agricultural practice and fires lead spontaneously to scrub formations and from that to secondary forests, but afforestation is also increasing (Condè et al., 2002).

In Albania 24% is arable land or covered by permanent crops. According to the European Environmental Agency the annual land cover change in the period 2000 – 2006 is 0.18% of the total area. There is on the other hand a loss of agricultural land and regarding forests, there are gains from agriculture but losses to urbanisation[18].

[18] *The European Environment – State and Outlook 2010, Land Use*

In Montenegro, the majority of the territory is covered by forest (42%) and cultivated land (37%, mostly pasture and meadows). The land-cover change during the period 2000 – 2006 has been of 0.04% with an extension of construction sites and residential areas, a loss of pastures and mosaics to artificial surfaces. Regarding forests there has been a transition with loss of natural areas to economic sites and also due to different fires[19].

The Italian CBC area is mainly covered by agricultural land (75%) and for more than 20% by forest and semi-natural areas. In Italy, agricultural land shows a negative trend and a loss of about 3% in 2011.

Species protection

One of the most important fact-finding tools about species conservation is the IUCN European Red List.[20] The CBC area is enjoying an above EU average species richness (example Figure 8 for mammals). The area also hosts the greatest concentration of threatened species, for amphibian (see Figure 9), and reptiles (in the Albanian and Montenegrin side).

Figure 8 – Species richness for mammals (Source: IUCN's Red List)

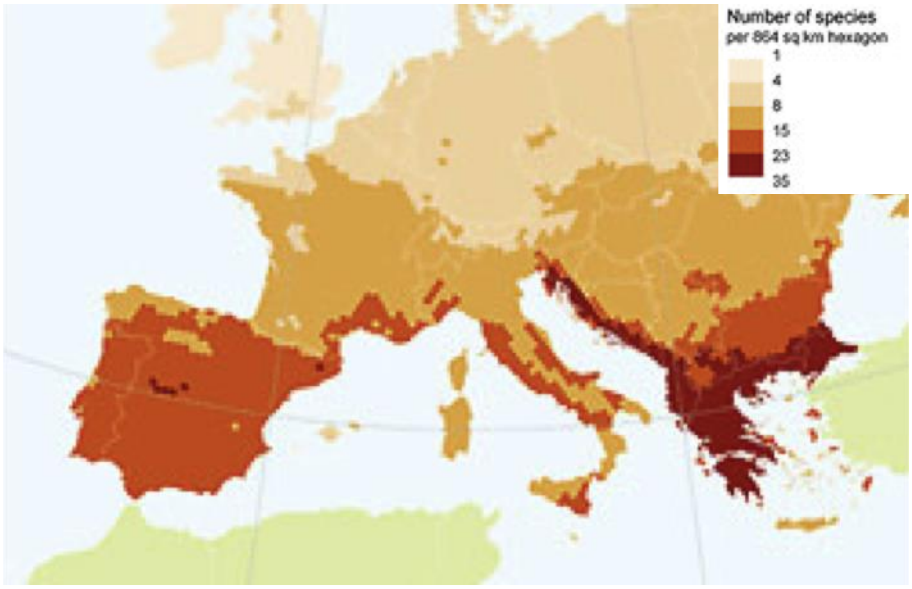


Figure 9 – Distribution of threatened amphibians (Source: IUCN's Red List)

[19] As above
[20] http://ec.europa.eu/environment/nature/conservation/species/redlist/index_en.htm

Situation and trend of inland biodiversity and ecosystem for the CBC area

The CBC are hosts a large number of natural protected areas, covering about 10% of the territory. The Natura 2000 network is well defined in Apulia and Molise and has been introduced also in Albania and Montenegro. Natural and semi-natural ecosystems are dominant in the CBC area, with a prevalence of agricultural system.

The CBC area is enjoying an above EU average species richness but it hosts also the greatest concentration of threatened species, for amphibian and reptiles

Table 5: Macro indicators for biodiversity and ecosystem

Indicator	State	Trends
Nationally designated protected areas	☺	⇨
Natura 2000 network	☺	↗
Natural and semi natural ecosystem	☺	?
Species conservation	😐	?

3.3 MARINE ECOSYSTEM AND NATURAL RESOURCES

To address marine issues and improve the quality of marine and coastal ecosystems, the Commission has provided a clear framework of intervention in the EU marine areas, the *Marine*

Strategy Framework Directive (Directive 2008/56/EC)[21] with the objective of preserving the natural resources upon which human activities depend. The Commission also underlined the opportunity offered by the *Blue economy strategy* (*Blue growth* COM (2012) 494 final)[22] and the potential for the sustainable development of marine activities.

The Italy-Albania-Montenegro CBC area is characterised by long coast lines: hundreds of kilometres of beaches, cliffs, estuaries and human infrastructure along the coasts of the Adriatic Sea.

Marine protected areas

Along the Adriatic coast on the Italian side, there are three marine protected areas, all belonging to Apulia Region: the Marine Natural Reserve of Tremiti Islands, the one of Porto Cesareo and the one of Torre Guaceto.

Montenegro has not yet established any Marine Protected Areas. However, while developing the National Action Plan for the Reduction of Pollution from Land Based Sources, coastal pollution hotspots and sensitive areas were identified.[23]

Albania has seven protected areas. Recently a Strategic Plan on Marine and Coastal Protected Areas has been developed with the aim of ensure an ecosystem-based spatial management.

Marine water quality

Bathing water quality in 2013 in Albania is for the 51% in compliance with guide values or of excellent quality and the 41,1% is of good of sufficient quality (not excellent), while8% does not comply with mandatory values or are of poor quality but no bathing water resulted into areas being banned or closed.[24]

In Italy, the 87% bathing water is of excellent quality or compliant with guide values, 2.5% is of poor quality and the 0.04% is banned or closed.

Situation and trend of marine ecosystem and natural resources for the CBC area

Italy and Albania adopted measures to protect their marine ecosystem. Montenegro has no such measures yet.
Marine water quality is not excellent in the CBC area, with frequent problem related to bathing water.

---

[21] Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive) (OJ L 164, 25.6.2008, p. 19).
[22] *Blue growth* COM (2012) 494 final.
[23] http://ec.europa.eu/maritimeaffairs/documentation/studies/documents/montenegro_01_en.pdf
[24] Source: EEA

Table 6: Macro indicators for marine ecosystem and natural resources

Indicator	State	Trends
Marine protected area	😐	⇨
Marine water quality	☹	?

3.4 AIR QUALITY

Air pollution

At European level the promotion of air quality is regulated by the EU Directive on Air Quality (Directive 2008/50/EC) which was adopted on 12 May 2008. The systematic measurement of emissions of the basic polluting substances includes continuous 24-hour measuring of sulphur dioxide (SO_2), total nitrogen oxides (NOx), tropospheric ozone (O_3), the overall content of suspended particles (PM_{10}), and lead (Pb).

In Albania according to the European Environment Agency (EEA), currently the main sources of air pollution are oil extraction, mobile sources, homes heating, and the production of cement. The main source of urban air pollution is transport. The number of vehicles continues to grow from year to year and vehicles emissions (including PM_{10}) contribute to a large extent to air pollution causing respiratory problems, especially to the young and the elderly. Measured concentrations of PM10 were above the limit values for all measuring points, except Tirana 2, during 2008–2009. Exceedance in the mean annual concentration of NO2 above the limit values were observed in one station in Tirana City, but not in other Albanian cities. Measured concentrations of sulphur dioxide SO2 were below the limit values at all measuring points in the years 2006–2009. The annual concentrations of carbon monoxide and benzene were below the limit values at all measuring points during 2008–2009.

In Montenegro the Directive 2008/50/EC on ambient air quality (AQ) has been almost fully transposed, with the exception of the definition of "agglomeration". Full transposition is envisaged by the end of 2014 through the amendments to the Law on Air Protection.[25] Measured concentrations (mean annual concentration) of sulphur dioxide (SO_2), nitrogen dioxide (NO_2),

[25] Screening Report Montenegro, Chapter 17 – Environment and climate change, p.4 – 28 November 2013

tropospheric ozone (O_3) and black soot have been below the limit values specified in the EU Directives at all measuring points, from 1999 to 2008.[26]

For the Italian side, in Apulia Region, according to its Annual Report on Air Quality 2013, the only problem concerns PM10. Data shows that the limit of 35 exceedances per annum of the daily average of 50 ug/m3 was overpassed, in Torchiarolo (due to emissions from biomass) and in Martina Franca (due to the traffic). Thresholds set by the law were not exceeded for NO2 (a maximum of 15 mg/m3 against the limit of 40mg/m3) and the average value of NO2 (in mg/m3) shows lower values in 2013 compared to 2002. Ozone (O_3) in summer months is a widespread criticality for Apulia. Limit values set for health protection have been overpassed for the last few years in multiple sites including Lecce, Brindisi, Taranto and Foggia.

No such data are available for Molise region.

Synthesis of Air quality state and trend for the CBC area

At a CBC level, Montenegro seems to have a better quality of the air than the Albanian and Italian part of the area. There are exceedances of the PM10 level in Albania and in Apulia. The trend of the pollutants considered seems to have a stable behaviour.

Indicator	State	Trends
Air Pollution	😐	⇨

3.5 INLAND WATER QUALITY AND SUPPLY

Water bodies status

In Albania regarding the rivers, during the period 2001-2008, Biological Oxygen Demand (BOD5), a measure of organic pollution remained at a more or less constant level, indicating continuing organic pollution, caused by regular urban water discharges into rivers. The highest level of BOD5 is found in the Ishem River. Concentrations of ammonium in rivers show clear changes from year to year and there is a rising trend, notably for 2003-2006, with concentrations apparently decreasing in period 2007-2008. The annual mean concentrations of nitrate in all rivers have decreased, but levels have stabilised in 2006-2008. The concentrations of total phosphorus (P-tot) have been relatively stable in all monitored rivers excepting the Ishem. Regarding groundwater, its intensive exploitation often creates hydrodynamic and hydro-chemical disequilibrium that result in a permanent pollution risk to nature and human activities. Even though groundwater generally has good physical and chemical properties,

[26] http://www.eea.europa.eu/soer/countries/me/soertopic_view?topic=air%20pollution

meeting local pollution standards, with no massive pollution of ponds, some nitrogen dioxide and ammonium is found in some special drilling sites but these are isolated occurrences resulting mainly from poor implementation of rigorous exclusion areas and sanitary protection around the drilling. Regarding lakes, in the Prespa Lake, the oxygen and phosphorus contents show that the lake is already at a mesotrophic tending towards a eutrophic level. The ecological system of the lake requires a detailed study but that will necessitate collaboration between Albania, Macedonia and Greece. In the Ohrid Lake instead, the phosphorus content of 0.006-0.01mg/l, the high content of dissolved oxygen, and relatively high values of transparency, indicate that the water in this lake is oligotrophically stable.

In Montenegro the status of water is determined by the Regulation on the Classification and Categorisation of Surface and Groundwater, in which Category I corresponds to Classes A1, S, and K1; Category II to Classes A2, C, and K2; and Category III to Class A3**.** Water to be used for drinking and the food industry is classified into four classes — A, A1, A2 and A3. Water to be used for fishing and shellfish farming is classified into Classes S, Š and C. Bathing water is classified into Classes K1 and K2.

In the Italian side, in Apulia Region, in the period 2008 - 2009 a number of criticalities emerged. During 2008, the water environmental status was classified generally between *sufficient* and *poor* and in some cases *bad*. Only in one case it was classified as *good*. In 2009 instead, no water bodies were considered at a *good ecological status*, they were all included between sufficient and *bad* and one water body passed at the *inferior* category, although in 5 cases occurred the passage to the *superior quality* class. Regarding drinking water, the analytical results of the period 2008 - 2009 resulted in the classification of the two reservoirs used for drinking (Occhito and Locone) in category A2, intermediate quality among the three categories determined by the standards applicable to the assessment of drinking water.[27] The analysis of sources of pollution shows that the main pollutants come from agriculture and livestock whose loads were determined from the data of land use and the data related to the heads cattle bred in the area. The analysed sources of pollution that have an impact on the quality of some water bodies, especially during the late summer and autumn, are listed below:

- high concentrations of BOD5 and indicators of microbiological organic pollution;
- high concentrations of nitrogen and phosphorus

The high concentrations of BOD5 and microbiological indicators are in most cases due to the discharge of urban waste water not properly purified especially in the lean period of watercourses, whereas the high concentrations of nitrogen and phosphorus are a result of the

[27] Bollettino Ufficiale della Regione Puglia - n. 28 del 23-02-2011

bad agricultural practices involving use of fertilizers and pesticides beyond the absorptive capacity of the cultivated land, which then become part of the drainage network, influencing the environmental state of the water bodies in a bad way. The problems described above are based on some stretches of rivers and lakes like Fortore River, River Ofanto Creek Candelaro Carapelle Creek, Creek Cervaro Saccione Creek, Lake Lesina Lake Varano Lake Alimini Small, Big Lake Alimini and the reservoir of Montemelillo on River Locone. The anthropogenic pressures on the coast due to residential and industrial waste not sufficiently purified and port operations determine a critical status quality of coastal waters, especially near some of the major city centres such as Bari, Brindisi, Foggia, Lecce, Taranto, Barletta and Manfredonia.

In Molise Region, according to data of 2010, the qualitative and quantitative status of water bodies are generally satisfactory. The analyses carried out revealed, however, situations of degradation caused by specific local factors, clearly identifiable. Hence the criticalities are as follows: deterioration in quality and quantity of surface water; decline in quality and quantity of Groundwater; lack of protection / preservation areas of sources of supply; reduction of the ichthyofauna; presence of a small number of designated suitable to support fish life; increased levels of pollutants, even dangerous substances in the marine and coastal waters. As concerns underground waters, ARPA Molise identified and monitored 6 aquifers, whose environmental state according to the Legislative Decree no. 152/99, ranges from "Particular" (Termoli-Campomarino) to "Poor" (Middle Biferno). Following the hydrogeological characterization performed in the PTA and the results of analysis carried out by ARPA, it was possible to define an environmental state even for some of the 20 aquifers identified as significant in the PTA. The monitoring data detected a critical situation with regard to the aquifers of Piana of Volturno River, particularly for agro Venafro, and the Middle Biferno whose environmental state is classified as *poor* and the aquifer Termoli- Campomarino which has a "*particular"* state[28]

Water consumption

In Albania the total water withdrawal per capita per years per data of 2002 is 597m^3 per capita per year.[29] Instead renewable water resources are about 13,300 m^3 per capita per year. These are used for urban, industrial and agricultural purposes as well as for hydroelectricity. In terms of groundwater the renewable resource in seven main geological strata is 1.2 billion m^3 per year.
Montenegro with an average outflow of 40 l/sec/ km^2 (or 19.5 km^3/year) ranks among the top 4 % of countries with the highest average outflow. One method that can give an objective picture of relative water wealth is the Water Competition Index which measures the amount of water available in a country as a function of population (quantity of water divided by number of

[28] Piano di Gestione Acque – Stato qualitativo e quantitativo dei corpi idrici, February 2010 - p. 18
[29] http://chartsbin.com/view/1455

persons with access to a unit volume of water). Using this criterion, 30.4 m^3/year is available to each citizen of Montenegro, which makes Montenegro one of the wealthiest countries in Europe in terms of water. Water consumption is twice Western Europe average as the result of climatic conditions, uncontrolled use of water and significant losses in the water supply system and there is insufficient protection of drinking water in the coastal region during the tourist season.

