Ministry for Development and Competitiveness

Managing Authority of "European Territorial Cooperation" Programmes

"The Ex-Ante Evaluation and Strategic Environmental Assessment of the new Cross-Border Cooperation (CBC) Operational Programme Greece- Italy (GR-IT) 2014-2020"

2nd Deliverable

Draft - Strategic Environmental Assessment

"Greece - Italy" 2014-2020

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Acronyms

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CF	Cohesion Fund
DPSIR	Driving Force - Pressure - State - Impact -Response
E.O.	Environmental Objective
E2020	-Europe 2020 Strategy for smart, sustainable and inclusive growth
ERDF	European Regional Development Fund
EAP	Environment Action Programme
EC	European Council
EEA	European Environment Agency
EMFF	European Maritime and Fisheries Fund
EP	European Parliament
ERDF	European Regional Development Fund
ESB	European Social Fund
ESIF	European Structural Funds and Investment
ETC	European Territorial Cooperation
EU	European Union
EUSAIR	EU Strategy for the Adriatic – Ionian Region
GDP	Gross Domestic Product
GHG	Greenhouse gases
GR	Greece
IBAs	Important Bird Areas
ICT	Information and Communication Technologies
In.P	Investment Priority
IPPC	Integrated Prevention Pollution Control
IUCN	International Union for Conservation of Nature
JMD	Joint Ministerial Decision
JPC	Joint Programming Committee
MA	Managing Authority
MED	Mediterranean Space
mIBAs	marine Important Bird Areas
MSFD	Maritime Strategy Framework Directive
NSRF	National Strategic Reference Framework
OP	Operational Programme
P.A.	Priority Axis
PAF's	Prioritized Action Frameworks for Natura 2000
pcGDP	Gross Domestic Product per capita
PD	Presidential Decree
R & D	Research and Development
R & I	Research and Innovation
RAE	Regulatory Authority for Energy
RDP	Rural Development Programme
RES	Renewable Energy Sources
RIS	Research and Innovation Strategies for Smart Specialization
S.O.	Specific Objective
SAC	Special Area of Conservation
SCI	Sites of Community Importance

SEA	Strategic Environmental Assessment
SMEs	Small and Medium Enterprises
SPA	Special Protection Area
T.O.	Thematic Objective
TEN-E	Trans-European Energy Networks
TEN-T	Trans-European Transport Network
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

GLOSSARY OF TERMS

Greenhouse gases, or GHG. This is the English abbreviation of greenhouse gas, which is a gaseous component of the atmosphere that contribute to the greenhouse effect, ie the phenomenon of global warming. Greenhouse gases absorb longwave earth radiation and re-emit radiation in the thermal infrared range, heating in this way the surface. The main GHG are carbon dioxide (CO2), methane (CH4) and ozone (O3).

Conditionality or ex ante conditionality is defined by the General Regulation (Article 19) as "Specific and precise predetermined critical factor, which is a prerequisite for effective and efficient implementation of the specific target investment priority or priority of the Union, and has direct relation to this implementation and direct impact on it". There are two forms: A) Thematical: linked to the Thematic Objectives and investment priorities which are about to be funded under the new NSRF and Programmes and B) General: linked to horizontal issues of the implementation of the Programmes.

Priority Axis: an amount of Specific Objectives that establish a comprehensive strategy in order to fulfill a Thematic Objective.

Response. The measures proposed by SEA in order to minimize the pressure regarding its extent, duration and / or its risk.

Avoidance. In general, the evaluation, prevention and mitigation of the impacts of a plan or programme is the core of the SEA process. Avoidance is used to express the action when a project should not be carried out or should be transferred or managed in such a way in order to avoid impact.

Specific Objective: The purpose to which the investment priority or priority of the Union contributes in specific national or regional context, through actions or measures that are taken under priority.

Ex-ante evaluation. This is the process of assessing the overall impact of a plan or programme prior to its release. It is conducted in parallel with the preparation of the plan or programme in order to inform it regarding the possible effects in order to optimize its implementation.

Investment Priorities: Specific priority areas that are set out in the Regulations for each Fund and for each Thematic Objective.

Impacts or Synergies. The state of the environment is based on pressures and driving forces that act on it, which in turn, shows impacts or synergies on human health and welfare and on the social-economic fabric of society. The impacts are referred to negative results, while synergies to positive.

Indicators. Indicators are an important part of the assessment and impact monitoring system and concern the degree on which the environmental objectives are in accordance with the recommendations of the plan - programme. The standard form of an indicator is displayed in a

datasheet with informantion about: the definition of the indicator, its coherence with the environmental objective, its detailed description, the method of calculation, the measurement units and periodic measurements of time - calculation.

Thematic objectives. Objectives that the programmes should implement. These objectives are 11 and are referred to the regulations of the Funds.

Driving forces are referred to the pressures that are factors of change, including population growth, consumption, poverty and are related to socio-economic and political situation. Often these driving forces include policy instruments, for example the incentives for job creation and land development regulations are related to the driving force of urban development. The knowledge regarding the implementation of the driving forces and the human action guarantees the successful implementation of SEA.

Mitigation. Mitigation, as an important part of SEA, is used for measures that reduce or at least offset any significant adverse environmental effects.

SEA Directive. The Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2011 on the assessment of the effects of certain plans and programmes on the environment.

Integrated Management. It is a term that is increasingly used in recent years and includes long-term strategic vision by linking different policies at different administrative levels in order to ensure consistency. The integrated management involves common address of relevant issues and is based on a holistic approach that recognizes the key challenges, the sectoral collaboration, the engagement with all stakeholders and the integration of local, regional and national policies.

Coastal Zone. The term of coastal zone is not defined by geographical accuracy and depends on various factors. A definition is given in Agenda 21, in Chapter 17 and notes that the coastal zone is the transition zone between land and sea. Often varies in relation to location or even depending on each expert that defines it (scientific field), while its width may be determined by the interaction of marine and terrestrial coastal processes.

Operational Programme (OP). The present SEA is referred to the OP Greece - Italy. Generally, the OPs highlight particular characteristics and needs of each spatial unit and contribute to cover the national strategic objectives complementing the sectoral programs. In particular, they cover a common core of interventions regarding social infrastructure, accessibility and environmental projects at local level, policies for sustainable urban development, culture, health and social solidarity, etc.

Pressures. It is a common term in SEA, together with the driving forces, the state of the environment and impacst. It is referred to either natural or anthropogenic pressures. Direct pressures on the environment are considered the polluting emissions, mining resources, etc.

Objective. It is an expression of what is sought by the plan or programme, while specifying the desired direction of change as a result of the proposed interventions.

Strategic Environmental Assessment. It is a general term that is usually defined as a process for assessing the environmental impacts on strategic decision making at a higher level or just preceding that of the individual project, ie to policies, plans and programmes. The present SEA is used to refer to the type of environmental assessment that is required by the CMD 107017 / 08.28.06.

Plan or Programme. It is referred to plans and programmes of the CMD 107017 / 28/08/06 (GG 1225V / 05.09.06). As plan is usually referred a set of coordinated and timed objectives for the implementation of a policy and as programme a set of projects and activities in a particular area.

Cumulative or synergistic. It is referred to the assessment and evaluation of impacts on the environment by the implementation of the plan or programme. As cumulative impact is characterized the effect which cumulatively with other effects may have a significant impact on the environment. Otherwise, by itself, it does not lead to any significant effect. As synergistic impact is characterized the one that it is not only cumulative, but also leads to a further effect, positive or negative.

Carrying Capacity. This is a complex and multifaceted term, for which, while it has given a general definition, however, it can not be calculated. Generally, the carrying capacity is the number of species that can be maintained indefinitely by an ecosystem without being degraded. This means that any management on artificial ecosystems must not infringe the carrying capacity, ie the limit of natural ecosystems (land, water, marine), causing damage and thus environmental problems.

1. NON TECHNICAL SUMMARY

The present Strategic Environmental Assessment Report of the European Territorial Cooperation Programme Greece - Italy 2014-2020 is prepared in the context of the project "Consultant for ex ante evaluation and strategic environmental assessment of Territorial Cooperation Programme Greece - Italy 2014-2020" and in accordance with the contents of Directive 2001/42/EC for the environmental assessment of certain plans and programs. This project was assigned by the Managing Authority of the Operational Programmes of the Objective "European Territorial Cooperation" of MINISTRY OF DEVELOPMENT AND COMPETITIVENESS, to the company ADVICE, Business Consultants SA.

1.1 The process of SEA (in summary)

The Strategic Environmental Assessment is an ex ante evaluation of the impacts (positive or negative) of the implementation of the programme on environment. The SEA process includes the preparation of the Strategic Environmental Assessment Report (SEA Report), its consultation, its submission and approval by the national authorities and the establishment of a monitoring and evaluation system during the implementation of the programme's impacts. It is an autonomous process in relation to the programme's design process and is performed in parallel. The SEA (according to Directive 2001/42/EC) is a mandatory stage of consultation of the Programmes.

The aim is to ensure that the new programme would contribute positively to achieving a high level of environmental protection, and that it supports the objectives of the Member State and the EU in order to achieve sustainable development.

This aim is accomplished by the following:

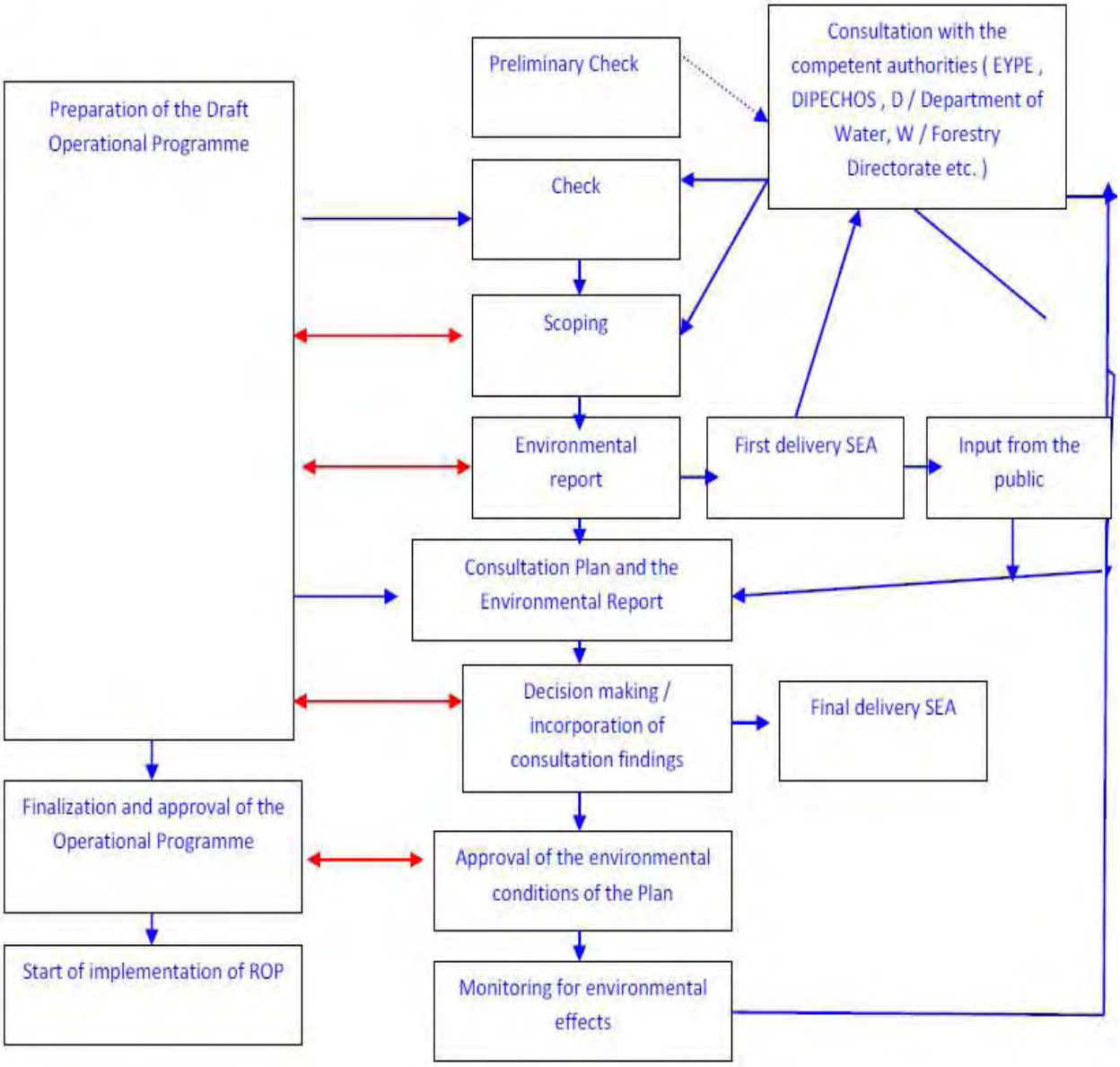
By setting environmental parameters under which the programme will operate.

Identify, describe and evaluate the likely significant environmental effects arising from the implementation of the programme.

By taking into account reasonable alternatives.

In summary, the procedure is described in the figure below and include:

Figure 1: Schematic presentation of the SEA process



The present deliverable is the Environmental Report of the Programme or otherwise its Strategic Environmental Assessment Report.

1.1.1 The Strategic Environmental Assessment Report

The Environmental Report is organized into an issue (Strategic Environmental Assessment Report – SEA Report), which consists of 10 chapters (plus an appendix) in accordance with the contents described in the notice (SECTION 5. Strategic Environmental Assessment) and in accordance with the requirements of Paragraph 5 of Annex I of Directive 2001/42/EC and includes the following chapters:

1. **A non-technical summary of the SEA:** Summarizes the main findings and highlights the key decision points in an understandable way by non-scientific public.
2. **General information:** Details about the managing authority of the programme and about the experts of SEA Report.
3. **Aims and Objectives of Programme**: The scope, aims and objectives of the programme are analyzed. Also, it is included: a) the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme, b) the way those objectives and environmental considerations have been taken into account during its preparation, c) its relationship with other relevant plans and programmes.
4. **Description of Programme:** Includes a brief description of the objectives, priorities, actions and expected results of the programme.
5. **Alternatives:** Describing the reasonable alternatives, including: a) the zero solution, b) the reasons for selecting the alternatives dealt with, c) the documented environmental reasons for selecting the proposed project or programme over other alternatives.
6. **Description of the current state of the environment:** According to SEA Direvtive, this section provides information about: a) the aspects of the current state of the environment in the study area and the likely evolution thereof without implementation of the plan or programme, b) the environmental characteristics of areas likely to be significantly affected within the study area, c) any existing environmental problems which are relevant to the plan or programme, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC an 92/43/EEC.
7. **Assessment, evaluation and management of the environmental effects of the Programme:** The likely significant effects on the environment are identified, assessed and evaluated, especially primary and secondary, cumulative, synergistic, short-, medium-, long-term, permanent and temporary, positive and negative effects in areas such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and

archaeological heritage, landscape and the interrelationship between the above factors. This chapter describes of how the assessment of environmental impact was undertaken. Also, it is described: a) the recommendations / guidelines / measures to prevent, reduce and as fully as possible offset any significant adverse effects on the environment and b) the monitoring system of significant environmental effects of the implemention of the plan or programme.