In the Italian side according to ISTAT data of 2011, in Apulia Region, invoiced water consumption for domestic use is at average of 51 m3/person/year but the data show a decrease in water consumption from 2000 to 2011. In Molise Region, water consumption for domestic use is of 57 m3 per capita per year and the data shows a constant average of consumption in the province of Campobasso and an increase instead in the province of Isernia from 2000 to 2011.[30]

Synthesis of inland water quality and supply for the CBC area

In the CBC area the water bodies status is generally categorised as sufficient, evidencing some problems such as pollution from urban water discharge (as in Albania), pollution from agriculture and livestock (as in Apulia Region) and decline in quality and quantity of ground water and the presence of some dangerous substances in marine water (as in Molise Region).

The consumption of water in the CBC area is in line with the European average (150 l/inhabitant/day). Italian and Albanian regions show level of consumption slightly higher whereas in Montenegro the consumption is lower compared to the European average. Even if at European level it is possible to assess a reduction in water consumption[31], no data are available to assess the trend for the CBC area.

Table 7: Macro indicators for inland water quality and supply

Indicator	State	Trends
Water bodies status	😐	⇨
Water consumption	😐	?

[30] http://dati.istat.it/Index.aspx?DataSetCode=DCCV_INDACQDOM
[31] http://www.eea.europa.eu/data-and-maps/figures/trends-in-european-water-use

3.6 SOIL QUALITY AND LANDSCAPE

Artificial soils and surfaces

In Montenegro the total area of agricultural land has not changed since 1992, but there have been changes in its use. Arable land has decreased by 15% and the amount of perennial crops increased by about 6%. On the other hand, meadowland areas have increased by 11% but there has not been any change in the growth of artificial areas due to land take by residential and economic sites in the period 2000 - 2006. Regarding soil sealing Montenegro has a percentage of 0.77% of the total territory, hence being under the EU average of 1.81%[32].

In Albania a national strategy on Landscape will be designed and approved by the Albanian government for the sustainable management of forest resources. Regarding the artificial areas there was a 5% growth in the period 2000 – 2006 in land take for residential and economic sites. Concerning soil sealing instead, Albania has a percentage of 0.62% of the total area in 2006, which is below EU average.

In the Italian side, according to data of 2006, in Apulia Region the distribution of the land use in was as follows: artificial areas 5%, agricultural areas 83%, forests and semi-natural areas 11%, wetlands 0.5%, water bodies0,7%. In Molise Region the land use was distributed as follows: artificial areas 1.5%, agricultural areas 63%, forests and semi-natural areas 35%, no wetlands and water bodies 0.2%.[33]

The table below presents the percentage of artificial areas used for Build-up and Transport in the CBC area compared to EU average.

Table 8: Built-up surfaces in the CBC area (Source: T33 elaboration from CORINE Land Cover data)

Built-up surfaces in the CBC area **(1.1+1.2)**		
EU average=4.3	Ha	%
IT (CBC area)	116,221.76	4.8
AL	35,218.27	1.2
ME	12,636.82	0.9

[32] *(The European Environment – State and Outlook 2010, Land Use*
[33] http://annuario.isprambiente.it/content/scheda-indicatore-no-tabs/?id_ind=1959&id_area=A04&id_tema=T17&v=8

Total CBC	164,076.85	2.4

Contaminated sites

According to WHO contaminated sites are "*areas hosting or having hosted human activities which have produced or might produce environmental contamination of soil, surface, or groundwater, air, food-chain, resulting or being able to result in human health impacts*".

In Albania the identified Contaminated Sites by EIONET 2011 are more than 10 and the estimated total is 32. According to the same document, Albania has not set any targets for the management of these sites yet.

Montenegro according to the Progress in the management of the contaminated sites in Europe had as political and technical targets for 2008 – 2012 the "*Recovery and/or closure of existing dumpsites, remediation of hot-spots (Contaminated Sites) and the construction of regional sanitary landfills.*" According to the same document, 10 Potentially Contaminated Sites and 5 Contaminated sites have been identified. Data are available for Montenegro in the EIONET database from 2011 onwards.

In Italy contaminated sites are divided into potentially contaminated sites and contaminated sites and each Region keeps a register of sites interested by clean-up procedure. Apulia has a total of 566 potential contaminated sites and 92 sites included or inserted in the Register of Contaminated Sites. Molise has 3 potential contaminated sites and 25 sites are included or inserted in the Register of Contaminated Sites.[34] Origins of contamination are classified as follows: abandonment, asbestos, landfills, distributors, accidents, industries and other causes.[35]

Synthesis of soil use and landscape for the CBC area

The percentage of artificial soils in the CBC area is lower than the EU average, but the trend of consumption of natural soil increased in the last decade.
For what concerns soil contamination, all CBC programme areas entail contaminated sites.

Table 9: Macro indicators for soil use and landscape

Indicator	State	Trends

[34] Le Bonifiche dei Siti COntaminati in Italia: Quadro Normativo e Analisi delle Principali Criticità, D'Aprile Laura, Montecchio Daniele – Gennaio 2010. P. 11
[35] Siti Contaminati, Mina Lacarbona – p. 3

Artificial Soils and Surfaces	☺	
Contaminated sites	☹	?

3.7 NATURAL AND CULTURAL HERITAGE (INCLUDING ARCHITECTURAL AND ARCHAEOLOGICAL HERITAGE)

The most important international convention on the protection of natural and cultural heritage is the World Heritage Convention of 1972. Its features are related to the ability to combine into a single document the concepts of nature conservation and the preservation of cultural works. The Convention recognizes the ways in which humans interact with nature, and the fundamental need to preserve the balance between the two. The World Heritage List includes 1001 sites that are part of the cultural and natural heritage. The World Heritage Committee considers that these sites have a universal value. UNESCO has so far approved a total of 1001 sites (777 cultural, 194 natural and 30 mixed) present in 161 countries around the world.

Italy is the country that has the largest number of sites (50) included in the list of World Heritage. In the two regions involved in the Programme, Apulia has 3 UNESCO sites of the category *Cultural Heritage* and Molise has no UNESCO sites.

Albania ratified the World Heritage Convention on July 10, 1989. It has currently 3 UNESCO sites in the category *Cultural Heritage* and several other properties submitted in the *Tentative List*.

Montenegro ratified the Convention on June 3, 2006. It has currently 2 UNESCO Sites, one of the category *Cultural Heritage* and another one of *Natural Heritage*. Several other sites have been proposed and submitted to the *Tentative List*.

Table 10: UNESCO sites in the CBC area

Unesco Sites		
Country/Region	***Unesco Site***	***Category***
APULIA	Castel del Monte	Cultural Heritage
	Alberobello	Cultural Heritage
	Santuario di San Michele Archangelo	Cultural Heritage
MOLISE	-	-
ALBANIA	Butrint	Cultural Heritage
	Historic Centre of Berat	Cultural Heritage
	Historic Centre of Gjirokastra	Cultural Heritage
MONTENEGRO	Natural and Culturo-Historical Region of Kotor	Cultural Heritage
	Durmitor National Park	Natural Heritage

Synthesis of natural and cultural heritage for the CBC area

The CBC area hosts 8 UNESCO sites, seven of which belonging to the Cultural Heritage category and only one to the Natural Heritage category.

Table 11: Macro indicators for natural and cultural heritage

Indicator	State	Trends
Sites under the UNESCO World Heritage Convention	☺	➡

3.8 ENERGY

Energy consumption

At a European level the latest data available for energy consumption are from 2008 and include EU-27 countries. Hence the average consumption in 2008 was of around 5500 kWh per capita. EUROSTAT data shows that energy mix (in GWh) in EU-28 in 2012 is distributed among combustible fuels (53%), from nuclear power (28%), hydro power (12%), from wind power (6.5%), from solar power (2,2%), geo-thermical power (0.2%) and other sources (0.1%).

In Albania the total final energy consumption for 2012 was of 2002 Ktoe. It was distributed as follows: 1060 ktoe of oil and oil products, 406 ktoe of hydro energy, 218 ktoe of imported electricity, 208 ktoe of waste and biofuel, 83 ktoe of solid fuels, 15 ktoe of natural gas and 12 ktoe of geothermal, solar and wind energy for a total of .[36] According to World Bank data, this amount in 2011 is 2254 kWh per capita and it shows an increase from 2010 (1986 kWh per capita).[37]

In Montenegro the gross inland consumption for 2012 was as follows: 381 ktoe from solid fuels, 269 ktoe from oil and oil products, 127 ktoe from hydro energy, 179 ktoe from waste and biofuel and 104 ktoe from imported electricity for a total of 1060 ktoe. According to World Bank data instead, in 2011 the energy consumption per capita was of 5747 kWh/person showing an increase from 2010 (5414 kWh/person).

In the Italian side, in Apulia Region, the energy consumption in 2012 was 4549 kWh/person/hour. In Molise region this figure amounted to 4178 kWh/person.

[36] http://www.energy-community.org/portal/page/portal/ENC_HOME/ENERGY_COMMUNITY/Overview/Energy_Mix
[37] http://data.worldbank.org/indicator/EG.USE.ELEC.KH.PC

Energy Production

In Albania over 90 per cent of energy production comes from hydropower plants. The energy mix in primary production in 2012 was distributed as follows: 1031 ktoe of crude oil, 460 ktoe of hydro-energy, 220 ktoe of RES, 15 ktoe of natural gas and 2 ktoe of solid fuels for a total of 1673 ktoe.

In Montenegro the energy mix in primary production for 2012 was as follows: 393 ktoe from solid fuels, 127 ktoe from hydro energy and 188 ktoe from RES for a total of 708 ktoe.

In Italy, Apulia Region in 2012 the total electricity produced was of 37,612 GWh and there was a surplus of 83.5% over the consumption (20,501 GWh). In Molise Region the total electricity produced was of production was of 2,674 GWh and there was a surplus of 84,6% over the consumption (1449 GWh).[38]

Renewable Energy

Albania has the potential to develop other renewable energies within the country. Biomass energy will possibly play a noticeable role, and could involve the four main resources: urban wastes, agricultural residues, forest residues and animal wastes. There is also a potential to increase energy generation capacity from solar water heating, wind energy and small hydro power. [39]

Montenegro has relatively abundant water resources given its relatively small size. Although (according to data from UNDP[40]) two large hydropower plants are providing three quarters of electricity in the country, the total energy produced i.e. 1,800 GWh) is only about 18 percent of the total hydropower potential. The promotion of small hydropower in Montenegro has had strong domestic political support. Through tenders issued in 2007 and 2008, the Government was able to issue 13 concessions covering 33 small hydropower plants with a capacity of over 97 megawatts.

In Italy, in Apulia Region in 2012 the total renewable energy produced was of 8206 GWh and it constituted 9% of the total production. It was distributed as follows: 6.4 GWh from hydro-energy, 3274 GWh from wind power, 3491 GWh from solar power, 104 GWh from biomass, 1282 GWh from bio-liquids and 84 from biogas . The production of renewable energy substantially increased in 2010 – 2012.

[38] Dati statistici sull'energia elettrica in Italia – 2012.
[39] (Environmental Performance Reviews – Albania, Second Review Synopsis. United Nations 2012).
[40] http://www.eurasia.undp.org/content/rbec/en/home/ourwork/environmentandenergy/successstories/montenegro-reconfigures-its-energy-strategy/

Molise Region in 2012 produced a total of 1205 GWh of renewable energy and it was distributed as follows: 166 GWh from hydro-energy, 717 GWH from wind power, 191 GWh from solar power, 115 GWh from biomass, 0.1 GWh from bio-liquids, 16 GWh from biogas. There was a slight increase compared to the production of renewable energy in 2010.

Synthesis on energy production and consumption at a CBC level

At a CBC level the energy consumption is lower than the EU average. Montenegro has the highest consumption and Albania the lowest. On the Italian side, the two regions involved in the Programme have a surplus of the electricity produced over the electricity consumed. Another fact to be noticed is that compared to the EU-28 energy mix, in the CBC area there is no electricity production from nuclear power plants and on the other hand there is a remarkable increase in energy production from renewable sources in Apulia region and a slight increase as well in Molise region.

Table 12: Macro indicators for energy production and consumption

Indicator	State	Trends
Energy Consumption	☺	⇨
Energy Production	☺	↗
Renewable Energy	☺	↑

3.9 WASTE

At a European level the latest data available on waste generation per capita is from 2009. At EU-27 + EFTA countries waste generation in 2009 was 515 kg/person/year. For the same period the EU average for recycling waste was of 39%.[41]

Waste Production

In Albania according to the EEA (European Environment Agency) The development of the infrastructure and construction during recent years caused an increase in urban and construction waste. Due to this unforeseen increase in waste and weak management capacities, the impact on the environment and human health is considerable. Prevention and reduction of

[41] http://www.eea.europa.eu/about-us/competitions/waste-smart-competition/recycling-rates-in-europe/image_view_fullscreen

generated waste through recycling and incineration are two main standards of waste management policy. Therefore, to improve waste management, Albania is compiling the National Waste Plan 2010–25. Municipal waste increased in 2009 compared to previous years (857,223 tons in 2009 compared to 571,218 tons in 2003). This is evidence of the increasing consumer behaviour of the population which inevitably leads to more municipal waste. On the other hand, waste from the construction sector decreased during 2009 compared to previous years (455,866 tons compared to 6million tons in 2003). Waste production per capita in 2009 was 267 kg/person/year.

In Montenegro according to the EEA, even though waste statistics are not well developed and there is a lack of data on overall waste generation and on specific waste streams, waste is clearly a significant problem. Improper disposal, usually on simple waste dumps both legal and illegal, is a significant source of air, soil, and surface and groundwater pollution. Regarding municipal waste generation, one of the EEA Core Set of Indicators, estimates range from 0.8 kg/person/day (Master Plan) to 1 kg/person/day (official statistics). Since the geographic structure of Montenegro varies considerably for municipal waste generation, handling, transport and disposal, the assessment of quantities of waste generated in Montenegro is divided into three regions, corresponding also to the official regional division:

- montanious (northern) region – 0.6kg/person/day
- central region – 0.8kg/person/day
- coastal region – 0.9 kg/person/day

According to the Strategic Master Plan, the quantity of waste generated by visitors is 1.5 kg/visitor/day. The Master Plan also includes the waste generated by residents of Montenegro with those generated by refugees – 0.25 kg/person/day. In 2009 waste production per capita was of 290 kg/person/year. Regarding hazardous waste instead, there are no assessments of the types and quantities from households. Considering that the generation of these types of waste is not monitored separately, but is seen within overall quantities of municipal waste generated, data on annual quantities generated is not available.