8. **Information of Regulatory Act**: This chapter gives details of the regulatory act of the above: a) the recommendations / guidelines / measures to prevent, reduce and as fully as possible offset any significant adverse effects on the environment and b) the monitoring system of significant environmental effects of the implemention of the plan or programme
9. **The difficulties encountered in compiling the required information**
10. **Basic studies and surveys**: Concerns additional basic studies which are strictly necessary for the approval of projects or activities.
11. **Appendix**

1.1.2 Presentation of the methodology of impact assessment

The following summary, of how the assessment of the effects was carried out, is made in order to be fully understood the structure of the report and the description of how the assessment of results was undertaken.

The approach that was adopted is based on a significant number of advisory texts, and instructions relating to the Strategic Environmental Assessment in Europe and especially in the Cohesion policy. The structure of the report was based on the following steps:

Step 1: Position the context and Objectives

This process is referred in **Chapter 3,** where the objectives of the programme (including environmental objectives) are initially presented and in addition the relevant policies, plans and programmes are recognized and presented that include relevant objectives or commitments on the environment which may affect or be affected by the implementation of the Programme.

Under recognition of these policies, many of them are drawn hierarchically (eg Directive on Water, Plan for Water Resource Management of Water District) by "theme" (eg water, Biodiversity, Climate Change). In addition, some general questions are posed that formed the basis of the Report for the scoping, ie the definition of what should be investigated and

to which direction in order to provide all the main issues regarding the environment and sustainable development. Thus, the final 11 Environmental Objectives of the SEA are formed. **TABLE 11. SEA Environmental Objectives - end of Chapter 3**

Each target is a point to which each type of actions and Specific Objectives will be evaluated based on qualitative or quantitative data to assess the environmental performance. For each objective listed in Table, some specific questions - exploring issues are identified which specify the evaluation of performance.

It is noted that the identification of environmental objectives is not required for the Report, however, their use has been chosen as the most appropriate tool for the study and interpretation of the impacts (positive or negative).

Step 2: Presentation of the Programme

The aim of this step in **Chapter 4** is to present the activities of the programme (Specific Objectives) in order to describe the individual projects, activities, processes that will be implemented and that will cause environmental impacts / synergies through their implementation or operation.

Step 3: Presentation of the current state of the environment

The changes that the programme will cause to the environment depend on the state of the environment before it begins. The current state determines first of all the sensitivity of this area in different types of activities that can be developed in it. Based on this, it can be assessed whether an activity or a project causes intolerable consequences, if there is the ability of "absorbing" them or it has reached saturation. Meanwhile, the current state could show what thematic of the environment is more critical, to which areas specific projects or activities should be directed, what deficiencies in infrastructure or environmental management are needed in order to prevent or reduce the impact. The presentation of the current state of the environment is the subject of **Chapter 6.**

Step 4: Estimation of Synergies - Coherence

It should not be forgotten that the programme itself, has an important environmental dimension and that its aim is not only to fund projects that will have the least - acceptable impact on the environment, but to help improve the environment. For this reason, before the impact assessment, which is the main part of the Report **in section 7.2.1,** the coherence and clarity of the objectives of the programme with the general objectives of environmental policy are identified. The assessment is qualitative and, except the identification of how a specific objective is related to the Agenda for the Environment, shows the issues with positive results in the context of the impact assessment that follows.

Step 5: Impact Assessment

Impact assessment is the most important part of the Report and is identified through the use of Environmental Objectives. This is done as follows:

1. In the context of Priority Axis, for each environmental objective (E.O.), are assessed the possibility, the direction (positive / negative / neutral), the duration and the reversibility of changes in the status quo (of the E.O.) that are expected to occur by actions to achieve each Specific Objective.

   The assessment is presented by using symbols and tables. For each positive or negative judgment, there is documentation in the text preceding each table. (Neutral judgments are not documented because it is estimated that there is no relationship of objects eg the PC purchase is not related to the Landscape Protection).

2. In terms of thematic environmental policy, as defined by EU Directive 2001/42/EC of the SEA and by the Environmental Objectives (Biodiversity, Climate, Waste Management etc), the cumulative effects and the transboundary dimension are evaluated. The main aim of the SEA process is to assess the synergestic results of projects / activities with different characteristics, which cause changes in the environment and will be implemented in a specific period (2014-2020) and in a particular area (Region).
   By using tables for each theme, impacts are summarized that have been assessed above (point 1 of Step 5). Apart from this, the possibilities of preventing or reducing (of negative impacts), and the transboundary or inter-regional dimension of the impacts are described.

Step 6: Measures, recommendations and guidelines for preventing and reducing the impact

Based on the estimated impact, the team makes proposals, according to which, it is possible that the negative effects can be predicted or reduced and the positive effects can be maximized. The measures, recommendations and guidelines may include:

- Obligations or conditions that should be met in order to approve projects / proposals in the programme.
- Management actions.
- Specific criteria for the selection of actions which will give weight to environmental performance.
- Studies / surveys that will precede the activation (where there is uncertainty).

It should be noted that any measure, recommendation and guideline which will be proposed and will be identified as regulatory act is complementary to existing environmental

permitting, which is valid for each project / activity regardless of the approval in the Programme.

Step 7: Monitoring System

By far, the potential negative impacts are identified and practices and measures to minimize them are proposed. Therefore, monitoring system is used to initially validate or correct the theoretical results of the assessment of Report compared with the actual environmental impacts arising from the implementation and secondly to assess whether the proposed measures have been effective in order to correct them.

1.1.3 The consultation process and the integration of the consultation findings and decision-making

The precise identification and analysis of views is an obligation of the Consultant and a key parameter for the success of SEA. The process aims at not only correcting the programme (ie to control its legitimacy with respect to environmental policy), but also at integrating views and suggestions that may increase its effectiveness and efficiency. The integration of the consultation findings includes two steps:

- Creating a system for collecting and recording information
- The implementation of a process of evaluation and integration of information

The record and the evaluation of the results of the consultation will be encrypted and promoted to the Contracting Authority for decision making, as shown in the following table.

Name of Institution / Agency or Person	Notes	Point Tracking in Programme Document or SEA Report	Reply of consultant	Recommendation to the Contracting Authority

The results of the consultation will be integrated, as specified in the relevant Annex of the updated SEA (information regarding the consultation with the public and environmental authorities, in accordance with Article 6 of Directive 2001/42 / EC).

The decision-making process regarding the findings of the SEA, is a task that will be executed by the contracting authority, in partnership with the co-authorities. These decisions and their results will be recorded by the Consultant to be listed in Section 8 of the (updated) SEA.

Then, some key important issues that are necessary for the Report are indicated briefly by each chapter that is extensively analyzed in the SEA.

1.2 Aims and Objectives of Programme

The overall objective of Territorial Cooperation Programme Greece - Italy 2014-2020 is to support the strategy of cross-border cooperation for a more prosperous and sustainable region in the Ionian Sea. Emphasis will be given in developing the foundations for a dynamic economy that will promote smart, sustainable and inclusive growth, with objective to improve the quality of life for those living in the area.

1.3 Description of Programme

To achieve the objectives, the programme has chosen to intervene in four Priorities (Thematic Objectives – T.O.):

TO1: Strengthening research, technological development and innovation.

TO3: Improving the competitiveness of SMEs

TO6: Protecting the environment and promoting resource efficiency

TO7: Promoting sustainable transport and removing barriers to infrastructure networks.

At each T.O., one or more investment priorities are selected that best approach the achievement of the stated objective and are based on the needs and the potentials of the area. This choice is reflected in the following figure.

Overall, the expected results of the programme are:

- Improving accession to research results and technology transfer for businesses, especially SMEs
- Developing cross-border clusters for acqualcuture, Agrofood, cultural and creative industries and other sectors
- Adoption of innovative financing tools and approaches
- Improving technological and managerial competences for innovative entrepreneurship
- Facilitating accession for the targeted financing of innovation and of internationalization of SMEs
- New innovation support services
- Creation of new incubators in priority sectors, promoting of innovation and allowance of best practice exchange.
- Developing innovative tools for natural and touristic destinations etc (Up, web portal etc)
- Enhancing infrastructures and services for disabled people in natural and historical sites
- Implementation of common management plan to improve heritages sites
- Developing new actions and methods for the prevention of pollution
- Spread touristic information by means of the new common technologies
- Developing specialized internship in SMEs in order to to tackle school dispersion
- Development of new measures and methods for the prevention of pollution
- Disseminating tourist information with the help of new technologies
- Development of connections between specialized training and business to tackle the spread of the school
- Adoption of common protocols for the prevention of risks
- Completing and updating information on the biodiversity of natural areas of the programme area
- Reducing pollution from industrial discharges by adopting technologies for pollution prevention
- Presenting a friendly environment management in all industries
- Standard methods of clean production and Certification

- Facilitating boarding and disembarking with particular attention to passengers with special needs
- Improving services in transport infrastructure
- Improving the exchange of information on maritime traffic
- Improved security in port operations
- Dissemination of information on transport links via Internet
- Developing innovative transport systems, without impacting on the environment (eg seaplanes electric vehicles, non-polluting transport at sea).
- Enhancing use of renewable energy on public services
- New ecologically sustainable transport systems to reduce pollution
- Strengthening the capacities of actors involved (port authorities, supply chains, SMEs, customs, etc.) in order to minimize the impact of transport on the environment and promote innovation for sustainable and non-polluting transport at sea.

1.4 Alternatives

The realistic alternatives include: a) the zero scenario, ie the non-implementation of the programme, b) the implementation of the pre-existing strategy (2007-2013), c) the implementation of the proposed document. The latter is considered as the most environmentally advantageous solution, as in the first case it would be impossible to planning the joint action that is required in order to address key environmental issues (that require consultation and coordination), while in the second case it would be difficult to integrate new problems concerning the current requirements for environmental protection and sustainable development.

1.5 Description of the current state of the environment

A key element of the cross-border area Greece - Italy is the maritime area of the Ionian and Adriatic Sea. This area along with the coastal area has a particularly significant biodiversity that concerns:

- endemic animals and plants that thrive mainly in coastal areas.
- the birds using the area as a migratory path and as part of breeding and wintering grounds, especially the many and the rich wetlands.
- Marine fauna, where for a number of endangered or vulnerable species the area is an important habitat. These species include the Mediterranean seal monachus monachus, the turtle careta careta and some fish species which are threatened by overfishing or by the pressures exerted by the man on the marine environment.
- The ecological landscape which, in combination with the Mediterranean climate and the geological history of the areas, composes some unique ecological standards as those of Pindos, the peninsula of Gargano, Enos etc.
- The Mediterranean rural - lowland area which is dominated by olives and vineyards.

The main factor shaping the above-mentioned, is the Mediterranean climate that dominates in the region and is characterized by mild winters and dry (but not arid) summers. The change of this climate is a major threat not only to the ecology of the area, but also to the economy and quality of life. Major threats are also the increase of the risk of forest fires and coastal erosion.

Another important risk is associated with the high seismicity of the region, which has historical records, and other recent earthquakes.

Another important issue in the area concerns the management of inland waters. The problems relate to either quantitative or qualitative parameters and are mainly local problems (since there are no transboundary river basin). In marine area, pollution is pointly localized and in some other areas despite the fact that most qualitative variables show a relatively good condition of the environment (much better than those of Northern Adriatic).

As for the issue of air pollution, despite the absence of large urban areas (more than 1 million inhabitants), urban pollution problems are identified primarily due to urban emission sources. One of them concerns the atmospheric pollution caused by ships in port cities.

The area has a particularly important cultural capital certifying connection between the two individual sides. The history of the area is very rich and includes all historic and prehistoric periods, as was the first human colonization of the Parties in Europe. The emergence of cultural heritage is the main challenge for the competitiveness of a sustainable tourism product in the area. The main poles are: four World Heritage sites of UNESCO (Castle del Monte, Trulli Alberobello, the archaeological site of Olympia, the old town of Corfu) and numerous other archaeological sites such as Ancient Dodoni, the ancient temple of Canosa, the city of Lecce , Parga etc.

1.6 Assessment, Evaluation and Management of the environmental effects of the Programme

Overall, the impact screening was performed using 26 criteria that assess the performance in each investment priority / Specific Objectives. Also, by using indicative actions that are outlined in the programme in a total of 11 environmental objectives which are set by the policy framework for environmental protection and sustainable development.

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

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

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

Table 1: Overall table for evaluating the impact of the programme on the environment

	Positive	Mixed	Negative
O.1. "Halting the loss of biodiversity, maintaining the state of ecosystems and if possible improving the characteristics of those who are not in good condition".	8	1	2
O.2. "Preserving the genetic wealth of biodiversity and ecosystem services".	3	3	1
O.3. "Enhancing the adaptation to Climate Change, in order the impacts of Climate Change to be absorbed with the least possible cost".	3		
O.4. "International efforts to mitigate climate change".	12	2	
O.5. "Protecting the health of the population".	8		
O.6. "Balanced territorial development and promotion of a new model of sustainable development".	14		
O.7. "Effective waste management and compliance with the european obligations".	5	4	
O.8. "Protection of the aquatic environment, water management and improving the quality and quantity parameters according to the requirements of the EU Water Framework Directive (WFD) and the Marine Strategy Framework Directive (MSFD)".	8	2	1
O.9. "Protection of residential centers from air pollution and noise."	9		
O.10. "Protection and Promotion of Cultural Heritage and Landscape as a development resource".	5	1	2
O.11. "Protection of soil pollution and conservation of land productivity".	5		1

1.7 Prevention, reduction and mitigation of environmental impacts

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

a) Environmental permitting of projects and activities.

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

- Compliance with the specific emission limit values of pollutant loads and concentrations for air, water and soil in accordance with the applicable provisions.
- The specific limit values of noise.
- Compliance with national or regional planning for the environment, such as waste management plan, the basin management plans of the WFD, etc.
- The suitability of locating in accordance with the approved land use plans and building restrictions.
- Taking into account all the necessary measures that are provided by the legislation in relation to the prevention and reduction of pollution of protected areas, sea and forest.