In Italy, In Apulia Region, regional planning the management of municipal solid waste divides the region into 15 catchment areas corresponding to ATO (Optimal Territorial Areas). For each ATO annual data are provided on the quantities of waste collected for a wide range of waste categories. For 2013 the quantity of waste produced was:

- undifferentiated: 1,456,682,546differentiated 429,212,508kg
- total of municipal solid waste: 1,888,606,473kg
- waste generation per capita: 471 kg/person/year

In Molise Region in terms of waste management is divided in 3 ATO (Optimal Territorial Ares): Province of Isernia, and two ATO in the province of Campobasso. According to ISPRA the total

waste generation in Molise Region in the year 2013 was of 124,075 tonnes and waste generation per capita was 394 kg/person/year.

Recycling

In Albania the waste management system is limited because of the weak collection systems in cities and almost no collection systems in rural areas. Albania has very few recycling/reusing systems for waste and few engineered landfills for the disposal of waste. A request to organise and establish separate collection systems of waste from households has been made to municipalities. This system will help in the separation of plastic, glass and metallic packaging, paperboard, unrefined aluminates, etc. Most of the waste in rural areas is deposited in undefined places and especially in water courses where waste is then transported to other places. There is no system for safely managing domestic and commercial hazardous waste. Hazardous waste generated by the industrial sector and municipal wastes are deposited together with urban waste. The biggest problem at landfills is uncontrolled fires, which release toxic gases (dioxin, furan) in populated areas, presenting a serious problem for human health.

In Montenegro municipal waste are, with small exceptions, not recycled and there are no proper waste recycling facilities. There is nevertheless some selective collection of secondary raw materials which in 2006 consisted in: Paper, cardboard (2800 tonnes), metal/car wrecks (460 tonnes), tins (31 tonnes), plastic (49 tonnes), and glass (40 tonnes).

In Italy, in Apulia Region, the percentage of differentiated waste in 2013 was of 23%. In Molise Region in 2012 the differentiated waste constituted 18% of the total waste.[42]

Synthesis on waste production and recycling in the CBC area

It can be noticed that the waste generation in all the parts of the CBC area is lower than the EU average but the trend varies. In the Italian regions there is a decrease of waste production in the last years, in Albania and Montenegro instead there is an increase. Amount of waste recycled in the CBC area is also lower than the EU average. Albania and Montenegro are in an early stage while Apulia and Molise on the other hand are constantly increasing their share of recycled waste.

Table 13: Macro indicators for waste production and recycling

Indicator	State	Trends
Waste Production	☺	?
Recycling	☹	

[42] Raporto rifiuti urbani 2013

PART II – VERTICAL AND HORIZONTAL INTEGRATION OF THE ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

4 SYNERGY WITH OTHER PLANS AND PROGRAMMES RELEVANT FOR THE ITALY-ALBANIA-MONTENEGRO AREA

According to Annex I(e) of the SEA Directive[43] an external coherence analysis should compare the CBC Italy-Albania-Montenegro Programme with other key plans or strategies for the cooperation area and that deal with environmental issues covered by the Programme strategy.

Coherence was analysed at the level of the CBC Programme 'Specific Objectives' and related 'Investment Priorities' using a specific assessment matrix. External coherence analysis is built on the list of relevant documents drawn up by SEA experts and completed by the EAs, during the Scoping Report consultation.

The following coherence levels were established using a joint-methodology developed with the ex-ante evaluators:

- CONTRAST (C): where the Programme strategy could potentially clash with local stakeholder interests or the Programme differs from strategic goals;
- NEUTRAL (N): where the Programme strategy and key plans have no common fields of interaction, neither at target group level nor at objective level;
- COHERENT (S/O): where the Programme strategy and the key plans and strategies share similar strategic goals, actions and target groups.

[43] '*The environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation.*'

It is important to underline that the analysis of the interactions between the *consequences* of the policies and the environmental issues are not of concern for the coherence analysis, but will be tackled in the assessment of environmental effect analysis.

In the following, a brief description of the strategies constituting the framework for the main environmental policies at European level has been drafted and results of the coherence analysis are summarized in Table 14. In addition, the coherence analysis has been carried out for the policies relevant at the CBC area level and for the national policies relevant for the Countries involved.

The tables of coherence have then been used to extract the main environmental objective relevant for the CBC Programme and relevant for the CBC area.

4.1 COHERENCE WITH THE COMMUNITY-LEVEL POLICIES

Description of the main strategies

Biodiversity, Landscape and Cultural Heritage Policy Framework

The European framework on nature protection is stated by the EU 2020 Biodiversity Strategy (COM (2011) 0244), which main objective is "Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss."

The Strategy then sets a list of targets involving economic sectors as agriculture ("maximize areas under agriculture across grasslands, arable land and permanent crops that are covered by biodiversity"), forestry (through the promotion of Sustainable Forest Management) and fisheries ("achieve Maximum Sustainable Yield).

Another basic document in nature protection is the Pan-European Biological and Landscape Diversity Strategy (PEBLDS), adopted at the 3rd Ministerial Conference "An Environment for Europe" held in October 1995 in Sofia, Bulgaria, as a follow up of the Rio Earth Summit and of the "Convention on Biological Diversity". The principal aim of the Strategy is to find a consistent response to the decline of biological and landscape diversity in Europe and to ensure the sustainability of the natural environment. The strategy differs from previous attempts to conserve biodiversity in four important ways:

- the geographical scope, covering virtually the entire continent of Europe and northern and central Asia;
- the ecosystems-based approach;

- the joined approach to conservation of biodiversity and landscapes into an integrated framework.

The long-term objectives set by the strategy consist in the establishment of a Pan-European Ecological Network to conserve ecosystems, habitats, species and landscapes that are of European importance, in the sustainable management and use of Europe's biodiversity and in integrating biodiversity conservation and sustainability into the activities of other sectors. In addition the strategy aims to improve awareness and understanding on biodiversity issues.

The IUCN Global Species Programme provides the framework for planning, implementing, monitoring and evaluating the conservation work undertaken by the Commissions and the Secretariat with and on behalf of IUCN Members. It has three Programme Areas:

1. Valuing and Conserving Nature enhances IUCN's heartland work on biodiversity conservation, emphasizing both tangible and intangible values of nature.
2. Effective and Equitable Governance of Nature's Use consolidates IUCN's work on people-nature relations, rights and responsibilities, and the political economy of nature.
3. Deploying Nature-based Solutions to Global Challenges in Climate, Food and Development expands IUCN's work on nature's contribution to tackling problems of sustainable development, particularly in climate change, food security and social and economic development.

The Convention for the Protection of the Archaeological Heritage of Europe (Valletta Convention, 1992) is a Europe-wide international treaty which establishes the basic common principles to be applied in national archaeological heritage policies. It supplements the general provisions of the UNESCO World Heritage Convention 1972.

Air quality and Climate change

The main reference for the Climate Change issues is Kyoto Protocol (UNFCCC 1997), an international agreement linked to the United Nations Framework Convention on Climate Change, which commits its Parties by setting internationally binding emission reduction targets. The reduction set in Europe for 2008- 2012 in respect to 1990 levels is 8%.

In 2013, the Commission adopted an EU Adaptation Strategy (COM (2013) 216) with the aim to anticipating the adverse effects of climate change and taking appropriate action to prevent or minimise the damage they can cause. It promotes adaptation in key vulnerable sectors such as agriculture, fisheries and cohesion policy.

The Convention on Long-range Trans-boundary Air Pollution (CLRTAP) of the United Nations Economic Commission for Europe (UNECE) is finalized to limit and, as far as possible, gradually reduce and prevent air pollution including long-range trans-boundary air pollution. Parties develop policies and strategies to combat the discharge of air pollutants through exchanges of information, consultation, research and monitoring. Currently, a special focus is given to the implementation of the Convention and its protocols across the Eastern Europe.

The Thematic Strategy on Air Pollution (COM 2005 446) aims to obtain "levels of air quality that do not give rise to significant negative impacts on, and risks to human health and environment". It establishes objectives for air pollution and proposes measures for achieving them by 2020: modernising the existing legislation, placing the emphasis on the most harmful pollutants, and involving to a greater extent the sectors and policies that may have an impact on air pollution.

Soil

The Soil Thematic Strategy was adopted by the European Commission on 2006 (COM(2006) 231), with the objective to protect the soil while using it sustainably, through the prevention of further degradation, the preservation of soil function and the restoration of degraded soils. The strategy is based on four main pillars, namely awareness raising, research, integration, and legislation. Recently the European Commission has prepared a report on the implementation of the strategy (COM(2012) 46) which provides an overview of the actions in Europe to implement the four pillars of the Strategy. It also presents the current soil degradation trends both in Europe and globally, as well as future challenges to ensure protection.

The UN Convention to Combat Desertification (UNCCD) was adopted on 17 June 1994 by the Intergovernmental Negotiating Committee and it aims to combat desertification and mitigate the effects of it, through international cooperation and partnership with a view to achieving sustainable development; to implement long-term integrated strategies that focus simultaneously on improved productivity of land, and the rehabilitation, conservation and sustainable management of land and water resources, leading to improved living conditions; to encourage the use of existing financial mechanisms.

Water and Marine ecosystem

The International Convention for the Prevention of Pollution from Ships (MARPOL) was adopted in 1973 and is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes. The MARPOL Protocol was adopted in 1978 and the combined instrument entered into force on 2 October 1983. The convention includes regulations aimed at preventing and minimizing pollution from ships - both

accidental pollution and that from routine operations - and currently includes six technical annexes:

- prevention of pollution by oil,
- control of pollution by Noxious Liquid Substances in Bulk
- prevention of pollution by harmful substances carried by sea in packaged form
- prevention of pollution by sewage from ships
- prevention of pollution by garbage from ships
- prevention of air pollution from ships44

Marine Strategy Framework Directive. Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establish a framework for Community action in the field of marine environmental policy. This directive establishes common principles on the basis of which Member States have to draw up their own strategies, in cooperation with other Member States and third countries, to achieve a good ecological status in the marine waters for which they are responsible.

These strategies aim to protect and restore Europe's marine ecosystems and to ensure the ecological sustainability of economic activities linked to the marine environment. Therefore based on this directive Member States must firstly assess the ecological status of their waters and the impact of human activities. Hence they must then determine the "good ecological status" of the waters on the basis of criteria such as biodiversity, the presence of non-indigenous species, stock health, the food chain, eutrophication, changes in hydro-graphic conditions and concentrations of contaminants, the amount of waste and noise pollution.[45]

The Blue Growth Strategy (COM(2014) 254/2 *Innovation in the Blue Economy: realising the potential of our seas and oceans for jobs and growth*, COM 13.09.2012 Blue Growth opportunities for marine and maritime sustainable growth) is the long term strategy to support sustainable growth in the marine and maritime sectors as a whole.
The strategy consists of three components:

1. Develop sectors that have a high potential for sustainable jobs and growth
2. Essential components to provide knowledge, legal certainty and security in the blue economy
3. Sea basin strategies to ensure tailor-made measures and to foster cooperation between countries

---

44 http://www.imo.org/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx

45 http://europa.eu/legislation_summaries/maritime_affairs_and_fisheries/fisheries_resources_and_environment/l28164_en.htm

Synthesis of the coherence at European and International level

The following table sums up the coherence analysis between the Programme and strategic documents at European and international level. No one of the SOs seems to be in contrast with policies on environmental or sustainable development issues.

The environmental third axis is synergic with some objectives of European and international strategies, especially concerning air quality, GHG emission and water quality and management.

Table 14: External coherence of the CBC Programme with strategies at European and international level

Priority Axis	Specific Objectives	Interaction with the policy	Coherence results
1. Strengthening the cross-border cooperation and competitiveness of SMEs	1.1 Enhance the framework conditions for the development of SME's cross-border market.	Potential synergic interaction with the Blue Growth Strategy	S/O
2. Smart management of natural and cultural heritage for the exploitation of cross border sustainable tourism and territorial attractiveness	2.1 Boost attractiveness of natural and cultural assets to improve a smart and sustainable economic development	No interaction found	N
	2.2 Increase the cooperation of the key actors of the area for the delivery of innovative cultural and creative products	No interaction found	N
3. Environment protection, risk management and low carbon strategy	3.2 Boost implementation of innovative practices and tools to reduce carbon emission and to promote energy efficiency in public sector	These SO acts in the same direction delineated by the Thematic Strategy on Air Pollution	S/O
	3.1 Increase cross-border cooperation strategies on water landscapes	This SO acts in the same direction delineated by the Marine Strategic Framework Directive , by the International Convention for the Prevention of Pollution from ships, by the UNCCD, by the Biodiversity Strategy and by PEBLDS	S/O

4. Promoting sustainable transport and improving public infrastructures by, inter alia, reducing isolation through improved access to transport, information and communication networks and services and investing in cross-border water, waste and energy systems and facilities	4.1 Increase coordination among relevant stakeholders to promote sustainable cross border connections in the cooperation area	Potential synergic interaction with the Blue Growth Strategy	S/O

4.2 COHERENCE WITH THE POLICIES STRATEGIC FOR THE CBC AREA

In this section, the main strategic documents at national level and those inherent the cross border cooperation area are analysed. The scope is to stress any peculiar strategies relevant for Italy-Albania-Montenegro shared territories.

Principal strategies on environmental issues at cross-border level

EU Strategy for the Adriatic and Ionian Region (EUSAIR)

The EUSAIR is a strategy focusing on the Region of Adriatic and Ionian Seas and covering eight countries: four EU Member States (Croatia, Greece, Italy, and Slovenia) and four non-EU countries (Albania, Bosnia and Herzegovina, Montenegro and Serbia). The Communication and Action Plan have been transmitted to the other EU institutions and bodies, and has been discussed in the Council during the second semester of 2014. The Strategy incorporates the Maritime Strategy for the Adriatic and Ionian Seas[46], adopted by the Commission on 30 November 2012. The general objective of the new Strategy is to promote economic and social prosperity and growth in the region by improving its attractiveness, competitiveness and connectivity. It should also play an important role in promoting the EU integration of Western Balkans. The Action Plan indicates the four pillars of the strategy, each with its own specific objectives:

1- <u>Blue Growth:</u>

- Promotion of research, innovation and business opportunities in blue economy sectors;
- Adaptation to sustainable seafood production and consumption;

[46] It will utilise the existing resources, legislation and structures to foster cross-border partnerships and prioritise objectives around which local, regional and national actors can be mobilized to turn the priorities of the Europe 2020 Strategy into targeted actions.

- Improvement of sea basin governance.

2- Connecting the Region

- Strengthening of maritime safety and security and development of a competitive regional intermodal port system;
- Development of reliable transport networks and intermodal connections with the hinterland, both for freight and passengers;
- Achievement of a well-interconnected and well-functioning internal energy market.