Apart from the above-mentioned and regardless the priority axis or type of project, it should be taken into account that:

- when an area is included in the network Natura2000, in accordance with Article 6.3 of Directive 92/43/EEC, it should be ensured that: '*Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect on it, either individually or together with other projects, it is should be estimated regarding its impacts on the site by taking into account its conservation objectives*'.
- when an area is characterized as SPA under the Directive on birds, all measures should be taken that are mentioned in the law of both Member States.

b) Specific measures in order to protect the environment.

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

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

- In the process of specifying and selecting clusters, it should be considered to include enterprises that manage products or waste that are produced throughout the value chain.
- The actions of tourism development or enhancement of natural resources within Natura 2000 areas should be consistent with the management plan areas. In cases, where the projects are listed in areas with Management Agency, its opinion is necessary. In any case, it should be documented that the increase of visiting the protected ecosystems for tourism or other purposes does not have impact on the conservation status.
- As for technical projects that are implemented within the coastal marine area and for which there may be a disruption of benthic substrate, it should be considered to prevent and reduce the potential pollution that can be caused by the re-existence of pollutants in the sediment.
- The programme should avoid the inclusion of projects that lead to the forming or opening roads outside of the urban area and in parallel withthe coastline. Where this is technically impossible, these projects of roads should be accompanied by appropriate town planning / regulatory measures in order to prevent the development.

1.8 Monitoring System

The monitoring system of the impacts is necessary, according to the Directive 2001/42/EC, and should be realized on an annual basis through an annual report.

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

2. GENERAL INFORMATION

2.1 The sublect of SEA

According to the contract, the subject of SEA ,that is prepared in the context of the project entitled: **"Consultant for Writing: Report of the ex ante evaluation of the European Territorial Cooperation Programme "Greece - Italy" 2014-2020 and Report for the Strategic Environmental Assessment of the European Territorial Cooperation Programme Greece - Italy 2014 - 2020",** is the Strategic Environmental Assessment (SEA) of the new Programme "Greece - Italy 2014-2020".

The main deliverable of the SEA of Programme "Greece-Italy 2014-2020" consists in an Environmental Report according to Directive 2001/42/EC.

According to Annex I of the SEA Directive, the Strategic Environmental Assessment Report includes the following key elements:

(a) an outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes;

(b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme;

(c) the environmental characteristics of areas likely to be significantly affected;

(d) 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;

(e) 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;

(f) the likely significant effects (1) on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors;

(g) the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;

(h) an outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;

(i) a description of the measures envisaged concerning monitoring in accordance with Article 10;

(j) a non-technical summary of the information provided under the above headings.

It is recommended that the environmental report should be done in parallel with the programme, in order to achieve better integration and to prevent the risk of delays.

The SEA will also include the support for the achievement of the obligations related to consultation of environmental authorities and the public as defined in Directive 2001/42/EC.

The objective of the Report is to evaluate and assess the potential environmental impact of the implementation of the proposed programme, ie the approach of the programme programme in a strategic level and, finally, to select the best choice, between the proposed alternatives, which is based on logic.

Following consultation with the Contracting Authority, the SEA experts will come in contact with a number of organizations throughout the programming period in order to collect information in advance. The types of organizations with which they communicate depend on the theme eg. Waste management, nature protection etc and the number of organizations with whom they come in contact should be manageable.

Considering all the above-mentioned, the Consultant will proceed to a single coherent text - Strategic Environmental Assessment of OP "Greece - Italy 2014-2020", which will accompany the Joint Programme Document in its submission to the European Commission.

Axes of SEA

The Environmental Report should meet the requirements set out in Annex 1 of the Community guidelines. Moreover, the environmental report will form an annex in the report of the ex ante evaluation, which will also include:

a non-technical summary of the information provided in the Environmental Report, as provided in Annex I (j) of Directive 2001/42/EC.

a general description of the programme.

a description of measures decided concerning monitoring system as provided in Articles 9 (1) (c) and 10 of the Directive,

information on consultations with the public and the relevant environmental authorities, in compliance with Articles 6 and 7 of the Directive.

a description of the current environmental state of the eligible area.

assessment and evaluation of potentially significant (particularly primary and secondary, cumulative, synergestic, short- medium and long-term, permanent and temporary, positive and negative) impacts in areas such as:

- ✓ biodiversity,
- ✓ population,
- ✓ human health,
- ✓ fauna,
- ✓ flora,
- ✓ soil,
- ✓ Water
- ✓ air,
- ✓ climatic factors,
- ✓ material assets,
- ✓ cultural heritage including architectural and archaeological heritage,
- ✓ landscape and
- ✓ the interrelationship between the above factors.

In this context, it will also be described how the assessment of the impact of the programme on the environment was made:

- Environmental Impact Assessment of the Programme.

- Useful bibliography

If it is necessary, the Consultantss will also support the preparation of the final statement, which is required by Directive 2001 / 42EE, in order to be published by the European Commission.

2.2 The contracting authority

The contracting authority is the **Managing Authority of Operational Programmes of the Objective "European Territorial Cooperation" of MINISTRY OF DEVELOPMENT AND COMPETITIVENESS,** which acts as the Contracting Authority on behalf of the Joint Planning Committee of the programme.

The Greek and Italian authorities agreed to establish a Joint Programming Committee (JPC) for the European Territorial Cooperation Programme Greece - Italy 2014 – 2020 and its mission is to prepare the programme for approval by the European Commission.

Based on the requirements of EU regulations, the Joint Programming Committe approved the publication of call for proposals.

The Managing Authority of European Territorial Cooperation Programmes is responsible for twelve (12) European Territorial Cooperation Programmes. It hosts the Managing Authority of five (5) bilateral cross-border Programmes. In particular:

- European Territorial Cooperation Programme "Greece-Bulgaria 2007-2013";
- European Territorial Cooperation Programme "Greece-Italy 2007-2013"; and
- Cross-border Cooperation Programme "Greece-Cyprus 2007-2013", all of which are co-funded by the European Regional Development Fund (ERDF)

as well as

- IPA Cross-border Cooperation Programme "Greece-Albania 2007-2013" and
- IPA Cross-border Cooperation Programme "Greece-The former Yugoslav Republic of Macedonia 2007-2013", which are co-funded by the Instrument of Pre-accession Assistance (IPA).

Additionally, the MA is the National Coordinator of all European Territorial Cooperation Programmes Greece participates in. These are there (3) multilateral Cross-border Programmes (Adriatic, co-funded by IPA, and Mediterranean Sea Basin and Black Sea Basin, co-funded by ENPI), two trannational Preogrammes (Mediterranean Space – MED and Southeast Europe), the interregional Programme INTERREG IVC and the INTERACT network, all co-funded by ERDF.

The Managing Authority of European Territorial Cooperation Programmes is an integral part of the Greek Ministry of Development, Competitiveness, Infrastracture, Transport and Networks. Actually, it is that part of the Ministry that pays attention to the wider Hellenic neighborhood, Southeastern Europe and the Mediterranean Sea, as well as the whole of Europe, in order to build and strengthen bilateral cross-border and transnational ties and focus on a balance development on European level.

2.3 The contracting entities

The ADVICE Business Consultants SA was founded in July 2006 and is located in Thessaloniki, on the road October 26.

The company is staffed by experienced and reputable consultants with extensive experience in strategy, organization, human resources management, management of the programmes, regional development and financial services.

In 2007 the company was certified for the quality of services in accordance with the standard EN ISO 9001: 2000.

The 2010 it was certified for quality of services in accordance with the standard EN ISO 9001: 2008 and recertified in 2013.

From its foundation until today ADVICE AE provides consulting services to businesses and organizations in the private and public sector in various parts of Greece and abroad, covering the identified needs for modernization and development of production and administration structures. It has successfully completed many projects by achieving their initial budgets and the specified quality. It provides consulting services in the fields of regional planning and management and has extensive experience in the management and evaluation of national and international operational programmes and projects in the Structural Funds, the requirements of the EU institutions for planning, management, implementation and financing of projects etc.

ADVICE is a consulting company with proven effective and successful contribution to the process of modernization of private enterprises. Its staff have developed a large number of projects relating to t planning, organizing and management of projects for modernization and development of private enterprises, co-financed by national programmes. Our clients are companies from all over Greece that trade in manufacturing, tourism and services.

In particular, the experience of its staff in modernization and the development of private business includes the provision of systematic and specific technical and operational support on Strategy and Market Analysis, Performance Improvement Corporate Operations and Systems, Human Resources and Development funding opportunities.

The company expanded outside Thessaloniki offering a wide network of qualified, experienced associates and collaborated with local consultants in Ioannina, Iraklion of Crete, Larissa, Corfu, Komotini, Cyprus, Bulgaria and Romania.

2.3.1 Project Team

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

Nikolaos Papadopoulos	Chemical Engineer, PhD. Univ .Makedonias specializing in evaluation of development interventions	Project Manager
George Georgiadis	Environmental Scientist M.Sc. Development resources and projects managment	Coordinator of SEA
Athina Kokkali	Marine Scientiist M.Sc Management of coastal areas Msc Tourism management and planning	SEA member
Nikos Koutsomarkos	Planning and Regional Development Engineer, MSc	Sea member Specialist in output and result indicators

3. AIMS AND OBJECTIVES OF THE PROGRAMME

This chapter examines the aims of the programme and its wider objectives. Moreover, according to the contents of Annex III of JMD 107017/2006 this chapter includes:

a) international, Community and national environmental protection objectives related to the programme

b) the manner in which these objectives and environmental issues have been considered in the preparation of the Programme,

c) the relationship with other relevant plans and programs.

3.1 Aims and objectives of ETCP Greece -Italy 2014-2020

The overall objective of Territorial Cooperation Programme Greece - Italy 2014-2020 is to support the strategy of cross-border cooperation for a more prosperous and sustainable region in the Ionian Sea. Emphasis will be given in developing the foundations for a dynamic economy that will promote smart, sustainable and inclusive growth, with objective to improve the quality of life for those living in the area.

This programme is based on the achievements of the previous programming period 2007-2013, taking into account the results of the ongoing evaluation and the ongoing economic, environmental and social challenges in the Ionian sea border between Greece and Italy.

To achieve the objectives, the programme has chosen to intervene in four Priorities (Thematic Objectives – T.O.):

TO1: Strengthening research, technological development and innovation.

TO3: Improving the competitiveness of SMEs

TO6: Protecting the environment and promoting resource efficiency

TO7: Promoting sustainable transport and removing barriers to infrastructure networks.

3.2 Institutional framework and environmental objectives

The programme is implemented between two Member States of EU and is obliged to contribute to the achievement of environmental policy objectives set out both at European level and at the macro-Region level (either referring to the Adriatic – Ionian Region, or in the wider Mediterranean Region).

The aim of the review of the environmental objectives of other policies, strategies and plans in the context of SEA is to ensure that the requirements, commitments and obligations arising from them, have been considered and taken into account in planning process. Also, its aim is to understand how the Operational Programme is included in the framework for implementation of policies to protect the environment and if it sufficiently contributes to the achievement of environmental protection objectives. In addition, this review aims to identify the SEA Environmental Objectives on which the identification of areas and thematics will be based in order to evaluate the impact of the programme in Chapter 7.

3.2.1 European framework for environmental protection and sustainable development for the period 2014-2020

Starting point for the environmental objectives of the programme is the **Europe 2020 Strategy** and the dimension of *sustainable growth* which defines: "promoting a more resource efficient, greener and more competitive economy exploiting Europe's leadership in the race to develop new processes and technologies, including green technologies, accelerating the roll out of smart grids using ICTs, exploiting EU-scale networks, and reinforcing the competitive advantages of our businesses, particularly in manufacturing and within our SMEs, as well through assisting consumers to value resource efficiency." In this context, the Commission proposes the Flagship Initiative focusing on policy "*Resource efficient Europe*" in order to decouple economic growth from resource and energy use, supporting the transition to a low carbon economy, increase the use of renewable energy sources, modernize the transport sector and encourage energy efficiency.

In 2011, the strategy E2020 was supplemented by "**Territorial Agenda E2020**". This treaty has added a third dimension: the territorial cohesion to those of economic and social cohesion. This addition took place not only because of the valuation of the role played by the territorial factor in development processes, but also because of the finding that interregional disparities are escalated rather than lead to convergence. Priorities of the Territorial Agenda included among others:

- Territorial Integration in cross-border and transnational functional regions within the logical formation of macro-regions.
- Improving territorial connectivity for individuals, communities and local enterprises, enhancing the safe, environmentally friendly and efficient decentralized infrastructure by the development of the TEN-T and TEN-E.
- Managing and connecting ecological, landscape and cultural values of regions by ensuring well-functioning ecological systems, the protection and enhancement of cultural and natural heritage.

These above-mentioned policies pose the direction of environmental policy within a wider development agenda. These guidelines are specified during the implementation of **7th Environment Action Programme** (2012-2020). In particular, the programme specifies and prioritizes the actions of environmental policy until 2020 and sets the strategic agenda for environmental policy with nine priority objectives that should be achieved by the EU and its Member States by formulating a common approach:

1. to protect, conserve and enhance the Union's natural capital
2. to turn the Union into a resource-efficient, green, and competitive low-carbon economy
3. to safeguard the Union's citizens from environment-related pressures and risks to health and wellbeing
4. better implementation of legislation
5. better information by improving the knowledge base
6. more and wiser investment for environment and climate policy
7. full integration of environmental requirements and considerations into other policies
8. to make the Union's cities more sustainable
9. to help the Union address international environmental and climate challenges more effectively.

These priority objectives are further specified with specific objectives that are related to the implementation of individual measures referred to under implementation or new - proposed policies that have the regulatory character and usually are reflected by directives at European level.