3- Environmental Quality

- Ensuring a good environmental and ecological status of the marine and coastal environment by 2020;
- Contribution to the goal of the EU Biodiversity Strategy to halt the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restore them in so far as feasible;
- Improvement of waste management by reducing waste flows to the sea and, to reduce nutrient flows and other pollutants to the rivers and the sea.

4- Sustainable Tourism

- Diversification of tourism offer (products and services);
- Sustainable and responsible tourism management (innovation and quality).

Strategic Programme for Mediterranean forests (SPMF)

This Programme was approved in 2013 and includes 9 Strategic Lines:

- Improve sustainable production of goods and services by Mediterranean forests;
- Enhance the role of Mediterranean forests in rural development;
- Promote forest governance and land tenure reforms at landscape level;
- Promote wildfire prevention in the context of global changes;
- Manage forest genetic resources and biodiversity to enhance adaptation of Mediterranean forest to climate change;
- Restore degraded Mediterranean forest landscapes;
- Develop knowledge, training and communication on Mediterranean forests;
- Reinforce international cooperation;
- Adapt existing financial schemes and develop innovative mechanisms to support

implementation of forest policies and programmes[47].

Synthesis of the coherence at cross-border level

The coherence between the EUSAIR strategies and the CBC Programme is evident for all Priority Axes, with the exception of the first (concerning the SMEs cross-border cooperation and competitiveness) for which no direct interaction has been found. Pillar 2 ("Connecting Regions") has been found coherent with the objectives regarding the reduction of GHG emission (SO 3.2) and the coordination of transport (SO 4). The EUSAIR Pillar 3 ("Environmental Quality") has several points of connection with the CBC SO 3.1 on natural risk prevention and water management improvement, and it concerns also the marine protection objectives. The sustainable tourism at the basis of EUSAIR Pillar 4 is fully considered by the CBC Priority Axis 2. Even if the Programme for the Mediterranean Forests is focalized on forest management (tasks that is not of concern for the CBC Programme), it contains elements of coherence with the CBC IT-AL-ME Programme. In particular, the implementation of attractiveness of natural assets pursued by the Programme share objectives as set in the strategies delineated by the SPMF. Some of the objectives addressed by the EUSAIR strategy are not considered in the CBC Programme.

Table 15: External coherence of the CBC Programme with policies strategic for the CBC

Priority Axis	Specific Objectives	Interaction with the policy	Coherence results
1. Strengthening the cross-border cooperation and competitiveness of SMEs	1.1 Enhance the framework conditions for the development of SME's cross-border market.	No interaction found	N
2. Smart management of natural and cultural heritage for the exploitation of cross border sustainable tourism and territorial attractiveness	2.1 Boost attractiveness of natural and cultural assets to improve a smart and sustainable economic development 2.2 Increase the cooperation of the key actors of the area for the delivery of innovative cultural and creative products	These SOs act in the same direction delineated by EUSAIR – Pillar 4 and also by the Strategic Programme for the Mediterranean Forests	S/O

[47] http://iii-med.forestweek.org/content/strategic-framework-mediterranean-forests-sfmf

3. Environment protection, risk management and low carbon strategy	3.1 Increase cross-border cooperation strategies on water landscapes	These SO acts in the same direction delineated by the EUSAIR – Pillar 3 and SO 3.1 acts also in the same direction delineated by the Strategic Programme for the Mediterranean Forests	S/O
	3.2 Promoting innovative practices and tools to reduce carbon emission, to improve energy efficiency in public sector	This SO acts in the same direction delineated by the EUSAIR- Pillar 2	S/O
4. Promoting sustainable transport and improving public infrastructures by, inter alia, reducing isolation through improved access to transport, information and communication networks and services and investing in cross-border water, waste and energy systems and facilities	4.1 Increase coordination among relevant stakeholders to promote sustainable cross border connections in the cooperation area	This SO acts in the same direction delineated by the EUSAIR – Pillar 2	S/O

Principal strategies on environmental issues in Italy

National Strategy for Biodiversity

The development of a National Strategy for Biodiversity is part of the commitment undertaken by Italy after the ratification of the Convention for Biological Diversity in Rio de Janeiro in 1992 by means of law No. 124 of February 1994. The Strategy will be implemented from 2011 to 2020. The Strategic Objectives of the Strategy are:

1- By 2020 ensure the conservation of biodiversity or the variety of living organisms, their genetic diversity and the ecological complexes of which they are part, and ensure the protection and restoration of ecosystem services in order to guarantee their key role for life on Earth and human well-being;

2- By 2020 substantially reduce the nationwide impact of climate change on biodiversity by defining the appropriate measures to adapt to climate change and mitigate their effects and increasing the resilience of natural and semi-natural ecosystems and habitats;

3- By 2020 integrate biodiversity conservation into economic and sectorial policies, also as potential for new employment opportunities and social development while improving the understanding of the benefits from ecosystem services derived from biodiversity and the awareness of the costs of losing them.

The working areas of the Strategy are species habitats and landscape, protected areas, genetic resources, agriculture, forests, inland waters, marine environment, infrastructures and transportation, urban areas, health, energy, tourism, research and innovation, education information communication and participation, Italy and global biodiversity.

National Strategy for Sustainable Development

The national Strategy for Sustainable Development of Italy has been updated in 2002. Its general objectives are:

- Conservation of biodiversity;
- Protection of the territory from hydrological, seismic and volcanic risks and from erosions in the coasts;
- Reduction and prevention of desertification;
- Reduction of pollution in the inland waters, in the marine environment and in the soil;
- Reduction of the anthropic pressure on the natural systems, on the agricultural and forestall soil and on the sea and coasts.

National strategy of adaptation to climate change

The National Strategy of adaptation to climate change, drafted by the Environmental Ministry in collaboration with scientific and technical experts, has recently obtained the approval from the Region-State unified Conference (30 October 2014). The objective of this document is to provide a framework for the adaptation to the impacts of climate change and to lay the foundations for a collective process in order to:

- Improve knowledge on climate change and its impacts;
- Describe the opportunities that may be associated, the vulnerability of the area, the adaptation options for all natural systems and the socio-economic risks;
- Promote participation and increase awareness of stakeholders in defining strategies and adaptation plans through an extensive process of communication and dialogue, in order to integrate adaptation within the sectorial policies more effectively;
- Support awareness and education on adaptation through extensive communication activities on the possible risks and opportunities posed by climate change;
- Identify the best options for adaptation actions, coordinate and define the responsibilities for implementation, develop and implement the measures.[48]

Regarding water resources, the measures based on an ecosystem approach are as follows:

- Redevelopment of the waterways in view of the preservation of life and outflows of ecological quality even in situations of changes in future regimes of thermo- precipitation;
- Creation of buffer zones between cultivated areas and waterways;

[48] Elementi per una Strategia Nazionale di Adattamento ai Cambiamenti Climatici- Documento per la Consultazione Pubblica, p. 3 , 12 September 2013

- Protection and conservation of forests and ranges of the coastal vegetation;
- Artificial Recharge of aquifers;
- Improvement of the water holding capacity of soils.

The Marine Strategy

The Framework Directive 2008/56/EC on the strategy for the marine environment was transposed in Italy through legislative decree n. 190 of 13 October 2010. The Directive aims to Member States to achieve by 2020 the GES (GES "Good Environmental Status") for its marine waters. The Good Environmental Status implies:

- Conservation of the ecosystems and healthy, clean and productive marine waters;
- Sustainable use of the Marine Resources;
- Integrated approach and cooperation between States.

The National Programme of Waste Prevention

By Decree of 7 October 2013 the Ministry of the Environment Land and Sea adopted the National Programme for Prevention of Waste. Such adoption took place within the time limit provided for in the EU Directive 2008/98 / EC on 12 December 2013. The purpose of the Programme is to disassociate economic growth from environmental impacts caused by the generation of waste. The general measures of the programme concern:

- Sustainable production;
- Green public procurement;
- Reuse;
- Information, awareness and education;
- Regulation and economic and fiscal instruments;
- Promotion of research.

Synthesis of the coherence at Italian level

The National Strategy on biodiversity is coherent with the CBC Priority Axis 2 as both aim to use biodiversity protection and restoration as a drive for economic growth. The Green Public Procurement promoted by the National Programme of Waste Prevention is coherent with the energy efficiency strategies delineated by the CBC SO 3.2. Natural risks prevention and sustainable water management pursued by CBC SO 3.1 have correspondent strategies set up by the National Strategy for Sustainable Development and by the National Strategy of Adaptation to Climate Change. The objectives stated by the Marine Strategy found a partial correspondence in PA 2 (for the implementation of attractiveness of natural resources, including marine ones) and in PA 3, concerning the integrated management of natural risks (including those linked to

coastal areas). In addition, the promotion of cooperation between States is commont to the Marine Strategy and to the CBC Programme PA 4.

Table 16: External coherence of the CBC Programme with policies strategic at Italian level

Priority Axis	Specific Objectives	Interaction with the policy	Coherence results
1. Strengthening the cross-border cooperation and competitiveness of SMEs	1.1 Enhance the framework conditions for the development of SME's cross-border market.	No interaction found	N
2. Smart management of natural and cultural heritage for the exploitation of cross border sustainable tourism and territorial attractiveness	2.1 Boost attractiveness of natural and cultural assets to improve a smart and sustainable economic development 2.2 Increase the cooperation of the key actors of the area for the delivery of innovative cultural and creative products	The SOs act in the same direction of the National Strategy on Biodiversity and of the Marine Strategy	S/O
3. Environment protection, risk management and low carbon strategy	3.1 Increase cross-border cooperation strategies on water landscapes	The SO acts in the same direction delineated by the National Strategy for Sustainable Development, the Marine Strategy and by the National Strategy of Adaptation to Climate Change	S/O
	3.2 Promoting innovative practices and tools to reduce carbon emission, to improve energy efficiency in public sector	This SO acts in the same direction delineated by the National Programme of Waste Prevention – Green public procurement	S/O
4. Promoting sustainable transport and improving public infrastructures by, inter alia, reducing isolation through improved access to transport, information and communication networks and services and investing in cross-border water, waste and energy systems and facilities	4.1 Increase coordination among relevant stakeholders to promote sustainable cross border connections in the cooperation area	The Marine Strategy sustains the cooperation between States	S/O

Principal strategies on environmental issues in Albania

General strategies on Environmental and Health issues

In the Environmental Programme preamble the Albanian Ministry of Environment is "*Committed to guarantee a healthy environment for the citizens, to preserve it from the*

pollution and damaging, from the activities of natural and legal persons, to consider it as an added value and an important asset for generating economic activities, especially related to tourism, and to preserve it as a heritage for the future generations".

The Environmental Crosscutting Strategy 2007 outlines the State policy in the field of environmental protection. The ultimate goal of the design, approval and implementation of this strategy is to fulfil a constitutional duty to the citizens who enjoy the right to a healthy environment and ecological development.[49] It focuses on improvement of enhanced energy efficiency in all the sectors, with the view to reduce energy interruption and GHG emissions. A joint public awareness Programme and enforcement of relevant standards (such as thermal insulation of buildings) are required. This strategy is supported by detailed Action Plans addressing specific issues e.g. Strategy and Action Plan for Biodiversity, Strategy for the Development of Forests and Pastures, Fisheries Strategy and the National Plan of Waste Management.

In the Long-term development strategy of the Albanian health system of 2004, among others are listed the strengthening of the monitoring and evaluation unit and the preparation of national strategic plans aimed at guiding the design of health plans at local level, to guide large investments in the health sector, to monitor and evaluate development trends as well as the implementation of Programmes within the health system and to provide a measurable development of the health sector.

Energy and Climate Change Policies

Climate change policy is built through National Communications. For each sector, analyses and development scenarios were conducted, and measures were proposed aiming at mitigation of and adaptation to expected climate changes. One of the policy documents produced by August 6, 2011, was the HCFC Phase-out Management Plan (HPMP), specifically designed to address the issue of ODS (HCFC) consumption phase-out, to enable the Government of the Republic of Albania to meet the obligations it has assumed as a Party of the Montreal Protocol. Long-term objective is to reduce up to 29 tons HCFC until 2040 compared with 129 tons in 2013.

The National Energy Efficiency Action Plan 2010-2018, was adopted by the DCM No. 619, dated 7.09.2011. The National Energy Efficiency Action Plan (NEEAP) of Albania tries to be in compliance with the Directive 2006/32/EC, April, 5, 2006 on "energy efficiency end use and energy services", Directive 2002/91/EC "On energy performance building" (recast 2010/31/EP), Directive 92/75/EC (recast 2010/30/EP). National Action Plan on Renewable Resources has

[49] STRATEGJIA NDËRSEKTORIALE E MJEDISIT - (Strategjia Kombëtare për Zhvillim dhe Integrim), p. 4

been prepared and is waiting to be adopted by the Government. This draft involves technical and legislative measures for the country until 2018 which are in line with the relevant EU directives; the obligations the country has as a party to the Energy Treaty; and the objectives of National Energy Strategy.

National Plan of Waste Management

The National Plan of Waste Management was adopted on May 2010, for the period 2010 – 2025. The strategic priorities and policies are as follows:

- Adoption of European Union legal standards;
- Implementation and enforcement of environmental legislation;
- Investing in environmental protection (to achieve EU standards in: solid waste management, closure of existing waste landfills in urban areas, rehabilitation of contaminated land and of the pollution sources, technological improvement of state industries);
- Financial support for environmental infrastructure;
- Improvement of communication and awareness;
- Improvement of the monitoring system.

Strategies for water quality and protection

Strategies for water quality and protection are identified by the Law N. 111 of 15.12.2012 for integrated management of water resources states. It is mainly finalised to the protection and improvement of the aquatic environment (included sea waters and trans-boundary waters) and to the protection of water resources from pollution, overuse, to the rational utilization of water resources, including a fair distribution of water resources by their effective management and to the design of an institutional framework, at a national and local level on water resource management.

Convention on Biological Diversity

The Convention on Biological Diversity also known as BDC was signed by Albania on January 5th 1994. In the Action Plan of 1999 it is stated that the main purpose of the implementation of BDC in Albania is "*the preservation and improvement of the biological and landscape diversity of the country and the incorporation of the principles and policies for sustainable and appropriate use of these elements in other sectors, with the aim of achieving a sustainable development for present and future generations*".

Synthesis of the coherence at Albanian level

The Convention on Biological Diversity aims to the integration of biodiversity conservation into other sectors and is coherent with the CBC Priority Axis 2. The Environmental Crosscutting Strategy promotes the awareness of protection of natural and cultural environment, and act in the same direction of the CBC PA2. The National Energy Efficiency Action Plan and the CBC SO 3.2 are coherent as both aim to reduce GHG emission and improve energy efficiency. In the same direction act also the Crosscutting Strategy 2007 – 2013. Water quality is the focus of the CBC SO 3.1 that found coherence with the Law on Water Quality Protection. The National Plan of Waste Management does not found correspondence with objectives of the CBC Programme, that doesn't address the specific matter of waste management.

Table 17: External coherence of the CBC Programme with policies strategic at Albanian level

Priority Axis	Specific Objectives	Interaction with the policy	Coherence results
1. Strengthening the cross-border cooperation and competitiveness of SMEs	1.1 Enhance the framework conditions for the development of SME's cross-border market.	No interaction found	N
2. Smart management of natural and cultural heritage for the exploitation of cross border sustainable tourism and territorial attractiveness	2.1 Boost attractiveness of natural and cultural assets to improve a smart and sustainable economic development 2.2 Increase the cooperation of the key actors of the area for the delivery of innovative cultural and creative products	The SO acts in the same direction of the Convention on Biological Diversity and with the Environmental Crosscutting Strategy	S/O
3. Environment protection, risk management and low carbon strategy	3.1 Increase cross-border cooperation strategies on water landscapes	The SOs act in the same direction delineated by the Law N. 111 of 15.12.2012 on Water Quality and Protection and by the Environmental Crosscutting Strategy	S/O
	3.2 Promoting innovative practices and tools to reduce carbon emission, to improve energy efficiency in public sector	These SO acts in the same direction delineated by the Environmental Crosscutting Strategy 2007 – 2013 and by the National Energy Efficiency Action Plan 2010 – 2018	S/O

4. Promoting sustainable transport and improving public infrastructures by, inter alia, reducing isolation through improved access to transport, information and communication networks and services and investing in cross-border water, waste and energy systems and facilities	4.1 Increase coordination among relevant stakeholders to promote sustainable cross border connections in the cooperation area	No interaction found	N

Principal strategies for environmental strategies in Montenegro

Strategy on Sustainable development

The National Strategy of Sustainable Development (NSSD) was adopted in January 2007. The first measures consisted in the adoption of the Landscape Convention of the Council of Europe in October 2008. The three pillars of the Strategy are:

1- Economic Development;
2- Environmental and Natural Resources;
3- Social Development.

Regarding the land, the priority of the NSSD is the improvement of soil management and prevention of the causes of land degradation and damages. In accordance with the obligations Montenegro took over by ratification of the United Nations Convention to Combat Desertification, a National Plan to Combat Desertification was adopted in 2010. Regarding the forests, the same strategy states as a priority to obtain sustainable forestry certificate (in accordance with Forest Stewardship Council - FSC methodology) and the renewal and rehabilitation of degraded forests.Based on the identification of problems and challenges in the field of environmental protection and management of natural resources, economic and social development, the following general goals of NSSD Montenegro have therefore been defined:

1. Accelerate economic growth and development, and reduce regional development disparities;
2. Reduce poverty; ensure equitable access to services and resources;
3. Ensure efficient pollution control and reduction, and sustainable management of natural resources;
4. Improve governance system and public participation, mobilise all stakeholders, and build capacities at all levels;
5. Preserve cultural diversity and identities.

National Strategy on Biodiversity

The National Strategy on Biodiversity was adopted together with its Action Plan by the government of Montenegro in July 2010, for the period 2010-2015. According to the Strategy, in the next period Montenegro will intensify research activities to enable completion of scientific inventories for priority groups of plants and animals identified as such according to protection of biodiversity and sustainable use criteria, or within the needs arising from the process of EU accession (Network Natura 2000 areas – Action Plan Measure no. 5 'Identification and Development of the National Network Natura 2000'). One of the main goals of the strategy is to provide the transposition and implementation of directives and regulations of the European Union which relate to natural habitats and wild species, as well as to ensure organisational adaptation and capacity building of institutions responsible for biodiversity conservation/environmental protection, according to the needs based on the application of relevant laws in the EU accession process. A majority of activities (21 of 54) started in 2011 and 16 were initiated in 2012. All activities are expected to be completed by 2015.[50]

Montenegro has been declared as an "ecological state" in the first article of the Constitution and with that it has given the highest priority to its natural resources. To adequately manage and protect natural resources, the Law on Environmental Protection ("Official Gazette" no. 51/08) defines natural assets that are subject to state protection (Article 37 of the Law).

Climate change and Energy policies

Montenegro ratified the United Nations Framework Convention on Climate Change (UNFCCC) in October 2006 and the Kyoto Protocol (KP) in June 2007; it is non-Annex I Party to the UNFCCC. Montenegro stated that it has not yet put forward a mitigation commitment for 2020. Montenegro submitted its first National Communication to the UNFCCC in October 2010 and is currently preparing its Second National Communication, planned to be submitted in 2014.

Energy Development Strategy of Montenegro by 2025 was adopted in December 2007. The Strategy presents the paths, needed measures and steps (the so-called "roadmap") that Montenegro will follow in the implementation of adopted objectives of the long-term Energy Policy. Its main objectives are:

- Qualitative, reliable and diverse energy supply;
- Maintenance and rehabilitation of the existing and construction of the new energy infrastructure;

[50] National Biodiversity Strategy with the Action Plan for the period 2010 – 2015 , Draft. Podgorica, July 2010

- Reduction of import energy dependence of the Republic of Montenegro;
- Establishment of adequate legislative, institutional, financial and regulatory framework for private capital investments;
- Creating conditions for higher utilisation of renewable energy resources, cogeneration and clean technology using fossil fuels;
- Establishment of competitive energy market;
- Provision of institutional and financial incentives in order to improve energy efficiency and reduce energy intensity in all sectors;
- Sustainable production and consumption of energy in relation to environmental protection, and international cooperation, especially in the field of reduction of greenhouse gas emissions;
- Support to scientific researches, development and introduction of new, clean and efficient technologies.

National Waste Management Strategy Policy Paper (2013)

The document mentions that: *This National Waste Management Strategy is a statement of our commitment to develop this system and of our vision for the period to 2030.*

Furthermore the vision of the Policy is *"To implement an optimised modern waste management system within Montenegro so as to minimise the negative impact of waste on the environmental and maximise the economic benefits from waste management through the transformation of waste into a resource whilst achieving an equitable distribution of costs and ensuring full compliance with European Union legislative requirements. "*[51] .

The Waste Management Framework is created on these basic principles:

1. The Sustainable Development Concept: the requirement to undertake development in a resource efficient manner so as to not jeopardise the development possibilities of our children and future generations including the transformation of waste into a resource;
2. The Precautionary Principle: in the face of uncertainty concerning the environmental outcomes of a proposed course of action, a cautious approach should be taken so as to ensure protection of the environment;
3. The Polluter Pays Principle: those responsible for generating pollution should bear the cost of its treatment and remediation;
4. The Proximity Principle: that waste should be treated as close as practicable to its point of production;
5. The Waste Hierarchy: in order of priority:

[51] National Waste Management Strategy Policy Paper , p.7 – December 2013

- Waste Prevention;
- Preparing for Reuse of products for the same or different purpose;
- Recycling – using waste as raw materials;
- Recovery of waste through energy recovery and production of marketable outputs;
- Safe disposal of waste which could not have been processed otherwise.

On the other hand the specific Waste Streams are: waste from extractive industries, agricultural waste, clinical waste, construction and demolition waste, other industrial waste, sewage sludge from waste water treatment plants, hazardous waste and municipal waste. The Strategy has set targets in the short term, medium term and long term. In summary this approach entails the use of low and medium range technologies to maximise the level of material and energy recovery whilst maintaining affordable tariffs, controlling risk and employing realistic investment schedules.

Synthesis of the coherence at Montenegrin level

The National Strategy of Sustainable Development represents the general framework for environmental policies in Montenegro. The CBC Programme is coherent with this Strategy for the sustainable economic development of the tourism sector pursued by SO 2.1 and for the environmental sustainability in energy, natural risk and water sectors addressed in PA 3. The energy efficiency objectives of SO 3.2 are also coherent with the Energy Development Strategy. The National Strategy on Biodiversity and the National Waste Management Strategy Policy Paper set specific sectorial objectives that have no equivalent inthe CBC Programme.

Table 18: External coherence of the CBC Programme with policies strategic at Montenegrin level

Priority Axis	Specific Objectives	Interaction with the policy	Coherence results
1. Strengthening the cross-border cooperation and competitiveness of SMEs	1.1 Enhance the framework conditions for the development of SME's cross-border market.	No interaction found	N
2. Smart management of natural and cultural heritage for the exploitation of cross border sustainable tourism and territorial attractiveness	2.1 Boost attractiveness of natural and cultural assets to improve a smart and sustainable economic development	This SO acts in the same direction delineated by The National Strategy of Sustainable Development (NSSD)	S/O
	2.2 Increase the cooperation of the key actors of the area for the delivery of innovative cultural and creative products	No interaction found	N
3. Environment protection, risk management and low carbon strategy	3.1 Increase cross-border cooperation strategies on water landscapes	The SOs act in the same direction delineated by the National Strategy of Sustainable Development (NSSD)	S/O

	3.2 Promoting innovative practices and tools to reduce carbon emission, to improve energy efficiency in public sector	This SO acts in the same direction delineated by the Energy Development Strategy by 2025 and by The National Strategy of Sustainable Development (NSSD)	S/O
4. Promoting sustainable transport and improving public infrastructures by, inter alia, reducing isolation through improved access to transport, information and communication networks and services and investing in cross-border water, waste and energy systems and facilities	4.1 Increase coordination among relevant stakeholders to promote sustainable cross border connections in the cooperation area	No interaction found	N

Result of the coherence analysis for policies of the CBC area

The following table presents a synthesis of the previous individual analysis at a CBC and national level. It describes the relation between the specific strategies or plans addressing main environmental issues at different levels and the Priority Axes of the IPA CBC Programme. It resulted that the CBC Programme is not in contrast with the Strategies/Policies acting in the CBC area. For some of the Strategies/Policies considered here, a "neutral" relationship with the CBC Programme has been found. This means that the PAs of the CBC Programme do not address explicitly any objectives of the documents (Strategies/Policies) considered. Even if no interaction has been found for specific environmental issues, the objectives stated by the Strategies have been pointed out.

Table 19 - SEA External coherence analysis results for the CBC area

Environmental topic	LEVEL	DOCUMENTS	PA 1: Strengthening the cross-border cooperation and competitiveness of SMEs	PA 2: Smart management of natural and cultural heritage for the exploitation of cross border sustainable tourism and territorial attractiveness	PA 3: Environment protection, risk management and low carbon strategy	PA 4: Promoting sustainable transport and improving public infrastructures	Strategic environmental priority for CBC area
Biodiversity	CBC	Strategic Framework on Mediterranean Forest	N	S/O	S/O	N	- Restore degraded ecosystems and their associated services - Protect and preserve the diversity of species - Integrate biodiversity conservation into economic and other sectorial policies - Halt the loss of Biodiversity by 2020 (EU Biodiversity Strategy)
		EUSAIR	N	S/O	S/O	N	
	AL	Convention for biological diversity Action Plan	N	S/O	N	N	
	IT	National Strategy for Biodiversity	N	S/O	N	N	
	ME	National Strategy on Biodiversity	N	N	N	N	
Climate change	CBC	Strategic Framework on Mediterranean Forest	N	N	S/O	N	- Mitigation and adaptation to expected climate changes - Coordinate and define the responsibilities for implementation of adaptation actions
		EUSAIR	N	N	S/O	N	
	AL	Crosscutting Strategy 2007 – 2013 Energy Efficiency Action Plan 2010 - 2018	N	N	S/O	N	
	IT	A National Strategy to Climate Change	N	N	S/O	N	
	ME	Energy Development Strategy of Montenegro by 2025	N	N	S/O	N	
Air quality	CBC	EUSAIR	N	N	N	N	- Reduce emissions into the atmosphere - Ensure ongoing improvements in air quality to avoid damage to heritage, natural ecosystems and agricultural
	AL	Environmental Crosscutting Strategy 2007	N	N	N	N	

		– 2013					crops
	IT	National Strategy for Sustainable Development	N	N	N	N	
	ME	National Strategy of Sustainable Development	N	N	N	N	
Water quality and supply	CBC	EUSAIR	N	N	S/O	N	- Monitoring of water resources - Awareness raising - Minimize the pollution and hazards in the water - Reduce the rate of water related diseases
	AL	Law Nr. 111/2012 for Integrated Management of Water Resources	N	N	S/O	N	
	IT	National Strategy for Sustainable Development	N	N	S/O	N	
Marine Ecosystems and resources	CBC	EUSAIR	N	S/O	S/O	N	- Sustainable use of Marine Resources
	AL	Law Nr. 111/2012 for Integrated Management of Water Resources	N	N	S/O	N	- Prevent further deterioration, protect and improve the state of the coasts and terrestrial and wetland ecosystems that depend directly on aquatic ecosystems.
	IT	Strategy for Marine Environment	N	S/O	S/O	S/O	- Sustainable use of Marine Resources - Good environmental and ecological status of the marine and coastal environment by 2020
	ME	National Strategy on Biodiversity	N	N	N	N	- Establishment of Marine Protected Areas - Establishment of connections land/shore/sea for sustainable use of natural resources
Waste management	CBC	EUSAIR	N	N	N	N	- Improvement of waste management - Reduction of waste flows to the sea - -Reduction of nutrient flows and other pollutants to the rivers and the sea.
	AL	The National Plan of Waste Management	N	N	N	N	- Improvement of the monitoring system - Implementation and enforcement of

							environmental law
	IT	The National Programmeme of Waste Prevention	N	N	S/O	N	- Green public procurement - Information, awareness and education
	ME	National Waste Management Strategy Paper 2013	N	N	N	N	- The Proximity principle: the waste should be treated as close as practicable to its point of production
Landscape and natural and cultural heritage	CBC	Strategic Programme for Mediterranean forests	N	S/O	N	N	- Research into the economic value of natural assets
	AL	Environmental Crosscutting Strategy	N	S/O	S/O	N	- Raise awareness on the protection of the natural and cultural environment - Preservation and restoration of cultural and aesthetic values of the natural landscape
	IT	National Strategy for Sustainable Development	N	S/O	S/O	N	- Protection and promotion of the cultural heritage - Enhancement of cultural heritage
	ME	National Biodiversity Strategy with the Action Plan for the period 2010 – 2015	N	N	N	N	- Reduce the loss of coastal habitats due to urbanization - Research into the economic value of natural assets

Legend: S/O: Coherent
N: Neutral

5 ENVIRONMENTAL PROTECTION OBJECTIVES AND INTERNAL COHERENCE OF THE PROGRAMMEME

The Environment Report takes account of '*the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or Programme and the way those objectives and any environmental considerations have been taken into account during its preparation*'[52].

The list of environmental objectives has been drafted taking into account the results of the coherence analysis, especially concerning strategic document for the CBC area. Obviously, not all the environmental objectives listed in the sectorial strategies have been included in the list, but only those objectives relevant in respect to possible action of CBC Programme have been considered for further analysis. In addition, the wording of the objectives presented in the single strategies has been modified to match the information coming from the different sources.

The result of this selection is shown in the following table, where environmental and sustainable objectives of the area are underlined and listed by environmental theme.