Table 2: Policies per issue that contain objectives related to the programme and must be taken into account by planning process

Field	Title of Plan, programme and policy
Biodiversity	• UN Conventions on Biological Diversity in Nagoya, Aichi • EU Biodiversity Strategy to 2020 COM (2011) 244 final o Directive 92/43/EEC on the conservation of natural habitats and wild flora and fauna o Directive 2009/147/EC on the conservation of wild birds o PAF's 2014-2020 – Prioritised Action Frameworks for NATURA 2000 (per MS) In the context of EU Biodiversity Strategy, the main vision by 2050 is: *"European Union biodiversity and the ecosystem services it provides – its natural capital – are protected, valued and appropriately restored for biodiversity's intrinsic value and for their essential contribution to human wellbeing and economic prosperity, and so that catastrophic changes caused by the loss of biodiversity are avoided."* The first is the 2020 headline target: *"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."*
Mitigate Climate Change / Energy	• United Nations Framework Convention on Climate Change – adaptation to climate change • The Energy Roadmap 2050 (White Paper) • A 2030 framework for climate and energy policies (Green Paper - COM (2013) 169) o Directive 2012/27/EU on Energy Efficiency o Directive 2009/28/EC on the promotion of the use of energy from renewable sources - National Action Plan for Renewable Energy The main medium-term objective (2020) is to reduce GHG emissions by 20% compared with 1990, to increase energy consumption from renewable sources by 20% and to increase energy efficiency by 20%. Parallel objectives relating to security of supply, competitive conditions, etc.
Protection - Management of Marine and Coastal Zone	• Maritime Strategy Framework Directive (MSFD) 2008/56 / EC o Maritime Strategy for the Adriatic and Ionian Seas (COM (2012) 713 • Integrated Coastal Zone Management (ICZM) • Protocol on Integrated Coastal Zone Management in the Mediterranean (2008). The MSFD establishes the framework within which Member States shall

	take the necessary measures to achieve or maintain good environmental status in the marine environment by the year 2020 at the latest. The MSFD completes, with the WFD and ICZM, the framework of coastal management and transitional waters and introduces the concept of marine spatial planning. Because of the direct relevance of the programme with this thematic, the relevant issues will be analyzed as a specific context.
Territorial and Urban Development	• Leipzig Charter on Sustainable Urban Development
Water	• Water Framework Directive (WFD) 2000/60/EC (and other specific directions for the management of municipal waste, nitrates, bathing waters, etc.) The Directive completes the legislative framework relating to internal and transitional (coastal) waters. In 2012 the Commission adopted a plan for the protection of European water resources (COM (2012) 673) focusing on policies to strengthen the implementation of the WFD.
Air Pollution - Noise	• Directive 2008/50/EC on ambient air quality and cleaner air for Europe • Directive 2002/49/EC relating on the assessment and management of environmental noise The policy is implemented by the Thematic Strategy on air pollution that was announced by the Commission (COM 2005 446) in 2005, which sets specific targets for certain pollutants and strengthens the institutional framework for combating air pollution.
Soil	• Commission Communication entitled "Thematic Strategy for Soil Protection" (COM (2006) 231).
Waste	• Directive 2008/98/EC on waste management (N. 4072/12) • National Waste Management Plan (in preparation) • National Waste Prevention Plan
Adaptation to Climate Change	• EU Strategy on Adaptation to Climate Change (COM (2013) 216). • Directive 2007/60/EC on the assessment and management of flood risks
Cultural heritage and landscape	• European Landscape Convention (2004)

3.2.2 Special Framework for the Adriatic – Ionian Region.

3.2.2.1 The Maritime Strategy Framework Directive (MSFD)

In 2008, the European Parliament and the Council of the EU adopted the Directive 2008/56 / EC 'framework for Community action in the F of marine environmental policy", ie the so-called Maritime Strategy Framework Directive. This directive establishes a framework within which Member States shall take the necessary measures to achieve or maintain good environmental status in the marine environment by the year 2020 at the latest. In order to achieve this aim, we will develop and implement strategies for marine waters under the sovereignty or jurisdiction of Member States, with parallel measures which:

- protect and preserve the marine environment, prevent its deterioration or, where practicable, restore marine ecosystems in areas where they have been adversely affected;
- prevent and reduce inputs in the marine environment, with a view to phasing out pollution so as to ensure that there are no significant impacts on or risks to marine biodiversity, marine ecosystems, human health or legitimate uses of the sea.

The marine waters of the Member States are integral part of the following marine regions:

- the Baltic Sea
- the North-east Atlantic Ocean
- the Mediterranean Sea
- the Black Sea,

while Member States may implement this Directive by reference to subdivisions of these marine waters, provided that such subdivisions are delimited in a manner compatible with the following marine subregions:

- in the North-East Atlantic Ocean:
    - the Greater North Sea, including the Kattegat and the English Channel,
    - the Celtic Seas
    - the Bay of Biscay and the Iberian Coast,
    - in the Atlantic Ocean, the Macaronesian biogeographic region, being the waters surrounding the Azores, Madeira and the Canary Islands
- in the Mediterranean Sea:
    - the Western Mediterranean Sea,
    - the Adriatic Sea,

- the Ionian Sea and the Central Mediterranean Sea
- the Aegean – Levantine Sea.

Thus, in accordance with Directive 2008/56/ EC and above subdivision, each Member State shall develop a marine strategy of water, following the steps listed in the articles of the Directive and summarized as following: a) preparation for the assessment, determination of good environmental status (special reference to Annex I of the Directive), the establishment of a series of environmental targets (Annex IV), the monitoring programme for ongoing assessment and regular updating of targets (Annex V), b) the programmes of measures (Annex VI) and c) the updating, reporting and public information.

In 2011, the Directive 2008/56/ EC was fully harmonized with the national law by Law 3983 "National Strategy for the protection and management of the marine environment". In this law, the same objectives, the same marine regions and subdivisions with the Directive are marked, which are under the sovereignty of the Greek Republic or within which it exercises sovereign rights or jurisdiction and refers to the Mediterranean region and the following marine Subregions:

a) the Adriatic Sea,

b) the Ionian Sea and the Central Mediterranean Sea

c) the Aegean - Eastern Mediterranean Sea (Levantine Sea).

1.: Biodiversity is maintained. The quality and the presence of habitats and the distribution and abundance of species are in accordance with dominated natural, geographic and climatic conditions:

1) Maintaining the population of Mediterranean seal Monachus monachus in Greek marine waters.

2) Conducting a census of population of sea turtle Caretta caretta which is reproduced on Greek shores and maintaining the spawning areas.

3) Maintaining and mapping of Posidonia oceanica.

4) Conducting a census of the area occupied by biogenic sediment of type Maerl.

5) Maintenance of benthic macrofauna communities.

2: "The non-native species that enter because of human activities are at levels that do not adversely alter the ecosystems."

1) The inventory of invasive species and their environmental impact on marine ecosystems.

3: "Populations of commercially exploited fish, molluscs and shellfish are within safe biological limits, presenting a population allocation by age and size that is indicative of a healthy stock"

1) Monitoring of indicators "fishing mortality» (F / Fmsy) and "Reproductive biomass» (B / Bmsy) of characteristic benthic species.

2) Observation of the indicator "fishing exploitation' of characteristic pelagic species.

3) Connection of fishing activities with the established indicators.

4: "All elements of the marine food chains, to the degree that they are known, exist at normal abundance and diversity and at levels capable of ensuring the long-term abundance of the species and the conservation of their full reproductive capacity."

1) Monitoring and evaluating the biomass equilibrium at higher trophic levels to the total catch of benthic fish.

5: "The eutrophication is minimized, especially its negative effects, such as losses in biodiversity, ecosystem degradation, the "bloom" or great increase of phytoplankton and oxygen deficiency in bottom waters."

1) Reduction of the marine environment incoming organic load and nutrients substances from point and non-point sources.

2) Reduction of nitrates from agricultural activities according to Good Agricultural Practice in order to reduce the loads of nutrients that end up in water bodies.

6: "The integrity of the bottom waters is at such a level that ensures that the structure and functions of ecosystems are guaranteed and benthic ecosystems, in particular, are not adversely affected."

1) Mapping sensitive benthic habitats.

2) Maintaining the balance of benthic macrofauna

7 "The permanent change of hydrographical conditions does not adversely affect marine ecosystems."

1) Prevention of environmental impact of anthropogenic permanent changes in hydrographic conditions that are local.

8: "The concentrations of contaminants are at levels that does not cause pollution effects."

1) The specificity of the effects of pollutants and determination of the prevailing trends in the concentration of these substances in the water column, sediments, marine organisms and ecosystems.

9: 'Contaminants in fish and other seafood products for human consumption do not exceed levels established by Community legislation or other relevant standards. "

1) The maintenance of contaminants in fish and other seafood products for human consumption to permitted levels.

10: "Properties and quantities of marine litter do not harm the marine and coastal environment."

1) Reducing anthropogenic waste in coastal and marine environment.

11: "Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment."

1) The control of energy levels in order not to adversely affect the marine environment

3.2.2.2 Maritime Strategy for the Adriatic and Ionian Seas (COM (2012) 713)

On 30 November 2012 the European Commission presented a Communication on maritime strategy for the Adriatic and Ionian Seas, in an effort to assess the needs and potential of sea-related activities in this area and to set out a framework to move towards a coherent maritime strategy and corresponding Action Plan. At the same time, this communication provides a framework to adapt the Integrated Maritime Policy to the needs and potential of natural resources and the socio-economic fabric of the Adriatic Sea and Ionian marine and coastal areas. In particular, it is noted that if Member States decide to ask the Commission to prepare an EU strategy for this region, this maritime might constitute the first component of such an EU macro-regional strategy covering additional fields. The strategy will define viable actions and joint initiatives addressing challenges and opportunities with a cross-border dimension that can be solved only by common engagement.

This Communication sets out an agenda with objective to smart, sustainable and inclusive growth from the sea (achieving the Strategy Europe 2020) which is based on four pillars and notes examples of priority areas of each pillar for development. These pillars are summarized in the following:

Pillar 1. Maximizing the potential of the blue economy

Setting the conditions for innovation and competitiveness

Relevant marine and maritime sectors (maritime transport, coastal and maritime tourism, aquaculture)

Pillar 2. Healthier marine environment

Pillar 3. A safer and more secure maritime space

Pillar 4. Sustainable and responsible fisheries

The maritime strategy for the Adriatic and Ionian Seas will be spelled out in detail in an Action Plan due in the second half of 2013, respecting the ongoing and planned actions of relevant EU policies. Based on the pillars identified in this Communication, it will include priority areas and actions recommended for support in order to respond to the challenges and opportunities set out above. It will also set clear targets in line with those for the Europe 2020 strategy. Such actions will be undertaken by stakeholders in the region with whom the Commission will work, including governments and agencies, regions, municipalities, business actors, researchers and international and non-governmental organisations. The strategy will define viable actions and joint initiatives addressing challenges and opportunities with a cross-border dimension that can be solved only by common engagement. ns.

3.2.2.3 Integrated Coastal Zone Management - Protocol on Integrated Coastal Zone Management in the Mediterranean Sea

The International Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocols, established a common framework for the integrated coastal zone management in the Mediterranean, which includes the necessary measures to strengthen regional cooperation for this purpose.

According to the Protocol, the area is defined by:

a) the seaward limit of the coastal zone, which shall be the external limit of the territorial sea of Parties; and

b) the landward limit of the coastal zone, which shall be the limit of the competent coastal units as defined by the Parties.

The objectives of integrated coastal zone management are to:

(a) facilitate, through the rational planning of activities, the sustainable development of coastal zones by ensuring that the environment and landscapes are taken into account in harmony with economic, social and cultural development;

(b) preserve coastal zones for the benefit of current and future generations;

(c) ensure the sustainable use of natural resources, particularly with regard to water use;

(d) ensure preservation of the integrity of coastal ecosystems, landscapes and geomorphology;

(e) prevent and/or reduce the effects of natural hazards and in particular of climate change, which can be induced by natural or human activities;

(f) achieve coherence between public and private initiatives and between all decisions by the public authorities, at the national, regional and local levels, which affect the use of the coastal zone.

In implementing this Protocol, the Parties shall be guided by the following principles of integrated coastal zone management:

(a) the biological wealth and the natural dynamics and functioning of the intertidal area and the complementary and interdependent nature of the marine part and the land part forming a single entity shall be taken particularly into account;

(b) all elements relating to hydrological, geomorphological, climatic, ecological, socioeconomic and cultural systems shall be taken into account in an integrated manner, so as not to exceed the carrying capacity of the coastal zone and to prevent the negative effects of natural disasters and of development;

(c) the ecosystems approach to coastal planning and management shall be applied so as to ensure the sustainable development of coastal zones;

(d) appropriate governance allowing adequate and timely participation in a transparent decision-making process by local populations and stakeholders in civil society concerned with coastal zones shall be ensured;

(e) cross-sectorally organised institutional coordination of the various administrative services and regional and local authorities competent in coastal zones shall be required;

(f) the formulation of land use strategies, plans and programmes covering urban development and socioeconomic activities, as well as other relevant sectoral policies, shall be required;

(g) the multiplicity and diversity of activities in coastal zones shall be taken into account, and priority shall be given, where necessary, to public services and activities requiring, in terms of use and location, the immediate proximity of the sea;

(h) the allocation of uses throughout the entire coastal zone should be balanced, and unnecessary concentration and urban sprawl should be avoided;

(i) preliminary assessments shall be made of the risks associated with the various human activities and infrastructure so as to prevent and reduce their negative impact on coastal zones;

(j) damage to the coastal environment shall be prevented and, where it occurs, appropriate restoration shall be effected.

In conformity with the objectives and principles set forth in Articles 5 and 6 of this Protocol, and taking into account the relevant provisions of the Barcelona Convention and its Protocols, the Parties shall:

(a) accord specific attention to economic activities that require immediate proximity to the sea;

(b) ensure that the various economic activities minimise the use of natural resources and take into account the needs of future generations;

(c) ensure respect for integrated water resources management and environmentally sound waste management;

(d) ensure that the coastal and maritime economy is adapted to the fragile nature of coastal zones and that resources of the sea are protected from pollution;

(e) define indicators of the development of economic activities to ensure sustainable use of coastal zones and reduce pressures that exceed their carrying capacity;

(f) promote codes of good practice among public authorities, economic actors and non-governmental organisations.

In addition, with regard to the following economic activities, the Parties agree:

(a) Agriculture and industry, to guarantee a high level of protection of the environment in the location and operation of agricultural and industrial activities so as to preserve coastal ecosystems and landscapes and prevent pollution of the sea, water, air and soil;

(b) Fishing, (i) to take into account the need to protect fishing areas in development projects; (ii) to ensure that fishing practices are compatible with sustainable use of natural marine resources;

(c) Aquaculture, (i) to take into account the need to protect aquaculture and shellfish areas in development projects; (ii) to regulate aquaculture by controlling the use of inputs and waste treatment;

(d) Tourism, sporting and recreational activities, (i) to encourage sustainable coastal tourism that preserves coastal ecosystems, natural resources, cultural heritage and landscapes; (ii) to promote specific forms of coastal tourism, including cultural, rural and ecotourism, while respecting the traditions of local populations; (iii) to regulate or, where necessary, prohibit the practice of various sporting and recreational activities, including recreational fishing and shellfish extraction;

(e) Utilisation of specific natural resources, (i) to subject to prior authorisation the excavation and extraction of minerals, including the use of seawater in desalination plants and stone exploitation; (ii) to regulate the extraction of sand, including on the seabed and river sediments or prohibit it where it is likely to adversely affect the equilibrium of coastal ecosystems; (iii) to monitor coastal aquifers and dynamic areas of contact or interface between fresh and salt water, which may be adversely affected by the extraction of underground water or by discharges into the natural environment;

(f) Infrastructure, energy facilities, ports and maritime works and structures to subject such infrastructure, facilities, works and structures to authorisation so that their negative impact on coastal ecosystems, landscapes and geomorphology is minimized or, where appropriate, compensated by non-financial measures;

(g) Maritime activities, to conduct maritime activities in such a manner as to ensure the preservation of coastal ecosystems in conformity with the rules, standards and procedures of the relevant international conventions.