Table 20 Environmental objectives

Environmental issues	Topic	General environmental objectives
Climate change and associate risks	GHG emission	Reduce GHG emissions
	Adaptation	Reduce flooding risks
		Reduce risks linked to coastal erosion
		Reduce risks of desertification
Air quality	Air pollution	Improve air quality
Water quality and supply	Water quality	Improve or maintain underground, surface and bathing water quality
	Water use	Reduce pressures on fresh water

[52] Directive 2001/42/EC Annex I(e)

Environmental issues	Topic	General environmental objectives
Biodiversity and ecosystem	Ecosystem	Restore degraded ecosystems and their associated services
	Biodiversity	Protect and preserve the diversity of species
Marine ecosystems and natural resources	Marine Water quality	Improve or maintain costal water quality
	Marine Ecosystems	Protect and preserve the diversity of species
	MarineNatural resources	Reduce the pressures on natural resources
Soil quality and use	Soil quality	Remediate contaminated soils and lands
	Soil management	Improve efficiency in soil and land management
Technological risks	Risks prevention	Prevent technological risks
Health and Sanitary risks and nuisances	Human health protection	Reduce chemical pollution and its effect on health
		Decrease noise pollution
		Reduce electromagnetic pollution
Natural and cultural heritage and Landscape		Preserve landscape and cultural heritage
Energy	Renewable	Promote renewable energies
	Efficiency	Improve energy efficiency
Waste management	Production	Reduce the production of waste
	Recycling	Promote recycling and reuse

PART III – ENVIRONMENTAL EFFECTS ANALYSIS

6 LIKELY SIGNIFICANT EFFECTS ON THE ENVIRONMENT

6.1 METHODOLOGICAL APPROACH FOR THE ASSESSMENT

The Directive requires the evaluation of the likely significant effects on environment of the actions implemented by the Operational Programme. The evaluation must consider in particular the direct and indirect impacts, their probability and their scale, their frequency, duration and reversibility, the cumulative nature of their effects and their cross-border dimension.[53]

Evidence from the past and experiences from other Programmes belonging to the cooperation objective show that many expected effects of the Programme should be intangible and indirect. According to the Regulation, actions planned for territorial cooperation are much more related to networking and information sharing than infrastructural investments with significant short terms and direct effects on environment (see Table 21 for a first characterization of environmental effects of actions under ETC funding[54]).

Table 21 Typology of actions

Type of action	Environmental effects	Time horizon
Investment in infrastructure	Direct, localised and certain, non-reversible	Short, long term
State aid and support for innovation projects	Indirect, localised, non-reversible	Medium, long term
Information and communication	Indirect, intangible, non-localised, reversible	Short, medium

[53] Directive 2001/42/EC Annex II (2)
[54] Article 3 proposal ERDF Regulation and Article 6 of the ETC Regulation.

Networking, cooperation and exchange of experience	Indirect, intangible, non-localised, reversible	Short, medium

The analysis of the effects comprises three main steps. In a first step, the environmental objectives identified in Table 20 are matched with the proposed actions and eligible activities planned by the Operational Programme (Section 6.2).

In a second step, the SEA experts will combine the previous table with an estimation of the effects intensity according to a system of weight associated to the characteristic of each effect. This gives a scale of intensity for positive and negative effect as illustrated in Table 22.

Table 22 Scale for measuring positive and negative effect

Positive effects	***Scale to measure the intensity of the effects***	**Negative effects**
++	Very significant effects	--
+	Significant effects	-
?	Unknown effect[55]	?
n.s.	No significant effects	n.s.

Legend:

++ = very significant positive effects; -- = very significant negative effects

+ = significant positive effects; - = significant negative effects

ne = no effects; n.s. = no significant effects; ? = unknown effect

Thirdly, the information will be organised to assess the cumulative and cross-border effects of each action planned by the Cooperation Programme. The cumulative impacts will be ordered by environmental theme and will be evaluated considering all possible causal relationships leading to an impact on that theme.

Three levels contributing to the cumulative effect are considered:

[55] "?": some actions planned by the Programme could have indirect impacts difficult to estimate under the current methodologies of assessment. E.g. projects in the field of innovation or R&D could have environmental effects depending on many different factors, such as technology, market conditions or implementations factors, unknown at the beginning of the program.

- The first includes effects from different actions directly influencing the environmental issues (and related objectives).
- The second adds the contribution of other environmental components to the objective.
- The third order effects act on the second order ones.

The single effects will be weighted in relation to their level, i.e. their contribution to the final environmental theme, to obtain a overall significance of the cumulative effect.

6.2 INTERACTIONS BETWEEN SO OF THE PROGRAMME AND ENVIRONMENTAL OBJECTIVES

Based on information from Table 21, actions with a potential effect will be recognized by an "X" while actions with no environmental significant effect by "n.e.' This last sign is not to be confound with 'ns' used for indicating the absence of likely significant environmental effects (as, for example, communication plans to public is not related to environment topics).

Results are shown in table Table 23. From the table is apparent as some of the environmental issues considered here are not interested by the realization of the Programme.

Table 23: Interactions between Programme and Environmental Issues

Environmental issues	Environmental objectives	OS1.1	OS2.1	OS2.2	OS3.1	OS3.2	OS4.1
Climate change and associate risks	Reduce GHG emissions	n.e.	n.e.	n.e.	n.e.	X	X
	Reduce flooding risks	n.e.	n.e.	n.e.	X	n.e.	n.e.
	Reduce risks linked to coastal erosion	n.e.	n.e.	n.e.	X	n.e.	n.e.
	Reduce risks of desertification	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.
Air quality	Improve air quality	X	n.e.	n.e.	n.e.	n.e.	X
Water quality and supply	Improve or maintain underground, surface and bathing water quality	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.
	Reduce pressures on fresh water	X	X	X	X	X	n.e.
Biodiversity and ecosystem	Restore degraded ecosystems and their associated services	n.e.	X	X	X.	X	X
	Protect and preserve the diversity of species	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.
Marine ecosystems and natural resources	Improve or maintain costal water quality	n.e.	n.e.	n.e.	X	n.e.	n.e.
	Protect and preserve the diversity of species	n.e.	n.e.	n.e.	X	n.e.	n.e.
	Reduce the pressures on natural resources	n.e.	X	X	X	n.e.	X
Soil quality and use	Remediate contaminated soils and lands	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.
	Improve efficiency in soil and land management	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.
Technological risks	Prevent technological risks	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.

Environmental issues	Environmental objectives	OS1.1	OS2.1	OS2.2	OS3.1	OS3.2	OS4.1
Health and Sanitary risks and nuisances	Reduce chemical pollution and its effect on health	n.e.	n.e.	n.e.	n.e.	n.e.	X
	Decrease noise pollution	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.
	Reduce electromagnetic pollution	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.
Natural and cultural heritage and Landscape	Preserve landscape and cultural heritage	n.e.	n.e.	n.e.	X	n.e.	n.e.
Energy	Promote renewable energies	n.e.	n.e.	n.e.	n.e.	X	n.e.
	Improve energy efficiency	X	X	X	n.e.	X	n.e.
Waste management	Reduce the production of waste	X	X.	X	n.e.	n.e.	n.e.
	Promote recycling and reuse	n.e.	n.e.	n.e.	n.e.	n.e.	n.e.

6.1 ASSESSMENT OF EFFECT FOR PRIORITY AXIS

PA1 - Strengthening the cross-border cooperation and competitiveness of SMEs

PA1 is devoted to the improvement of competitiveness of SME's through cooperation practices. It includes only one OS, aimed at strengthening cross-border competitiveness, contributing to cross-border smart specialization strategies. Possible actions from the OS range from access to research results and technology transfer for SME's, to networking of Intermediary Organizations (such as Chambers of Commerce), to feasibility studies and pilot actions for innovation.

An environmental assessment of this OS is not straightforward. In general, innovation could imply a reduction of pressure on resources, but it is clearly true only in the case of the blue economy and green economy or for sustainable innovations. In the Programme, it is not clear how much the use of these practices will be encouraged. As a consequence, possible positive effects on water and energy use, emissions and waste production would be no significant (because not certain, reversible and localized). Actions about networking and financing tools don't have assessable effects on environment.

Main critical aspects: the OS is not addressed to sustainable improvement of SME's

PA2- Good governance of natural and cultural heritage for the exploitation of cross border sustainable tourism and territorial attractiveness

The PA2 is devoted to the tourism and it contains two SO.

The SO 2.1 contains actions focus on development and branding of macro-regional tourism routes. The actions included in the SO consider the development of common ITC promotional tools in cultural/tourism sector, the creation of products for specific tourism categories and the development of new cross border cultural/tourist routes. Possible actions are also finalized to develop common models for the smart and sustainable tourism management. Valorisation of natural resources is seen as the driving for implementing tourism volume. Action on tourism, if not opportunely addressed in a sustainable sense, could have negative effect on environment. The expected increase of tourism could have negative effect on use of resources (energy, water and waste production) and on ecosystems (included marine ones). These effects are not significant because of their low probability of occurrence and reversibility. The creation of mountain and bike trail has not *a-priori* negative effect, but it is necessary to establish appropriate criteria for the project selection, particularly for those regarding peculiar natural

and cultural sites. Here, negative effects are assessed following a precautional approach and to better set appropriate criteria for the realization of the actions.

SO 2.2 concerns the promotion of cultural heritage through promotion and realization of cultural and creative activities, initiatives and events. Possible actions are mainly immaterial with, in general, not direct or significant effect on environment. The promotion of tourism, consequent to the implementation of the activities, has environmental consequences of unknown sign (positive or negative): an increase of tourism could have negative effects on use of resources and on ecosystems (as the previous OS) but the promotion of off-peak or a niche tourism could have positive effect on the same resources, so that the "real" environmental effect depend on the way of implementation of the OS.

Main critical aspects To increment the added value of cross-border cooperation in this field, the OP would be focused on shared elements of cultural and natural heritage. The main is the marine ecosystem (with its cultural and natural assets), that is not directly addressed by the two OSs. Instrument able to grant the sustainability of tourism increase are not pointed out.

PA3 - Environment protection, risk management and low carbon strategy

The Priority Axis is about environment protection, risk management and low carbon strategy.

The SO3.1 is on cross-border cooperation strategies on water landscapes and it wants strength the management and the cooperation between partners in order to enhance the capacity of relevant actors to improve the water cycle management with attention to coastal and inland environmental risks prevention and biodiversity safeguard. The SO could have positive effects on climate change adaptation, by actions for risk management and prevention, cross-border early warning system and procedures for risk assessment. These effects, that are direct and involve a whispered spatial horizon, became significant considering the priority give to climate change adaptation issues in this analysis.

In addition, positive indirect effect can be expected on inland biodiversity and ecosystem, as consequences of the improved management of coastal and natural area.

For the effect on marine ecosystem and on landscape, networking and exchange of information could have positive consequences in term of an improved management of coastal areas; on the other hand, actions aimed to contrast coastal erosion, can be translated in the realization of defence infrastructures, whit negative effects on conservation of natural marine environment and landscape. The reference to Natura 2000 Network and to the Integrate Coastal Management in the description of the OS (become more evident in the last version of the OP, in respect to the previous), address through a sustainability of the intervention. Adequate orientation measures could help to grant this sustainability.

Action on water management should produce positive effects on water use and quality, but also in contrasting desertification, for what concern the measures addressed to agriculture.

The SO 3.2 is on coordination in implementation of innovative practices and tools on the reduction of carbon emission (also through the promotion of energy efficiency).

Positive significant effects are expected in terms of reduction of GHG emissions, improvement of energy efficiency and increase in renewable energies.

Main critical aspects: It is not clear whether or not OS3.1 includes infrastructure or operations for coastal defence interventions. In case of positive answer, the Programme should better address environmental protection issues, in promoting specific measures dedicated to landscape and marine ecosystem conservation.

PA4 - Cross border sustainable networks and accessibility

The only SO selected for the PA is devoted to increase coordination among relevant stakeholders to promote sustainable cross border connections in the cooperation area. Actions included in the Programme are wide spreading, ranging from the cooperation to improve multimodal connections, to the realization of small scale physical infrastructures, to coordination to intercept new traffic flows. Even if in the OS wording appears the term “sustainability”, it is not clear from the actions listed the measures that will be taken to grant environmental sustainability in the transport systems. The increment of transport flows should have negative effects (significant, because with a wide spatial diffusion and certain in respect to the action foresee) on air quality and on GHG emissions. Possible not significant effect is expected on human health, in term of exposition to pollutants. The realization of small physical infrastructures has negative effects on biodiversity: these effects are significant because, even if not certain (depending on the location and on project characteristics), they are likely to be not reversible. Effects of unknown sign have been associated to the pressure on marine ecosystem: the nature (positive or negative) of these effects will depend on how much the actions under this OP are concretely addressed to sustainability.

Main critical aspects Considering the amount of resources, a whispered of actions have been inserted. Possible negative effects linked to the increment of traffic flows will be avoided if concrete measures for the sustainability will be taken into account. In addition, even if is not a peculiar environmental issues, it is essential to consider the high level of criminality in the area in which is intended to implement actions for facilitating traffic of passengers and goods.

Table 24: Possible effects on environmental issues

Environmental issues	Environmental objectives	OS1.1	OS2.1	OS2.2	OS3.1	OS3.2	OS4.1
Climate change and associate risks	Reduce GHG emissions					+	-
	Reduce flooding risks				+		
	Reduce risks linked to coastal erosion				+		
	Reduce risks of desertification						
Air quality	Improve air quality	n.s.					-
Water quality and supply	Improve or maintain underground, surface and bathing water quality				+		
	Reduce pressures on fresh water	n.s.	n.s.	?	+		
Biodiversity and ecosystem	Restore degraded ecosystems and their associated services		n.s.	?	n.s.		-
	Protect and preserve the diversity of species				n.s		
Marine ecosystems and natural resources	Improve or maintain costal water quality				n.s		
	Protect and preserve the diversity of species				n.s		
	Reduce the pressures on natural resources		-	?	n.s		?
Soil quality and use	Remediate contaminated soils and lands						
	Improve efficiency in soil and land management						
Technological risks	Prevent technological risks						
Health and Sanitary	Reduce chemical pollution and its effect on health						n.s.

Environmental issues	Environmental objectives	OS1.1	OS2.1	OS2.2	OS3.1	OS3.2	OS4.1
risks and nuisances	Decrease noise pollution						
	Reduce electromagnetic pollution						
Natural and cultural heritage and Landscape	Preserve landscape and cultural heritage				n.s		
Energy	Promote renewable energies					+	
	Improve energy efficiency	n.s.	n.s.	?		+	
Waste management	Reduce the production of waste	n.s.	n.s.	?			
	Promote recycling and reuse						

6.2 ASSESSMENT OF CUMULATIVE EFFECTS

According to the methodological approach presented in Section 6.1, cumulative effects have been assessed. The overall environmental assessment of the Programme (in terms of cumulative effects) is positive. Nevertheless, for all the environmental issues considered, the positive effects are not significant, because they include negative or unknown effects coming from single actions on specific issues.

Climate change and related risks	***Cumulative effect***
	+
Relevance to the cooperation area	
Climate change is of primary importance for the cooperation area, especially regarding adaptation issues, as sea level rise. Most coastal areas are subject to erosion and large parts of the territories are vulnerable to floods. All contributions to adaptation are essential.	
Cumulative effects	
The overall effects of the OP on climate change consider the first order effects on environmental objectives for climate are adaptation and GHG reduction. Energy consumption is a major cause of GHG emission. Effects on energy efficiency and renewable energy (second order) are also considered. Biodiversity and natural resources, through ecological services, is an important instrument of climate change adaptation (second order). Since water quality and management, soil use and waste management can contribute to biodiversity defence and ecosystem conservation they are included in the cumulative effect (third order). The effects on natural risks, while not necessarily directly deriving from climate change, have been also included (as a second order). Cumulatively there is a significant positive effect. The main contributions are from the positive effect on climate change objectives, both in term of adaptation (SO 3.2) mitigation and (SO 3.1). Negative effects on biodiversity and ecosystems (SO 2.1 and 4.3) have reduced the positive significance of the effect..	
Cross-border effects	
Climate change is a classic example of a cross-border issue. Wherever the issue originates its consequences are widely distributed. GHG reduction efforts will have global effects. Climate change impacts common environmental components or areas, with no consideration for man-	

made boundaries; it is inherently cross-border. So, it is crucial to contemplate adaptation objectives using cooperation instruments.

Water and marine ecosystems	***Cumulative effect***
	n.s.
Relevance to the cooperation area	
Water represents a strategic resource in the cooperation area. Water management is one of the main challenges for the candidate Countries. The CBC area is strongly characterized by the shared marine ecosystem, that represents an opportunity of sustainable growth.	
Cumulative effects	
Cumulative effects on water and marine ecosystem primarily come from actions on water management included in the OS 3.2. Possible negative effects expected on marine ecosystem from implementation of tourism (SO 2.2) and transport (SO4.1) reduce the significance of cumulative effect, that remain positive. Ecological services supplied by ecosystems contribute to water quality, so that effects on biodiversity and natural ecosystems (second order) have been considered. Effects on soil quality and management and on waste production and management have been included (second order) because of their influence on water quality. Climate change effects (second order) and related energy issues (third order) also influence water management. The cumulative effect is positive but not significant, originating from the combination of positive and negative effects, these latter mainly on biodiversity and marine resources from PA 4	
Cross-border effects	
The cooperation area is strongly characterized by the presence of Adriatic Sea, that represents the physical shared cross-border area. An appropriate management of maritime transport and of use of marine resource would be hoped and would implies real positive cross-border effects.	

Air	***Cumulative effect***
	0

Relevance to the cooperation area
Even if air quality in the cooperation area is in general of good quality (with polluants concentration below the limit values specified by EU legislation) in last year, especially in Albania and Montenegro we are assisting to an increase of the possible source of pollutants (first of all, traffic).
Cumulative effects
The cumulative effect on air quality is affected by GHG reduction, energy efficiency and renewable energy. Also the reduction of waste production and waste management improvement are taken into account (second order). Ecosystem and biodiversity are included for their mitigation of pollution (second order). Negative effects on air quality and GHG emission (PA4) and positive effects on biodiversity and energy (PA3) balance out giving a null effect.
Description of cross-border effects
The scattered nature of environmental components implies cross-border effects. Obviously actions focused on a limited administrative scale will have localised effects, whereas cooperation and networking on, for example, sustainable mobility, will have real cross-border effects.

Biodiversity	***Cumulative effect***
	n.s.
Relevance to the cooperation area	
The CBC area has very diverse landscapes and ecosystems. It hosts high percentage of European biodiversity in terms of habitat and species. Nevertheless, tools for a cross-border management of natural resources need to be enforced.	
Cumulative effects	
The not significant positive effect on biodiversity results from the combination of positive and negative effects both on natural resources and ecosystems and on environmental issues linked to them. The positive contribution primarily came from contribution of SO 3.1 to the reduction of environmental risks (second order effects). Negative effects on ecosystems (first order effects) became from SO 2.1 (increase in tourism) and from SO 4.1 (in reason of the possible realization of infrastructures).	

Cross-border effects
The cross-border nature of this environmental component is not strictly related to the resource itself, but rather to the ecological services it provides. In addition, several activity sectors, such as tourism, which could affect biodiversity and natural resources are cross-border. The OP promotes coordination in activities and sectors such as innovation and coastal management, which strongly influence biodiversity. Particularly important is the marine ecosystem, a characteristic element of this cooperation area.

Natural and Cultural Heritage	***Cumulative effect***
	n.s.
Relevance to the cooperation area	
The cooperation area hosts natural and cultural hotspots which value has been recognized by UNESCO. Nevertheless, natural and cultural heritage represent a key element for the development of the area.	
Cumulative effects	
Cultural heritage protection needs to minimise any adverse impact on heritage assets and setting. An important role is then played by adaptation measures and by actions to tackle natural risks (second order effect). Air quality is important for monument conservation and is therefore taken into account (second order). Soil management could contribute to the cultural element in natural heritage (landscape) and ecosystems are intimately related to landscape (both of second order). The resulting effect is positive and not significant, being the result of positive (mainly from SO3.1 on natural risks reduction) and negative (again from SO 4.1) single effects. In is interesting to note that non direct effect on natural culturale heritage have been assessed from the CP.	
Cross-border effects	
Natural and cultural heritage are by definition in particular areas or locations. Nevertheless they can be affected, also positively, by cross-border activities, primarily tourism. The CP is not focused on cultural heritage, but some recommendations can improve the performance of the	

Programme for this during its implementation.

Soil quality and Landscape	***Cumulative effect***
	n.s
Relevance to the cooperation area	
The cooperation area present a percentage of artificial soil lower than the EU average,even if the trend is increasing. All the three Country involved in the Programme, host contaminated sites.	
Cumulative effects	
Almost every SO in the CP has positive effects on soil, because its quality is influenced by other environmental components. The cumulative effects is positive not significant and becames mainly from PA3 (risks reduction and water quality improvement)	
Cross-border effects	
Some aspects of soil quality, such as the release of nutrients, are cross-border. In addition, soil is strongly influenced by human cross-border activities, such as agriculture. The CP does not put any particular emphasis on soil among the objectives, still this could represent an opportunity e.g. soil management as an instrument for climate change adaptation.	

6.3 EFFECTS OF POSSIBLE ALTERNATIVE SCENARIOS

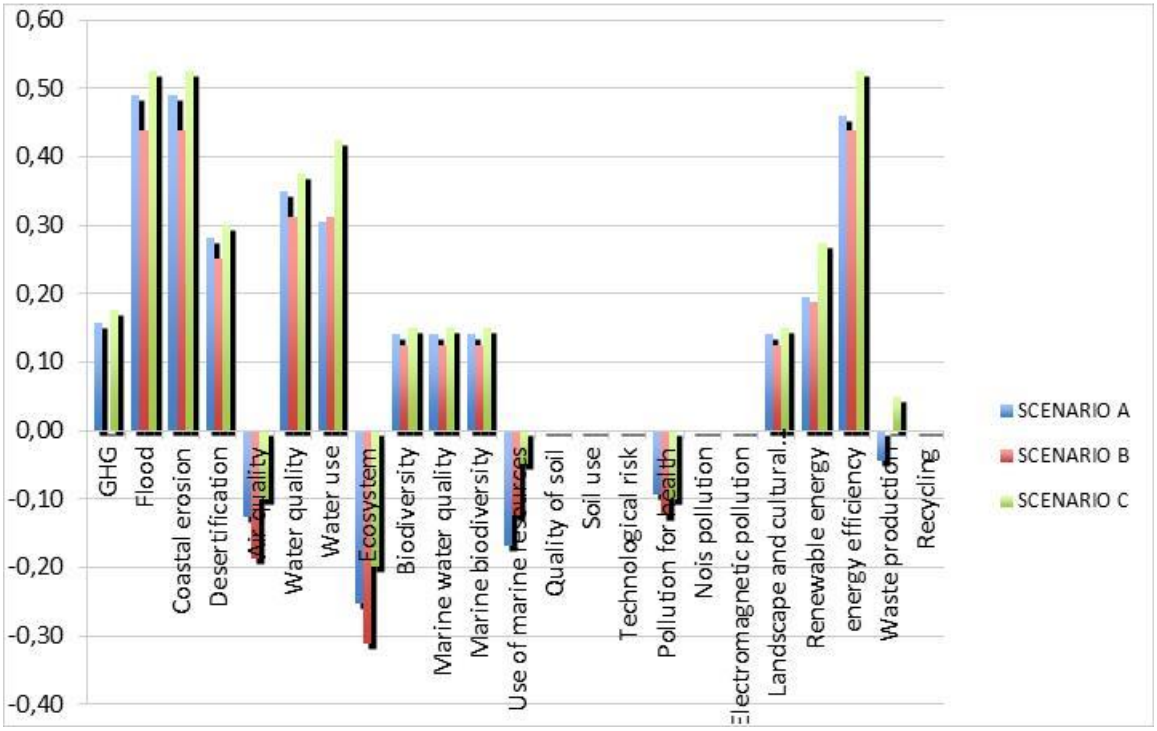
The assessment of alternatives is a key element of the SEA. For the assessment of the alternatives, three different scenarios have been built changing the allocation of resources, as described in Table 25. The Scenario A considers the allocation of resources for Priority Axis described in section 3.2 of the current version of the OP. In the Scenario B, an uniform repartition of financial resources between the PAs has been considered. Finally, the Scenario C presents a repartition favourable for the PAs with better environmental performances.

The percentage allocation of resources has been used to weight the effects assessed for each PAs. Results are presented in Figure 10.

Table 25 Scenarios for the assessment of the alternatives.

	PA 1	PA 2	PA 3	PA 4
SCENARIO A	22%	28%	25%	25%
SCENARIO B	25%	25%	25%	25%
SCENARIO C	30%	20%	30%	20%

Figure 10 – Environmental effects of the OP considering different resources scenarios.



The comparative assessment shows that the cumulative effects change significantly only if the financial repartition is drastically changed. This suggests that an improvement of environmental performance of the Programme could be obtained modifying the actions rather than changing the financial framework.

The scenario chosen by the OP (Scenario A) represents a good compromise between positive and negative effects. Even if Scenario C presents better environmental performance (it has been

chosen to enhance positive effects and to minimize the negative ones), the A realistically try to answer to the needs of the cooperation area, producing good environmental performances.

6.4 ELEMENTS FOR THE INCIDENCE ANALYSIS

According to Annex I(d) of the SEA Directive, the assessment should consider 'any existing environmental problems which are relevant to the plan or Programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC'.

In the environmental report, there is a full description of the cooperation area's environmental resources, highlighting interactions between the environment and the Programme.

According to national legislation of the Member States involved in the Programme (as the Italian D.lgs 152/2006), this section underlines the absence of significant effects the Programme could have on Natura 2000 sites and on habitats and species protected under the Birds Directive and the Habitats Directive.

At this stage of Programming, an in depth assessment of the incidence is not possible, for the OP covers a broad area and does not determine the localisation of its actions. However, the Programme still presents some interactions with Natura 2000 areas, and in particular, protected habitats.

Table 26 - Programme interactions with habitats possibly involved in Natura 2000 networks

Habitat aggregation	Vulnerability/Threats	Programme interactions
COASTAL AND HALOPHYTIC HABITATS	Tourism, yachting, water pollution, water harvesting	SO2.1, SO2.2, SO3.2
COASTAL SAND DUNES AND INLAND DUNES	Tourism, beach replenishment	SO2.1, SO2.2, SO3.1
FRESHWATER HABITATS	Water harvesting, nitrate pollution, intervention on riverbeds, dams	SO3.2
TEMPERATE HEATH AND SCRUB	Only edaphic- climatic factors.	No interaction
SCLEROPHYLLOUS SCRUB (MATORRAL)	Lacking of appropriate management	No interaction
NATURAL AND SEMI-NATURAL GRASSLAND FORMATIONS	Lacking of traditional use, alien species	No interaction
RAISED BOGS AND MIRES AND FENS	Water harvesting, nitrate pollution, climate change	SO3.1, SO3.2

ROCKY HABITATS AND CAVES	Low vulnerability. Possible threats from tourism in caves	SO2.1, SO2.2
FORESTS	Different threats for the different forest habitat, mainly tourism, water harvesting, new roads construction	SO2.1, SO2.2, SO3.2, SO4.1

Main possible interactions with Natura 2000 Network would be linked to PA2, that whit SOs 2.1 and 2.2 is aimed to promote tourism. Promotion of sustainable tourism could represent a reduction in threatening Natura2000 resource; on the other hand, actions finalized simply to increase tourist fluxes could have negative interaction whit habitat and species. The real incidence of the two SOs depends on the way of their implementation.

Interactions with SO.3.2 are all positive: the SO is devoted to climate change mitigation and to improve water management. This latter aspect is fundamental to avoid possible incidence on Natura 2000 sites, in particular in candidate Countries that are still adapting their lows on water management at European standard.

SO3.1 is on climate change adaptation. The OP doesn't explicit tools for pursuit climate change adaptation and biodiversity in integrated manner, so that it is not possible to exclude incidence on Natura 2000 resource from realization of actions of this SO. This aspect is of relevance for the habitats pertaining to the *Coastal sand dunes and inland dunes* category, particularly threatened by beach replenishment.

No interaction, at this stage of Programmeming, has been evaluated with respect to PA1, aimed to SME competitiveness.

According to the general Commission guidance document on the management of Natura 2000 sites[56], Programme incidences are analysed in terms of two main topics: deterioration of habitat and disturbance of species. For each of them, appropriate factors have been taken in to account.

Table 27 - Analysis of the Programme foreseen incidences

Topics	Factors	Assessment result
Deterioration of habitats	Natural range and area covered by the habitat	No reduction of habitats is expected. Nevertheless, project of SO3.1 in

[56] European Commission (2000) "*Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*", 69 pp

		Natura 2000 sites, would need of precautionary assessment to avoid possible interference with coastal protected habitat and species.
	Specific structure and functions of the area necessary for its long-term maintenance	No interference with habitats structure or function is expected
	Conservation status of its typical species	No interference with the conservation status of species is expected
Disturbance of species	Population dynamics	No event which could contribute to the long-term decline of species populations is expected
	Natural range of the species	No interference with the natural range of species is expected
	Availability of habitat for the species	No reduction of habitats is expected

Conclusion

Without precision on actions and project locations, it is difficult to accurately estimate the Programme effects on the Natura 2000 network.

On the whole, negative significant incidences are not expected from the Programme to Natura 2000 network. Therefore, in order to secure the objective of biodiversity preservation in 2000 Natura sites, it is suggested to introduce eco-conditionality criteria in the project selection. To go through the selection process, projects should demonstrate they have no significant effects on any Natura 2000 site, e.g. through filling in a streamlined form on this issue. This is of peculiar importance in action of climate change mitigation of SO 3.1.

In addition, the introduction of criteria on strategic project of SOs 2.1 and 2.2 (tourism) could help to avoid disturbance to protected species.