For prevention and control of pressures in the coastal zone, the Parties shall take the following measures:

1. Environmental assessment. To evaluate the environmental impact in coastal areas, and in particular their ecosystems, taking into account the fragility of coastal zones, the Parties shall ensure that the process and related studies of environmental impact assessment for public and private projects likely to have significant environmental effects on the coastal zones, and in particular on their ecosystems, take into consideration the specific sensitivity of the environment and the interrelationships between the marine and terrestrial parts of the coastal zone. In accordance with the same criteria, the Parties shall formulate, as appropriate, a strategic environmental assessment of plans and programmes affecting the coastal zone. The environmental assessments should take into consideration the cumulative impacts on the coastal zones, paying due attention, inter alia, to their carrying capacities.
2. Land policy: For the purpose of promoting integrated coastal zone management, reducing economic pressures, maintaining open areas and allowing public access to the sea and along the shore, Parties shall adopt appropriate land policy instruments and measures, including the process of planning. To this end, and in order to ensure the sustainable management of public and private land of the coastal zones, Parties may, inter alia, adopt mechanisms for the acquisition, cession, donation or transfer of land to the public domain and institute easements on properties.

3.3 Relationship with other programmes

The programme has a complementary and prominent role in implementing strategies addressing to the environment in relation to interventions implemented in the framework of national and regional programmes for 2014-2020.

This role is associated with the development of the cross-border area and the support of the implementation of European environmental policy. Its complimentary role is therefore relates to the manner in which the activities of the programme will enhance the effect produced by national and regional planning, which for the programme area is formed by the Programmes of Greek and Italian Partnership Agreement 2014-2020.

The OPs of Greek side are:

- The ROP Epirus, Western Greece and Ionian Islands

- The OP Transport Infrastructures, Environment and Sustainable Development2014-2020 (which will fund through the Cohesion Fund and the ERDF major interventions on environmental infrastructure, water management and ecosystem protection).
- The OP Competitiveness, Entrepreneurship and Innovation 2014-2020, which includes the area of green entrepreneurship
- The Rural Development Programme (RDP) 2014-2020 which includes all the resources of the European Agricultural Fund for Rural Development (EAFRD)
- The OP Fisheries Development 2014-2020 which includes all the resources of the European Maritime and Fisheries Fund (EMFF).

Similarly the Ops of Italian side are:

- The ROP Puglia 2014-2020
- The RDP 2014-2020
- The OP Fisheries Development 2014-2020

The complementarity also affects the other bilateral cross-border programmes, multilateral cross-border programmes, trannational programmes and interregional programme, involving all the eligible area from the Greece - Italy programme, such as Mediterranean Space - MED, Adriatic - Ionian programme.

3.4 Specification of environmental assessment criteria

The programme implementation is not one-dimensional connected with the achievement of the objectives for environmental protection. Therefore, its implementation may lead to significant impacts. The identification of these effects is the main object of the SEA Report.

In order to evaluate the environmental effects of the programme a list of issues based on the objectives of environmental policy is defined. After analyzing the current state of the environment, these issues will be taken into account in order to evaluate the impact in relation to their achievement.

Based on the above-mentioned, for specifying the effects, for each field the following issues will be primarly considered:

Table 3: Environmental Objectives and questions of control - assessment

O.1 "Halting the loss of biodiversity, maintaining the state of ecosystems and if possible improving the characteristics of those who are not in good condition". Is the implementation of the OP expected to affect:	
1	The extent and consistency (internal) of protected areas?
2	The coherence of the system of Significant Biodiversity areas, ecological corridors?
3	The integration of conservation in the entire planning process and the promotion of "green infrastructure"?
O.2. "Preserving the genetic wealth of biodiversity and ecosystem services". Is the implementation of the OP expected to affect:	
4	The maintenance of racial or genetic diversity, richness and composition of populations of wildlife species?
O.3. "Enhancing the adaptation to Climate Change, in order the impacts of Climate Change to be absorbed with the least possible cost". Is the implementation of the OP expected to affect:	
5	The ability of the environment to affront - by itself - the effects of climate change?
6	The importance of the impacts of natural disasters caused by extreme weather events (heat waves, floods, etc.)?
7	The need to protect coastal areas from erosion / sinking?
O.4. International efforts to mitigate climate change". Is the implementation of the OP expected to affect:	
8	The achievement of the targets of reducing GHG?
9	The ability to capture carbon from natural ecosystems?
10	The achievement of the targets for renewable energy and energy efficiency?
11	The shift of transport projects to within small or zero emissions means of transport?
O.5. "Protecting the health of the population". Is the implementation of the OP expected to affect:	
12	The abandonment or aging population in mountainous and / or rural areas?
13	The exposure of individuals to new or increased sources of pollutants, radiations or other substances or energy that may be harmful to human?
14	The value of land, the public character and access to public goods?

O.6. "Balanced territorial development and promotion of a new model of sustainable development". Is the implementation of the OP expected to affect:	
15	The need to develop transport, energy and environmental management networks and their construction / operation costs?
16	The balanced territorial development (retaining population and income) and relationships of town - countryside?
17	The promotion of green or blue economy?
O.7. "Effective waste management and compliance with the European obligations". Is the implementation of the OP expected to affect:	
18	The production of solid waste, their qualitative composition or their hazard?
19	The reduce and reuse of materials and consumer products?
O.8. "Protection of the aquatic environment, water management and improving the quality and quantity parameters according to the requirements of the EU Water Framework Directive (WFD) and the Marine Strategy Framework Directive (MSFD)". Is the implementation of the OP expected to affect:	
20	The water demand or pressures on the surface or underground systems (pollution, salination)?
21	The implementation of management measures and the achievement of the objectives that are set?
O.9. "Protection of residential centers from air pollution and noise". Is the implementation of the OP expected to affect:	
22	The levels of air pollution (or the conditions of its formation) at local level?
23	The exposure of residential or tourist areas to noise?
O.10. "Protection and Promotion of Cultural Heritage and Landscape as a development resource". Is the implementation of the OP expected to affect:	
24	The existing character of the landscape, the enhancement of natural and cultural sites - monuments?
25	The commitments of protection of the coastal zone?
O.11. "Protection of soil pollution and conservation of land productivity". Is the implementation of the OP expected to affect:	
26	The protection of productive soil for the economy or the ecosystem?

4. DESCRIPTION OF PROGRAMME

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

a) its geographical scope,

b) its contents,

c) the projects and activities that may arise from its implementation.

4.1 Programme strategy

The main aim of the O.P. is to maximize the impact of cohesion policy on cross-border area complementary to other national and regional programmes of 2014-2020. The context of the strategy of these programmes is determined by the *Community Strategic Guidelines on Cohesion Policy 2014-2020,* which have been analyzed in connection with the Europe 2020 policy, putting together a framework of three priorities: smart, sustainable and inclusive growth (are already analyzed in Chapter 3).

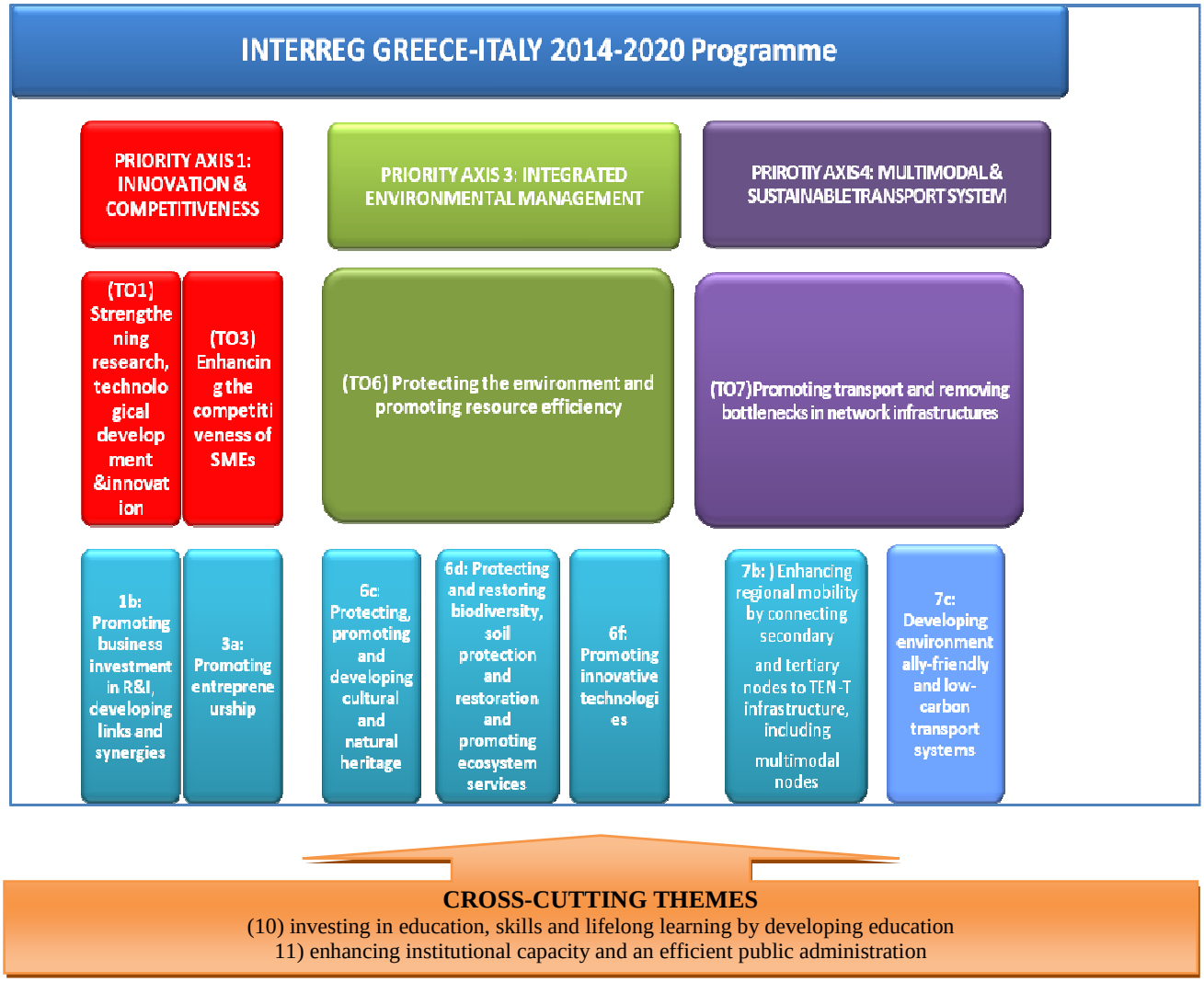
Apart from this general context, the specification of the programme strategy was based on a number of other parallel or ongoing policies. The main policies were:

- The Regulations European Structural and Investment Funds (ESIF) for the programming period 2014-2020 (including obligations for thematic concentration of ETC programmes).
- The EU strategy for the Adriatic - Ionian Region (EUSAIR).
- Partnership agreements of Italy and Greece, and the relevant Ops.
- The results and the achievement of the programme 2007-2013 (as reflected by the on-going evaluation).

- The needs and challenges of cross-border area (as listed in the SWOT analysis and other recommendations of the Monitoring Committee).

Considering the above-mentioned and in accordance with the limits for thematic concentration imposed by the application of the Regulation 1301/2013, the intervention in T.O. 1,3,6 and 7 was chosen that is related to Smart (T.O. 1 and 3) and Sustainable (T.O.6 and 7) development as well as the introduction of inclusive growth as a horizontal dimension in education (T.O.10) and administrative capacity (T.O.11) issues.

Figure 2: Strategic Programme structure



According to the requirements of the Regulation for each T.O. that is selected, the Investment Priorities should be also selected which during the operational planning will be corresponded to Specific Objectives. These options are presented in Figure 2.

4.2 Area of application

According to the executive decision of Committee to set up the list of regions and areas that are eligible for funding from the ERDF in the context of cross-border, transnational and interregional components of the European Territorial Cooperation for the programming period 2014-2020, the Programme IT-GR covers the following areas:

Table 4: Implementation Area of Programme

NUTS I	NUTS II	NUTS III
Central Greece	**Region of Western Greece**	Prefecture of Aitoloakarnania
		Prefecture of Achaia
		Prefecture of Ilia
	Region of Ionian Islands	Prefecture of Kerkyra
		Prefecture of Lefkada
		Prefecture of Kefallinia
		Prefecture of Zakynthos
	Region of Epirus	Prefecture of Ioannina
		Prefecture of Preveza
		Prefecture of Thesprotia
		Prefecture of Arta
South Italy	**Region of Puglia**	Province of Bari
		Province of Brindisi
		Province of Lecce
		Province of Foggia
		Province of Taranto

4.3 Priority Axes

The four thematic objectives are synthesized in three priority axes, of which the Axis 1 includes two T.O.s (corresponding to the objectives of "Smart Growth"), the Priority Axis 2 includes the T.O. 6 referred to the management and protection of the environment and the Axis 3 is referred to transport and to one Investment Priority (In.P.).

4.3.1 Priority Axis 1: Innovation and competitiveness

T.O. 1: Strengthening research, technological development and innovation.

The T.O. will be achieved through:

- In.P.1 (b): Promoting business investment in R & I, developing links and synergies between enterprises, research and development centers and higher education.
    - S.O. 1.1: Improving existing and developing new innovative support services with a focus on areas of special interest to the programme area (such as the blue economy, tourism, culture, etc.)
    - S.O 1.2: Creating innovative clusters between regions in the fields of blue economy, industry creation, tourism, culture and agri-entrepreneurship.

IC 3: Improving the competitiveness of SMEs

The T.O. will be achieved through:

- In.P. 3 (a): Promoting entrepreneurship, in particular by facilitating the economic exploitation of new ideas and fostering the creation of new companies, including entrepreneurship incubators (business incubators)
    - S.O.1.3: Support for incubating innovative ideas of thematic issues, such as the blue development, tourism, culture, agribusiness and other fields of interest to the programme area

4.3.2 Priority Axis 2: Integrated Environmental Management

T.O. 6: Protecting the environment and promoting resource efficiency.

The T.O. will be achieved through:

- In.P.6 (c): Protecting, promoting and developing cultural and natural heritage.
    - S.O. 2.1 Improving competences for sustainable use and development of cultural heritage and resources with special attention to accessibility for disabled
    - S.O. 2.2 Developing integrated environmental management approaches and recruitment in the public and private sector
- In.P. 6 (d): Protecting and restoring biodiversity, soil protection and promotion of ecosystem services including Natura 2000 areas and green infrastructure.
    - S.O 2.3 Improvement of joint management plans for the protection and management of biodiversity in coastal and rural ecosystems, paying attention to

natural resources and protected areas and the development of environmental protection measures, also related to the prevention of technological risks.

- In.P.6 (f): Promoting innovative technologies to improve environmental protection and energy efficiency in the fields of waste, water and air pollution
  - S.O. 2.4 Developing and testing innovative technologies / tools for effective integrated waste, water and air pollution management.

4.3.3 Priority Axis 3: Transboundary and sustainable transport system

T.O. 7: Promoting sustainable transport and removing barriers to infrastructure networks

The T.O. will be achieved through:

- In.P. 7 (b): Improving regional mobility by connecting secondary and tertiary nodes in the TEN-T infrastructure, including intermodal hubs.
  - S.O. 3.1 Optimizing interconnections, procedures / operations of ports and other transport infrastructure in order to boost the maritime, coastal shipping capacity and cross-border ferry connectivity
- In.P. 7 (c): Developing and improving environmentally friendly (including low noise) and low-carbon transport systems, including waterways and maritime transport, ports and intermodal hubs.
  - S.O. 3.2 Improving the efficiency of transport: including the life-cycle approach, achieving near-zero energy demand and reducing the impact of transport on the environment and promoting innovation for sustainable and non-polluting transport

4.3.4 Horizontal thematic objectives

T.O. 10: Investing in education, skills and lifelong learning:

focuses on the need to develop and implement joint training, professional training in order to enhance the competitiveness of SMEs in the programme area which is affected by the lack of trained and skilled workforce. Entrepreneurship is also in need to find strategic information, new learning concepts, by taking into account the new global trends and management procedures. There is a great need to "brain circulation" (mobility of researchers, and between academia and private sector) and to creation of common platforms for research, innovation, and training to develop in response to territorial needs.

Therefore, the need to improve management skills have dealt with almost all targets, especially in areas of specific interest to the programme area related to Tourism and Culture, Food-Industry and blue growth.

T.O. 10: strengthening the institutional capacity of public authorities and stakeholders and effective public administration:

Focuses on strengthening the institutional capacity and the efficiency of public administrations and public services by promoting legal and administrative cooperation between citizens and institutions and by developing and / or coordinating macro-regional and sea basin strategies. This is very important for the programme area, as it is appropriate to coordinate regional planning activities to improve governance and services. A common vision for planning, interventions should help to create a wider favorable economic and / or social environment for the entire programme area, with the mobilization of additional resources, ensuring synergies with parallel programmes and environmental policies and with the promotion of innovative tools and mechanisms and for adaptation to the new management framework of the European Union.

4.4 Expected results

Expected project results are:

- Improving accession to research results and technology transfer for businesses, especially SMEs
- Developing cross-border clusters for acqualcuture, Agrofood, cultural and creative industries and other sectors
- Adoption of innovative financing tools and approaches
- Improving technological and managerial competences for innovative entrepreneurship
- Facilitating accession for the targeted financing of innovation and of internationalization of SMEs
- New innovation support services
- Creation of new incubators in priority sectors, promoting of innovation and allowance of best practice exchange.
- Developing innovative tools for natural and touristic destinations etc (Up, web portal etc)
- Enhancing infrastructures and services for disabled people in natural and historical sites

- Implementation of common management plan to improve heritages sites
- Developing new actions and methods for the prevention of pollution
- Spread touristic information by means of the new common technologies
- Developing specialized internship in SMEs in order to to tackle school dispersion
- Development of new measures and methods for the prevention of pollution
- Disseminating tourist information with the help of new technologies
- Development of connections between specialized training and business to tackle the spread of the school
- Adoption of common protocols for the prevention of risks
- Completing and updating information on the biodiversity of natural areas of the programme area
- Reducing pollution from industrial discharges by adopting technologies for pollution prevention
- Presenting a friendly environment management in all industries
- Standard methods of clean production and Certification
- Facilitating boarding and disembarking with particular attention to passengers with special needs
- Improving services in transport infrastructure
- Improving the exchange of information on maritime traffic
- Improved security in port operations
- Dissemination of information on transport links via Internet
- Developing innovative transport systems, without impacting on the environment (eg seaplanes electric vehicles, non-polluting transport at sea).
- Enhancing use of renewable energy on public services
- New ecologically sustainable transport systems to reduce pollution
- Strengthening the capacities of actors involved (port authorities, supply chains, SMEs, customs, etc.) in order to minimize the impact of transport on the environment and promote innovation for sustainable and non-polluting transport at sea.

5. ALTERNATIVES

The realistic alternatives are presented and evaluated, including "zero" alternative regarding their effect on the environment and sustainable development.

5.1 Assumptions and data for selecting the alternatives

The consideration of alternatives is not a standard procedure that aims to highlight the suitability of the selected solution, but to demonstrate that the selected solution is the best option for the sustainable development of the area. In accordance with the SEA Directive, the alternatives should be *realistic*, ie they should be feasible and eligible based on the specific data and regulations of the programme framework.

5.1.1 Zero alternative

The zero scenario, ie the non-implementation of the programme, would result in the immediate cancellation of the funding of several million € which should be directed towards actions with positive environmental impact. In this case, however, the expected environmental effect that will be lost is estimated to be much higher. The main element that will lead to the loss of this added value is the absence of the same programming framework that will allow coordination of actions for the joint protection and management of natural and cultural resources that require special support.

5.1.2 First Alternative: Status-Quo Strategy (2007-2013)

This alternative raises the question of why not to continue the programme with the current (2007-2013) strategy? The answer to this question is clear from the results of the 'evaluation during the implementation of ETC Programme Greece-Italy 2007-2013'. Main factor is documented by the Evaluator is that despite the success of this programme, there are two important issues that will make the strategy period 2007-2013 of reduced efficiency. The first issue refers to changing circumstances, especially the changes brought about by the economic crisis, which greatly diversify the needs in the field of environmental protection. The second issue concerns the strategic framework that has been strengthened and specialized, both in terms of policy coherence (adapting the E2020), and in terms of territorial cohesion (the main strategy Adriatic - Ionian). In this way, actions related to the reduction of GHG, or to the development of a blue economy (as an environmentally friendly approach to development) are absent from the strategy objectives and reports 2007-2013.

5.1.3 Suggested alternative

The proposed solution which was presented in Chapter 4 is considered to best integrate the requirements of actual environmental policy in the area and contribute to the pursuit of sustainable development not only in the cross-border area, but also in the wider regional area of the Ionian - Adriatic.

6. DESCRIPTION OF THE CURRENT STATE OF THE ENVIRONMENT

The description of the current state aims at highlighting key environmental issues and identifying the "baseline value" for the evaluation of environmental outcome. This section is necessary to give information about:

a) details of the current state of the environment in the study area and the likely evolution thereof if not implement the programme,

b) the environmental characteristics of areas likely to be significantly affected within the study area,

c) any existing environmental problems in the areas of particular environmental importance, such as those included in the national part of the European ecological network Natura 2000.

6.1 Identification of areas and characteristics that may be affected

As is clear from the description of the programme actions, these may affect the whole implementation area. However, based on the priorities and choices, the areas, that are most likely to be affected, can be identified. Similarly, the target of every action can identify the characteristics of the environment that may be affected.

Generally, the Actions of Priority Axis (P.A.)-1 are expected to affect mainly:

- The coastal and marine area (tourism, aquaculture)
- The industrial and sub-urban areas (incubators, biotechnology)
- The rural areas (agri-food).

- The areas of concentration of cultural resources - urban centers (cultural and creative actions)

Main features that are likely to be affected are the waters, biodiversity, landscape and waste.

The actions of P.A.2 mainly focus on natural and cultural sites of interest, and in tourist areas (coastal zone).

The actions of P.A.3 mainly focus on areas of transport hubs (mainly urban harbors and ports), the sea, and other suburban areas. Main features that are likely to be affected is the air quality.

6.2 Analysis of the Current State of the environment

The analysis of the current state of the environment is referred to the presentation of the characteristics of the environment that are likely to be affected (positively or negatively) by the implementation of the programme. The analysis includes the following sections:

Biodiversity - flora - fauna.

Abiotic Environment: climate, air, soil, water

Population - Land use - production and settlement structure

Social and technological equipment

Cultural Heritage and Landscape.

6.2.1 Biodiversity - flora - fauna

6.2.1.1 Vegetation zones - Flora

The Mediterranean ecosystems include various structures of vegetation such as forests, shrub lands, lands with smaller shrubs and herbaceous plants. Indicatively, in Greece, at higher elevations, the oaks, the chestnuts, the wallnuts are dominated and at lower altitudes mainly pine forests. The shrubland or maquis shrubland are the typical vegetation of the Mediterranean type ecosystems. The woody, evergreen shrubs or small trees are dominated that have developed various growing and utilization strategies of available water during the summer dry season. The type of vegetation that includes the smallest shrubs is known as brushwood and consists of low shrubs, with small leaves and spiny branches.

According to a study which was conducted by the non-governmental organization WWF (GR), the region of Epirus includes a large part of the range of vegetation types and habitats found in the whole Greece. In terms of flora, more than 2,000 species and subspecies are found. The mountainous area of Pindos consists mainly of pure and mixed deciduous and coniferous forests. The mountain of Grammos is one of the most productive and most undisturbed forests of Greece. At low altitudes of Grammos mainly oaks, gabbro, faction, beech and black pine are grown. At higher altitudes, black pines are growing, while above the 1,800 metres lie the most extensive alpine meadows of the country. More than 500 plant species are identified, 22 of whichare endemic and some very rare. The isolated mountain of Smolikas hosts many and varied forests, such as oak at low elevations, forests of black pine and hybrid fir at higher elevations. The mountains of northern Pindos are an important center of endemism in the Balkans, in particular with regard to flora which is found in serpentine soils, both because of the high number of endemic and evolutionary perspective, as many of these endemic species are belonged to residual or isolated groups. Such species are the species of the genus Bormuellera, the viola, the Silenus, etc.

In the southern part of the continent rises Tymfi, consisting of many peaks and two major canyons, the canyon of Vikos and Aoou, around which the National Park Vikos – Aoou is defined. The rich and rare flora of the National Park includes more than 1,200 species, and all types of vegetation from riparian forests and chasmophytic vegetation on the cliffs of the gorges, as well as forests to high altitude and alpine meadows. Many local endemic species (eg Centaur and Silenus), but also endemic to Greece (eg lithospermum, the minouartia) are gathered at the tops of Tymfi in both canyons. In the National Park of Pindos 415 species of plants have been recorded. The dominant forest species that are presented at the other mountains of Epirus is the black pine, the hybrid fir, the Robolis, beech and juniper species at higher altitudes, while at lower altitudes meet various kinds of oak, chestnut, gabbros, maple, willow, alder, and poplar ostryes are identified. The shrubby vegetation includes areas with oaks and arbutus. The wetlands of the Ambracian Gulf consist of double deltas of Lourou and Arahthos rivers, lagoons (Tsoukalio, Rodia and Logarou), wet meadows and extensive saltmarsh. North of Rodia the biggest reed of Greece is spread and along the two rivers some of the most extensive riparian forests of the country are presented. The agricultural areas cover the major part of the region, followed by areas of low vegetation, broadleaved forests and shrublands. Smaller areas are covered by coniferous forests.

The endemism of the flora of the Ionian islands Region is not particularly high. Overall, in the Ionian islands, more than 160 endemic plant species have been found, local or Greece, and there are examples of stenotopon species such as Viola cephalonica (critically endangered) that are found at the peaks of Enos in Kefalonia. Other local endemic species of the Ionian are the Silene cephallenia (critically endangered), the Saponaria aenesia (endangered), Alium ionicum, Galium mixtum, Arenaria leucadia (endangered), Stachys ionica, and many species of orchids such as Serapias ionica and Ophrys gottfriediana. Very interesting regions from floristic point of view, are the usually rugged western coast of the

Ionian Islands that host a specialized flora species such as the Asperula naufraga (endangered), Centauria paxorum and Limonium antipaxorum, Limonium zacynthium and L. Ithacense . The main coverage of the region is the agricultural lands (56% of the total area) while woodland and areas of low vegetation occupy 23% and 16,7% of the total area of the Ionian Islands.

The Peloponnese has two dominant vegetation types: a) the Mediterranean and b) the mountainous. At first type, lentisks and evergreen and broadleaves oaks are found. The forest of Foloi, which is located in the prefecture of Ilia, is the most typical case of spreading broadleaf oak. The forest has a total area of 3.917 hectares and is one of the few pure forest of oak forests in lowland Europe. Also, in the western Peloponnese, pine forests are found. In areas of Strofylia, Caiaphas and around the lagoon Kotychi, the largest pine forest (on dunes) in Greece, is identified. At altitudes greater than 800 m., mountain conifers are found. According to general information about the flora, the Peloponnese hosts more than 2,700 native plants of which 12.3% are Greek endemic and 4.6% grows exclusively in the Peloponnese, often in a single location. It includes most endemic species in Greece. Specifically, the percentage of endemic plants of Erimanthos in Achaia is 9.4%, and of the Zireia in Ilia is 19.7%. According to the land use map of Corine Land Cover 2000, the areas of coastal regions of Achaia and Ilia are mainly covered by rural ares, vineyards and farm crops.

The region of Puglia in Italy mainly includes agricultural ecosystems (82%). The northern and central part of the region include arable land (39.8%) producing cereals and vegetables, while in central and southern Puglia mainly olive groves (22.6%), herbaceous vegetation and vineyards (6.4%), and heterogeneous rural areas (13.3%) are found. Unevenly distributed forest areas (7.3%) are concentrated on the peninsula Gargano. The Maquis shrubland is dominated with extensive olive groves in the lowland. In hilly area, except the extensive vineyards, the structure of the Mediterranean biome is determined by the rocky soil in which extensive grasslands are formed. In these rocky grasslands trees of typical Mediterranean vegetation are found, such as pine trees, and more or less extensive areas of oak.