Under these conditions, the CBC Programme will not bring damage to habitats and species of Community interest for which conservation objectives have been set up and Natura 2000 sites created.

PART IV -RECOMMENDATION FOR A BETTER ENVIRONMENTAL INTEGRATION

7 MITIGATION AND ORIENTATION MEASURES

The CBC Programme is devoted to cooperation in pursuing sustainable objectives and it has mainly positive effects on environment. The negative effect pointed out in the assessment can be easily avoided if adequate measure will be taken in the Programme implementation.

The assessments carried out for the SEA show that some opportunities in the Programme can be strengthened. In addition to measures aimed at mitigating negative effects, we propose measures to enhance the environmental performance of the Programme and to reinforce the inclusion of several environmental issues.

The measures submitted to the Programme drafters can be divided into:

- Mitigation of negative effects, including the implementation of additional specific activities or actions to avoid, remove, or off-set the adverse effects;
- Orientation of Specific Objectives (SOs) or actions; through the proposal of alternative instruments or tools to be promoted by the Programme;
- Green selection criteria, with the objective of improving the sustainability of projects co-financed by the Programme;
- Provisions for the implementation phases, including guidelines to be used by applicants during the preparation and management phases of the projects or the definition of specific environmental monitoring measures (see section 7.1 below).

In the following section we propose a brief description of measures selected to reduce possible negative effect and of recommendations and suggestions to improve integration of environmental topics in the Programme.

7.1 MEASURES TO PREVENT REDUCE AND OFFSET ADVERSE EFFECTS

The mitigation measures are directly linked to environmental negative effects assessed in previous sections.

As anticipate, the OP has mainly positive effects. The negative effects assessed, often were based on a not clear definition of the action included in the OS. Consequently, the mitigation measure proposed aim to clarify the mechanisms of realization of the OS.

Axis	SO	Assessed effect	Mitigation Measure
PA 2	SO2.1	Possible not significant negative effect on use of resources (energy, water and waste production) and on ecosystems (included marine ones) from tourist flows	Make explicit in the OP the instruments able to grant the sustainability of tourism increase.
			In project selection, specify criteria for the sustainability of tourism, especially for tourism in natural areas (management and monitoring plan for sustainability, reduction in natural resource consumption, biodiversity conservation, waste management system, more efficiency in energy used, promotion of renewable energy)
PA 3	SO 3.1	Possible negative effect coming from realization of coastal defence interventions	In case of infrastructures or other action on coastal defence, it is necessary to include in the OP specific measures dedicated to landscape and marine ecosystem conservation
PA4	SO4.1	Possible negative effects from increment of traffic flows in term of air pollution, GHG emission and pressure on marine ecosystem	Make explicit in the OP the instruments able to grant the sustainability of transport increase

7.2 MEASURES TO PROMOTE, DIFFUSE ENVIRONMENTAL BEST PRACTICES

In addition to the mitigation measures, in the following table are proposed indications finalized to improve the environmental performance of the Programme.

Axis	SO	Orientation Measure	Expected contribution to environmental sustainability
PA 1	SO 1.1	In the project selection, promote the blue and green economy	Enforcement of the not significant positive effects assessed on use of resources

PA 2	SO 2.1	The Programme should enhance the attention to the marine environment (with its natural and cultural assets), that is the principal shared resource of the CBC area	Positive effects of the OP on marine ecosystem will be enforced
PA3	SO 3.1	The Programme should maximize the synergy with the hydrogeological planning instrument existing, verifying the coherence with proposed projects	Enforcement of expected results in risk management

As discussed in Section 6.1, OS1.1 is not addressed to sustainable improvement of SME's: even if the blue economy is mentioned in the description of the OS, it is not clear, from the action listed, how much the OP will intend to sustain and promote green or blue economy. Adequate selection criteria in the selection of projects will aid to enforce possible positive effects.

The added value of cross-border cooperation on tourism would be linked to shared elements of cultural and natural heritage. The main shared element for the CBC area is the marine ecosystem (with its cultural and natural assets), that is not directly addressed by the OS2.1. The suggestion is to enhance the attention (in the OP draft) to action on this context.

OS 2.1 and 2.2 Main critical aspects In general, it is not fully clear what is the added value of cross-border cooperation Programme in this field. Cultural and natural heritage have not evident shared elements (for geographical and historical reason), with the exclusion of maritime ecosystem. Instrument able to grant the sustainability of tourism increase are not pointed out.

PART V – FOLLOW-UP FOR THE IMPLEMENTATION PHASE

8 PROVISIONS FOR AN ENVIRONMENTAL MONITORING SYSTEM

In accordance with Article 9(1) and Article 10 of SEA directive "*Member States shall monitor the significant environmental effects of the implementation of plans and Programmes [...]*"[57].

The monitoring part of the Strategic Environmental Assessment aims at setting the adequate framework for an effective follow up of unforeseen changes in the environment arising from the Programme implementation. "*Monitoring allows the actual effects of the plan to be tested against those predicted in the SEA and helps to ensure that problems which arise during implementation, whether or not they were originally foreseen, can be identified and future predictions made more accurately.*"[58]

Art. 10 of the SEA Directive says that monitoring can be split into the following main steps:

- Selection of an adequate set of indicators;
- Procedures and responsibilities (governance).

Following this indication, here are described:

- the monitoring system to be implemented in the phase Programme implementation;
- the list of environmental indicators to include in the monitoring system of environmental effects, with targets set out to reach the environmental objectives of the area;
- the authorities to involve in the monitoring system e.g. national or regional Environmental Authorities.

8.1 PROGRAMME INDICATORS

Three categories of indicator are used in an environmental monitoring system:

- Descriptive indicators;
- Performance indicators;
- Result indicators.

Descriptive indicators are collected in the context analysis section. They are used to describe the initial state and, through monitoring, they could show variations in the environment over 2014-2020. Information to quantify descriptive indicators can be obtained directly from national

[57] SEA Directive 2001/42/EC
[58] EC (2005) The SEA manual. A Sourcebook on Strategic Environmental Assessment of transport infrastructure plans and programmes, 79p.

environmental agencies, or public and private organizations engaged in producing and communicating environmental information to the public. It is important to underline that the SEA monitoring system has to contain only indicators relevant for the area and for the issues addressed by the Programme.

Performance indicators measure the contribution of the CP to environmental objectives. They show how much the change in environmental component can be attributed to the CP.

Result and output environmental indicators complete the set of indicators included in the structure of the CP. They highlight implementation of the CP itself in its environmental dimension. They can contribute to understanding the CP's environmental performance.

In the following a first proposal of indicator is drafted. Public consultation and decision making process, and the further implementation of the CP itself, will help to adequate the system of indicators to the need of SEA monitoring.

In Table 28 is presented a sub-set of the state indicators used in the description of environmental context: here, only indicators concerning environmental issues interested by the OP have been included. Proposed environmental indicators of results and performance are listed in Table 29. Environmental result indicators are (where possible) derived from Programme results, while performance indicators will be defined and quantify under the *ongoing* evaluation of the CP.

Table 28 – First proposal of descriptive indicators

Environmental issues	Descriptive indicator	Source
Climate change adaptation	Coastal erosion, Flood risk, desertification	Regional and National EA
Climate change mitigation	GHG emission	EEA
Natural resources	Natural and semi-natural ecosystem	EEA
Water quality	Inland water quality status	EEA, Regional and National EA
Water management	Water consumption	Regional and National EA
Marine Ecosystem	Marine water quality	EEA, Regional and National EA
Air quality	Air pollution	EEA, Regional and

		National EA
Soil and landscaper	Artificial soil	EEA

Table 29 – First proposal of results and performance indicators

S.O.	Expected interaction with environmental resources	Environmental result and output indicator*	Indicator included in the OP monitoring system	Environmental performance indicator	Source
S.O.1.1	Environmental sustainability of SME	Number of projects on innovation regarding Environmental sustainability	NO	Contribution of SO to reduce the use of primary resources from SME (tonnes reduction per year)	on going Evaluation
S.O. 2.1	Pressure of tourism on natural resources	Number of project on sustainable tourism	NO	Increment of sustainable tourism (tourists/year in sustainable touristic infrastructures)	
	Valorisation of natural and cultural capital	Number of (new) valorized sites	YES	Contribution of the OP to the valorisation of natural and cultural resources (number of visitors/year)	
S.O.3.1	Improvement of climate change adaptation	Number of regional / national Action Plans enhancing and safeguarding water landscapes (including marine ones).	YES	Contribution of SO to enhance the capacities of public authorities to minimize/prevent natural risk (ha of areas covered by an efficient risk management system)	
S.O.3.2	Reduction of GHG emission	Number of local /regional / national plans for energy efficiency implementing the energy efficiency Directive	YES	Contribution of SO to reduce fossil energy dependency and CO2 emissions	
S.O.4.1	Pressure on air quality and marine ecosystem for implementation of cross-border transport	Number of regional and national agreements for cross-border sustainable connection of passengers and freight transport systems and multimodal mobility solutions	YES	Change (increase/reduction) in the cross-border maritime transport	
	Interaction with	Number of pilot and demonstration	Partially		

	ecosystem from realization of small infrastructures	projects with realization of infrastructure			

In addition to the indicators proposed above, it is suggested to include indicators able to monitoring the contribution of the Programme to the Blue Growth Strategy. Considering the nature and the action included in the CBC Programme, it could be appropriate to develop indicators liked to the First and Second Pillar of the strategy, as in the example below.

Pillar	**Topic**	**Proposed indicator**
1. Develop sectors that have a high potential for sustainable jobs and growth	Coastal tourism	Number of project developed in coastal tourism
2. Sea basin strategies to ensure tailor-made measures and to foster cooperation between countries	Marine knowledge	Number of project finalized to improve access to information about the sea
	Maritime spatial planning	Number of project concerning maritime spatial planning finalized to ensure an efficient and sustainable management of activities at sea

8.2STRUCTURE AND FUNCIONNING OF THE SEA MONITORING SYSTEM

The procedural aspects involve the collection and processing of data, its evaluation and interpretation and consideration of the consequences. It takes place at Programme and project levels.

The main tasks in defining the monitoring system at Programme level are, first, to attribute responsibility to the different phases and, second, to design the framework for collection and reporting of indictors.

The following table proposes responsibility for each task. If a monitoring team is created (inside the Management Authority/JTS), it could be supported by National and Regional Environmental Authorities (for some tasks), the JTS, the Programme Managing Authority and have input from a future evaluation team.

Table 30 - Monitoring tasks' responsibilities

TASKS	RESPONSIBLE
Data collection	Monitoring team; JTS/MA/EA; Evaluators
Data processing	Monitoring team; JTS/MA/EA; Evaluators
Interpretation and Evaluation	Monitoring team; JTS/MA/EA; Evaluator
Conclusion (decision making)	Decision maker (MA, Monitoring Committee)

Even though Directive 2001/42/EC does not contain any specific stipulation on how to report on the monitoring process and its results, reporting is important at the following stages:

- When defining objectives
- When evaluating the first results;
- After Programming.

The first two allow re-adjustment of the Programme while the third gives information about the overall performance and environmental impact of the Programme.

Environmental impact information lacking at the Programme level, including some performance indicators, will be collected at a project level during the *on going* evaluation of the Programme. This should only occur at a defined stage of implementation, with particular regard to the early phase of project preparation and to conclusion of the project. Monitoring environmental effects at project level should consider:

- Embedding information collection in the routine monitoring activities of the Programme to address only crucial information not available at any other level;
- Collecting information using predefined forms (see below Table 31) and guidelines provided to project partners for homogenous information collection and to enable indicator aggregation at Programme level;
- The project must obviously comply with environmental legislation and obligations derived from European and national normative frameworks; thus project team leaders should be required to draft their final report to illustrate how they took normative aspects and other sustainable goals into consideration.

Table 31 - Template for the evaluation of environmental impact at project level

Environmental issues	Description of environmental	Intensity of potential environmental effects

	effects	Strong	Medium	Low or not significant
Water				
Soil				
Biodiversity				
Air-quality				
….				

All information collected at different levels will be included and analysed in an environmental report, periodically drafted by the monitoring team and made available for decision making to the JTS and Managing Authorities. Such a report should be discussed in monitoring committees, especially during the Programme mid-term review and decisions made regarding re-Programming or adjustment of the Strategy in order to reach a more satisfactory sustainable development of the area under the cooperation objective.

The environmental monitoring and evaluation system will be fine-tuned in the evaluation plan of the Operational Programme, in which details will be provided regarding: evaluation questions and environmental issues to be addressed, methodology to be used, target groups and stakeholders involved in the evaluation activities, products delivered and activities for dissemination of results.

PART VI – CONCLUSION

9 INFORMATION OF POTENTIAL ALTERNATIVES AND JUSTIFICATION OF THE PROGRAMME CHOICES

Directive 42/2001/CE in article 5(1) and article 9(1b) requires an analysis of the alternatives and a justification of choices made.

The risk of significant negative effects means alternatives must be considered within the Programme to give decision makers the opportunity to select options which eliminate or reduce environmental impacts and which improve the global environmental footprint of the programme.

Alternatives have been considered in two ways:

- A baseline scenario "zero-option" considers an absence of the Programme over the 2014-2020 period. In section 3, environmental trends are simulated without implementation and a picture of the environmental situation at the 2020 horizon drawn;
- Three different hypothesis for the allocation of resources have been considered in the assessment of environmental effects; this has allowed to compare three scenarios in terms of possible environmental effects.

Compared to the base scenario, the effects of the Programme are mainly positive (see section 6). The proposed Strategy contributes to the improvement of environmental conditions in the cooperation area. Possible negative effect can be reduced or avoided through the proposed mitigation measures. Comparing different scenarios for allocation of financial resources, results that the chosen strategy represents a compromise between the needs of CBC area and the consequences on environment.

In conclusion, the current strategy proposed must be considered as a good alternative from an environmental point of view, compared to other Programme options discussed by PPG members during the preparation phase.

10 QUALITY OF INFORMATION AND RATIONALE FOR ANALYSIS

The underlying information in this report comes from official statistics and documents identified during the scoping consultation with the EAs. Data from European statistics institutions (European Environmental Agency and Eurostat) and available at Nuts 3 levels were often lacking. The analysis was also limited in many cases by the difference in quality, time period covered and scale of information provided by the four different national statistical systems.

Nevertheless information at Nuts 3 level has been collected for the whole cooperation area when available. Information at Nuts 2 level has been used when data provided by different national systems and different levels within the same statistical system was missing.

An additional difficulties in data collection is represented by the fact that Montenegro and Albania are not yet fully integrate in the environmental indicators managed by the European Environmental Agency or by other agencies of the European Union.

Information with a cross-border format was considered first. Other national statistics were used, illustrating specific aspects or giving a clear picture on some issues. Because data from different statistical sources were aggregated, the indicators describing the cross-border environmental context must be considered as an approximation.

APPENDIX 1 – NON TECHNICAL SUMMARY

APPENDIX 2 – PRELIMINARY REPORT