The grasslands contain common species of grass of high and low vegetation, such as daffodil and ring. The vegetation is rich in plants such as myrtle and herbs (oregano plants etc). In the northern part of the region (National Park of Gargano) mixed forests of oak and beech are found. This region has a special microclimate which is formed by the interaction of relatively high (for Puglia) rainfall, by steep cliffs overlooking the sea, by the caves, wooded valleys that descend to the sea, coastal lagoons and hills. That is the reason that in this region over 2,200 species of plants are found, representing about one third of the species occurring in Italy. Interesting forests are found in areas Monte Sant'Angelo, the Monte Sacro, and in the coastal zone, where Aleppo pine forest area over 7.000 Ha is identified. Endemic species in the area are Scabiosa dallaportae (characterized as rare), the Campanula Gargano, Satureja fruticosa iitalica, the laburnum (Cytisus decumbens), the

Inula candida, the Cistus clusii, rare species observed on the dunes of the area as the Centaurea diomedea and grass Ghiacciola (Mesembryanthemum nodiflorum).

Puglia and especially the area of Gargano is considered as a very important site for biodiversity because of the existence of more than 80 different species of wild orchid belonging to 17 species, some of which are endemic, such as Ophrys promontorii, Ophrys sipontensis, Ophrys argolica subsp. biscutella, Ophrys bertolonii subsp. bertoloniiformis, Ophrys holosericea subsp. apulica, Ophrys holosericea subsp. parvimaculata, Ophrys exaltata subsp. archipelagi, Ophrys scolopax subsp. cornuta, Ophrys iricolor subsp. lojaconoi, Orchis quadripunctata e Serapias orientalis subsp. Apulica.

6.2.1.2 Birds

The area of interest is characterized by a significant number of Special Protection Areas (27 areas) for birds in accordance with Directive 79/409/EEC and 2009/147/EC "On the conservation of wild birds". 22 of 27 areas are located in the Greek territory and 5 of them in Italian. In addition, the Special Protection Areas in the Greek territory also belong to the Network of Important Bird Areas (IBAs) of Greece (Portolou et al., 2009).

Table 1. Important Bird Areas of Greece

Administrative structure	Name	Code	'Area (ha)	Items characterization
Greece, Region: Epirus Prefecture: Thesprotia	Delta Kalama	GR074	5,629	Glossy Ibis (*Plegadis falcinellus*), Great Egret (*Casmerodius albus*) Argyropelekanos (Pelecanus crispus) Pygmy Cormorant (Phalacrocorax pygmeus) Cormorant (Phalacrocorax carbo) Spotted Eagle (Aquila clanga) Curlew (*Numenius tenuirostris*) Little Tern (*Sterna albifrons*) Mikrogaliantra (*Calandrella brachydactyla*)
Greece, Region: Epirus Prefecture: Preveza, Thesprotia, Ioannina	Acherontas	GR077	6,266	Petrperdika (*Alectoris graeca*) Glossy Ibis (*Plegadis falcinellus*) Bonelli (*Hieraaetus fasciatus*) Olive-tree Warbler (*Hippolais olivetorum*) Sardinian Warbler (*Sylvia melanocephala*) Warbler (*Sylvia cantillans*) Vrachotsoponakos (*Sitta neumayer*) Asprokolina (*Oenanthe hispanica*) Fryganotsichlono (*Emberiza caesia*) Viticulture (*Emberiza melanocephala*)
Greece, Region: Epirus, Western Greece Prefecture: Arta, Preveza, Aetoloakarnanias	Ambracian Bay	GR081	26,275	Wigeon (*Anas penelope*) Shoveler (*Anas clypeata*) Hedge (*Anas acuta*) Teal (*Anas crecca*) Pochards (*Athya ferina*) Ferruginous (*Aythya nyroca*)

Administrative structure	Name	Code	'Area (ha)	Items characterization
				Mafrovoutichtari (*Podiceps nigricollis*) White Stork (*Ciconia ciconia*) Glossy Ibis (*Plegadis falcinellus*) Spoonbill (*Platalea leucorodia*) Bittern (*Ixobrychus minutus*) Night Herons (*Nycticorax nycticorax*) Kryptotsiknias (*Ardeola ralloides*) Egret (*Casmerodius albus*) Egret (*Egretta garzetta*) Dalmatian (*Pelecanus crispus*) Cormorant (*Phalacrocorax carbo*) Spotted (*Aquila clanga*) Coot (*Fulica atra*) Curlew (*Burhinus oedicnemus*) Oystercatcher (*Haematopus ostralegus*) Stilt (*Himantopus himantopus*) Thalassosfyrichtis (*Charadrius alexandrinus*) Curlew (*Numenius tenuirostris*) Redshank (*Tringa totanus*) Stint (*Calidris minuta*) Drepanoskalidra (*Calidris ferruginea*) Pratincole (*Glareola pratincola*) Geloglarono (*Sterna nilotica*) Sandwich (*Sterna sandvicensis*) Little Tern (*Sterna albifrons*) Whiskered (*Chlidonias hybrida*) Mikrogaliantra (*Calandrella brachydactyla*)
Greece, Region: Ionian Islands Prefecture: Corfu	Diapontia Islands (Othonoi, heather, Mathraki and islets)	GR082	1,021	Falcon (*Falco eleonorae*)
Greece, Region: Ionian Islands Prefecture: Corfu	Lagoons Corfu	GR083	1994	Egret (*Casmerodius albus*) Cormorant (*Phalacrocorax carbo*) Curlew (*Numenius tenuirostris*)
Greece, Region: Ionian Islands Prefecture: Lefkada, Kefalonia	Echinades Islands, Kalamos, Atokos	GR084	7,714	
Greece, Region: Ionian Islands Prefecture: Lefkada, Kefalonia	Holy Mountains Loud and Red Back Kefalonia	GR085	17.304	
Greece, Region: Ionian Islands	West and north of Zakynthos	GR086	12.536	Petroperdika (*Alectoris graeca*) Shag (*Phalacrocorax aristotelis*) Falcon (*Falco eleonorae*)

Administrative structure	Name	Code	'Area (ha)	Items characterization
Prefecture: Zakynthos				Olive-tree Warbler (*Hippolais olivetorum*) Sardinian Warbler (*Sylvia melanocephala*) Warbler (*Sylvia cantillans*) Asprokolina (*Oenanthe hispanica*) Fryganotsichlono (*Emberiza caesia*) Viticulture (*Emberiza melanocephala*)
Greece, Region: Ionian Islands Prefecture: Zakynthos	Nisides Strophades	GR087	142	Artemis (*Calonectris diomedea*)
Greece, Region: Western Greece Prefecture: Aetoloakarnanias	Lake Amvrakia	GR089	2,035	Cormorant (*Phalacrocorax carbo*) Karatzas (Sterna caspia)
Greece, Region: Western Greece Prefecture: Aetoloakarnanias	Mountains Akarnanika	GR090	42,750	Petroperdika (*Alectoris graeca*) Griffon (*Gyps fulvus*) Bonelli (*Hieraaetus fasciatus*) Int *Woodpecker* (*Dendrocopos medius*) Jackdaw (*Corvus monedula*) Olive-tree Warbler (*Hippolais olivetorum*) Sardinian Warbler (*Sylvia melanocephala*) Warbler (*Sylvia cantillans*) Vrachotsoponakos (*Sitta neumayer*) Asprokolina (*Oenanthe hispanica*) Blue Rock Thrush (*Monticola solitarius*) Fryganotsichlono (*Emberiza caesia*) Viticulture (*Emberiza melanocephala*)
Greece, Region: Western Greece Prefecture: Aetoloakarnanias	Lakes Trichonida and Lysimachia	GR091	13.296	Ferruginous (*Aythya nyroca*)
Greece, Region: Western Greece Prefecture: Aetoloakarnanias	Aitolikou Messolonghi lagoons, deltas and estuaries Acheloou Evinos	GR092	46.887	Wigeon (*Anas penelope*) Pochards (*Athya ferina*) Glossy Ibis (*Plegadis falcinellus*) Cormorant (*Phalacrocorax carbo*) Kestrel (*Falco naumanni*) Griffon (*Gyps fulvus*) Curlew (*Burhinus oedicnemus*) Oystercatcher (*Haematopus ostralegus*) Avocet (*Recurvirostra avosetta*) Thalassosfyrichtis (*Charadrius alexandrinus*) Curlew (*Numenius tenuirostris*) Pratincole (*Glareola pratincola*) Geloglarono (*Sterna nilotica*) Karatzas (Sterna caspia) Little Tern (*Sterna albifrons*) Mikrogaliantra (*Calandrella brachydactyla*)

Administrative structure	Name	Code	'Area (ha)	Items characterization
Greece, Region: Western Greece Prefecture: Achaia, Ilia	Nun lagoon, forest and swamps Strofylia Lamia	GR098	5,812	Bittern (*Ixobrychus minutus*) Stilt (*Himantopus himantopus*) Thalassosfyrichtis (*Charadrius alexandrinus*) Marsh (*Tringa stagnatilis*) Stint (*Calidris minuta*) Olive-tree Warbler (*Hippolais olivetorum*)
Greece, Region: Western Greece Prefecture: Ilia	Lagoon Kotychi	GR099	2,956	Glossy Ibis (*Plegadis falcinellus*) Egret (*Casmerodius albus*) Egret (*Egretta garzetta*) Kestrel (*Falco naumanni*)

The marine and coastal area of the Adriatic and Ionian Seas are characterized as one of the main bird migration routes in the Mediterranean and is a welcoming place for wintering and breeding for many species of birds. Indicative is the case of areas of NATURA 2000 in the prefecture of Corfu that are coastal ecosystems. A special feature that unites these regions of the Northern Ionian Sea is their connection through one of the main migration routes which is followed by the wild bird species that fly from Africa to Greece and vice versa. These areas are especially the lagoon Korission, Saltmarsh Lefkimmis and Lagoon Antinioti that compose an extensive wetland complex with multiple value for migration, breeding and wintering birds. The importance of this wetland complex of Corfu features during spring and autumn migration. Especially in the spring, when large numbers of migratory birds from Africa are arriving, they "collect" wetlands as vital centers of rest, feed and shelter after such a painful and costly energy journey.

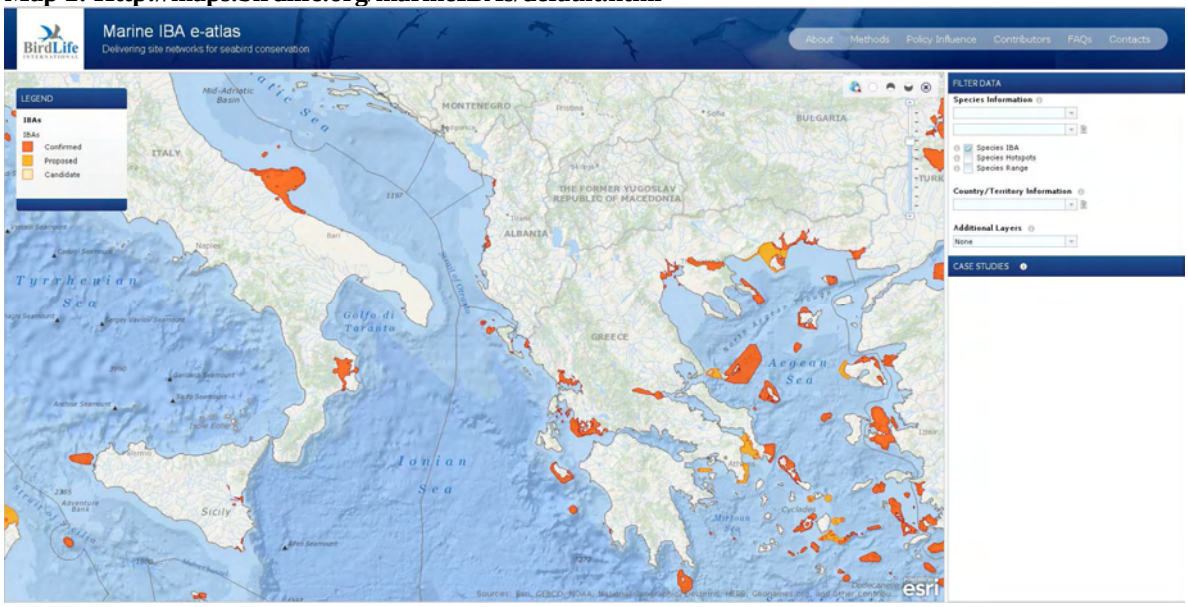
The variety of habitats that is found in these coastal wetlands of Corfu includes lagoons (Coressus, Antinioti and Chalikopoulou), saltmarsh (Lefkimmis) and freshwater marshes and dunes (Korission-Antinioti) and favors the visit from many breeding species birds. In parallel and during the difficult period of the winter, these wetlands are an attraction for many more species that arrive there from the Nordic countries, as the wetland maintains strong water element and the weather remains relatively mild. In these areas, during the above-mentioned period, each observer-lover of wildlife can enjoy the numerous species of waterfowl and birds of prey. Indeed, the value of wetland ecosystems for birds, is still more apparent in years of intense weather events and prolonged cold, where the wetlands of NorthEasten Greece are abandoned by wintering species of our country, seeking refuge in wetlands with milder weather as they of Corfu.

Based on the above-mentioned, it is understood that wetlands of Corfu are potential areas for the development of a particular type of alternative tourism on the bird-watching, which is a popular pastime for many tourists coming from abroad and they want to combine spring holidays in the Greek islands and the opportunity to observe a huge variety of bird species (eg case Lesbos).

In the study area there are a total of 11 marine Important Bird Areas (mIBAs), both of which relate to the area of Puglia (Adriatic) and nine in the Ionian region of interest (Map 2, Table 2).

Marine Important Bird Areas			
Country	**Name**	**Code**	**Species**
Italy	Tremiti Islands	IT077	Artemis (*Calonectris diomedea*)
Italy	Gargano Promontory and Capitanata Wetlands	IT203	Slender-billed Gull (*Larus genei*), Black headed gull (*Larus melanocephalus*)
Greece	Small islands (Othonoi, heather, Mathraki)	GR082	Artemis (*Calonectris diomedea*), Shag (*Phalacrocorax aristotelis*)
Greece	Lefkimis Alikes (Corfu)	GR083	Cormorant (*Phalacrocorax carbo*)
Greece	Estuaries Kalama	GR074	Cormorant (*Phalacrocorax carbo*) Little Tern (*Sternula albifrons*)
Greece	Ambracian Bay	GR081	Mafrovoutichtari (*Podiceps nigricollis*), Cormorant (*Phalacrocorax carbo*), Little Tern (*Sternula albifrons*) Geloglarono (*Sterna nilotica*), Sandwich (*Thalasseus sandvicensis*)
Greece	Echinades Islands	GR084	Shag (*Phalacrocorax aristotelis*)
Greece	Aitolikou Messolonghi lagoons, deltas and estuaries Acheloou Evinos	GR092	Cormorant (*Phalacrocorax carbo*) Geloglarono (*Sterna nilotica*), Karatzas (*Hydroprogne caspia*), Little Tern (*Sternula albifrons*)
Greece	West and north of Zakynthos	GR086	Shag (*Phalacrocorax aristotelis*)
Greece	Islands Strophades	GR087	Artemis (*Calonectris diomedea*)

Map 2: Http://maps.birdlife.org/marineIBAs/default.html



6.2.1.3 Marine life

Cetaceans

According to Frantzis *et al.* (2003), the presence of several species of cetaceans in the region of the Ionian Sea is significant. Species such as *Physeter macrocephalus*, *Ziphius cavirostris*, common dolphin (*Delphinus delphis)*, *Stenella coeruleoalba*, *Grampus griseus* and *Tursiops truncates,* are species of marine fauna in the Ionian Sea. It is worth noting that 2 cetacean species found in the Ionian Sea are characterized as Endangered: the *Physeter macrocephalus* and the common dolphin (Legakis & Carpenter, 2009). The *Stenella coeruleoalba* and and *Tursiops truncates* Dolphin are characterized as Vulnerable, while for the *Ziphius cavirostris* and *Grampus griseus* there are insufficient data.

Mediterranean Monk Seal (*Monachus monachus*)

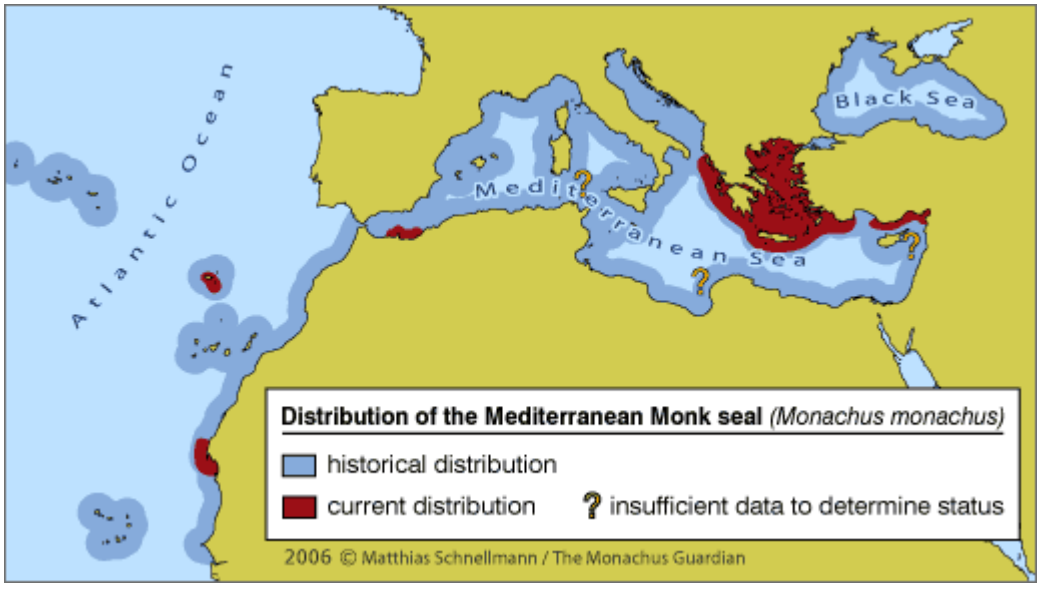
In Greece, the species characterized as Critically Endangered according to the Red Book of Endangered Animals of Greece, remains widely distributed in almost all coastal and island country, with the exception of two "closed" bays, the Amvrakiko and Corinth, where the last fifteen years observations of seals have not been found (Map 3). Higher frequency of apperance is found in isolated, rocky and inaccessible islands and coastal areas by avoiding the intense human activities (Adamantopoulou *et al.* 1999a). The current data show, however, that in most areas the populations are quite limited in size. Important breeding population of the species have been found in the wider area of interest and more specifically the islands of Zakynthos and Kefalonia (Panou *et al.* 1993).

The monk seals, although they spend most of their lives in water, they necessary use and terrestrial habitats for resting, but mainly to give birth and nurture their young. Nowadays, monk seals use as terrestrial habitats the well sheltered sea caves, located in remote or inaccessible coastal and island locations.

Nowadays, the main threats for the population of the Mediterranean monk seal in Greece (Androukaki *et al.* 1996, Johnson *et al.* 2006) are:

- distortion and progressive destruction of coastal ecosystems and consequently the available habitat of the species, mainly due to growing various human activities (construction on the coasts, tourism, industry, fisheries),
- mortality, primarily due to deliberate killing of seals
- mortality due to trapping seals in fishing gear,
- reduction of available food because of overfishing,
- pollution of the marine environment,
- random events such as the outbreak of disease in a population.

Picture 1: Distribution of monk seal



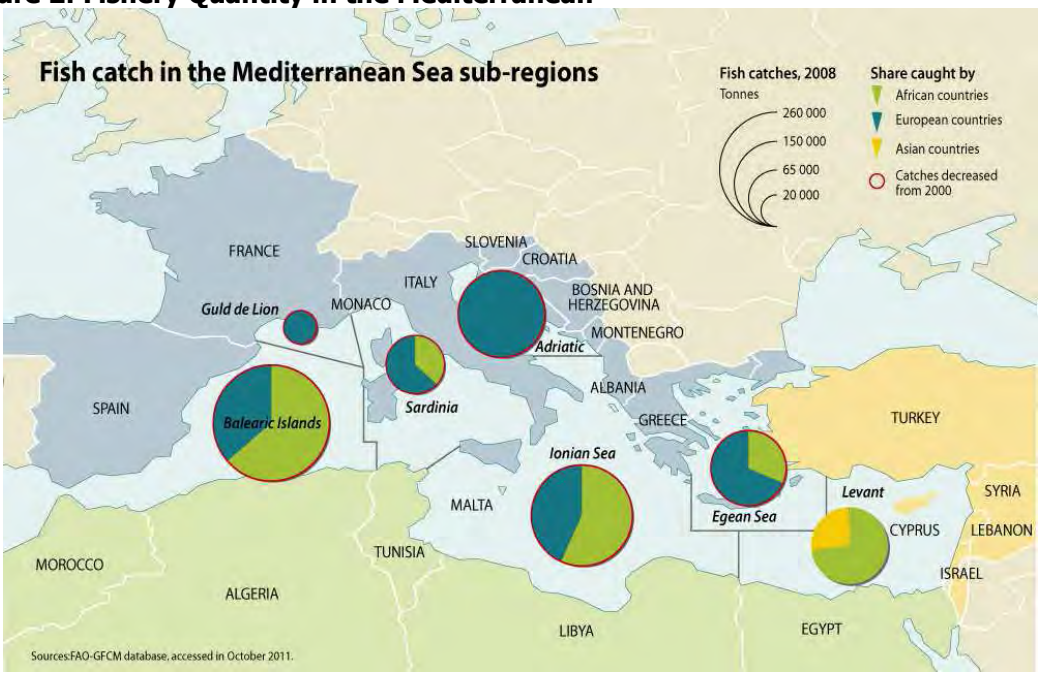
Pisces

The fish fauna in the Ionian Sea and inland water ecosystems is quite significant, so the fishing is well developed in the Ionian Sea and coastal wetlands. In coastal wetlands, there is a significant degree of endemism of fish populations with characteristic example the Ioniki Trout (*Salmo farioides*). The species is endemic of the Western Balkans (river basins flowing into the Ionian and Adriatic), but the phylogenetic and systematic research of populations has not been completed (Kotellat 1997, Delling 2003). Therefore, although the current image of many populations remains unclear, in Greece the most recent description of this

taxon is found in seven basins (Alpheus, Mornou, Evinos Achelous, Arahthos, Aoou and Kalama) (Kottelat & Freyhof 2007, Economou *et al.* 2007). Another typical case is the endemic *Knipowitschia milleri*. The species is endemic to the lower reaches of the river Acheron (Epirus). It is not known to be present in other neighboring water systems. The population is considered rare because of intense predation by eels. In marine species such as Epinephelus marginatus, the Thunnus thynnus thynnus, the Acipenser naccarii, the Isurus oxyrinchus, the Mobula mobular, the Fox Sea (Alopias vulpinus), the Valencia letourneuxi, are included in the Red Data Book of Greece and Italy.

It should be noted that the important primary productivity near coastal areas of mainland Greece and Italy faced the Ionian, create suitable conditions for the development of aquaculture eg bream and eel. Intense fishing pressure leads in some cases in trapping-killing species of marine fauna such as seabirds, marine turtles and cetaceans. The Ionian basin is considered highly productive for Fishery. Nowadays, the exploitation, however, is not sustainable, and many of the commercial species is overfished.

Picture 2: Fishery Quantity in the Mediterranean



6.2.1.4 Amphibians - Reptiles

The list of key species of amphibians - reptiles of Annex II and IV of Directive 92/43/EEC found in the area of monitoring, is presented in Table 1. The same table lists the species that belong to any risk category of the lists of IUCN (International Union for Conservation of Nature) and the Red Book of endangered species of Greek space. Most of the species listed in Table 1 are common species with large geographic distributions in Europe, East Asia and

even Africa. None is a local endemic, but some are endemic of Greek area such as the lizards *Algyroides moreoticus* and *Anguis cephallonica* and the turtle *Testudo marginata*.

Table 3. List of species of amphibians - reptiles found in the study area.

Type (according to Directive 92/43 / EEC)	Group	Fri II	Παρ. IV	IUCN	Red Book[1]
Ablepharus kitaibelii	Reptiles - Lizards		1		
Algyroides moreoticus	Reptiles - Lizards		1	NT	NT
Algyroides nigropunctatus	Reptiles - Lizards		1		
Cyrtopodion kotschyi	Reptiles - Lizards		1		
Lacerta trilineata	Reptiles - Lizards		1		
Ophisaurus apodus (= Pseudopus apodus)	Reptiles - Lizards		1		
Anguis cephallonica	Reptiles - Lizards			NT	NT
Podarcis taurica	Reptiles - Lizards		1		
Elaphe quatuorlineata	Reptiles - Snakes	1	1	NT	
Elaphe situla (= Zamenis situla)	Reptiles - Snakes	1	1		
Telescopus fallax	Reptiles - Snakes		1		
Vipera ammodytes	Reptiles - Snakes		1		
Coluber najadum (= Platyceps najadum)	Reptiles - Snakes		1		
Emys orbicularis	Reptiles - Turtles	1	1	LR / NT	NT
Mauremys caspica (= Mauremys rivulata)	Reptiles - Turtles	1	1		
Natrix Natrix	Reptiles - Turtles		1	NT	VU
Podarcis sicula coerulea	Reptiles - Turtles		1		
Testudo hermanni	Reptiles - Turtles	1	1	NT	VU
Testudo marginata	Reptiles - Turtles	1	1		
Testudo graeca	Reptiles - Turtles	1	1	VU	
Bufo viridis (= Pseudepidalea viridis)	Amphibians		1		
Hyla arborea	Amphibians		1		
Hyla intermedia	Amphibians				DD

LR: Lower Risk - VU: Vulnerable - EN: Endangered - NT: Near Threatened.

The largest threats to reptiles listed in the Red Data Book of Greece and Italy are the anthropogenic destruction and degradation of habitats. This is mainly due to uncontrolled urbanization, the development of agriculture, the mining and forest fires. The populations of very small islands are extremely vulnerable to any form of pressure (such as natural disasters, anthropogenic disturbance etc).

The Loggerhead Sea Turtle (*Caretta caretta*) is one of the most important species of marine fauna in the area of interest. It is spread worldwide and nests in temperate and subtropical regions. In Greece the most important nesting areas are located in Zakynthos, Peloponnesus

[1] Reports in the Red Books of Greece and Italy

(Kyparissia Bay, Laconic gulf) and Crete (Rethymno, Chania Bay). Other areas are the Munda (Kefalonia), Kotychi beach, Koroni etc (Margaritoulis *et al.* 2003). In the Mediterranean, an average of about 5,000 nests are recorded per year, of which Greece is hosting about 60%. Of the nests found in Greece, 43% are identified in Zakynthos and 19% in Gulf Kyparissiakos (Margaritoulis *et al.* 2003). The long-term population trends of species are indirectly detected by the number of nests and the results have shown that in Zakynthos and the Gulf Kyparissiakos there is not any particular trend (Margaritoulis & Rees 2001, Margaritoulis 2005).

The turtle is a migratory species and passes two ecological phases, the "ocean", where it lives in the open sea and feeds on pelagic organisms, and "niritiki" in which frequents coastal waters and feeds on benthic organisms. Part of turtles nesting in Greece migrate after spawning, in two main trophic areas in the Mediterranean, the Gulf of Gabes in Tunisia and in the northern Adriatic (Margaritoulis 1988, Margaritoulis *et al.* 2003). During the breeding season (May-August) nest 1-4 times of 110-130 eggs per nest (Margaritoulis 2005).

Nowadays, the main threats of the species in Greece are:

- The degradation of nesting sites and adjacent marine area due to coastal structures (buildings, marinas) and tourist activities (lights, vehicles, umbrellas, speed, etc.).
- Effects of fishing activities (mainly injuries due to fishing gear and deliberate abuse)
- Predation (mainly eggs). It is mainly due to foxes on nesting areas of the Peloponnese, in proportion more than 40% of nests.

The turtle is protected by the international, Community and national legislation. This includes the Convention CITES, the Bonn Convention, the Protocols of the Barcelona International Convention and the Berne Convention. Also included as a priority species in Annex II of the Habitats Directive (92/43/EEC). In national legislation, it is being protected by Presidential Decree (PD) 617/80, which prohibits fishing, collecting chicks and destruction of eggs and PD 67/81, which prohibits the capture, trade, abuse, killing and occupation.

It should be noted that the spawning areas in Zakynthos and the maritime area of Laganas Bay are included in the National Marine Park of Zakynthos, established in 1999 (Dimopoulos 2001). In 1994, the environmental organization WWF Hellas area protected the most important turtle nesting beach of Kareta from the tourist development: Secania area. The Secania area is today the core of the National Marine Park of Zakynthos. Also, parts of spawning areas in the Gulf Kyparissiakos are included in the Network Natura 2000.

6.2.1.5 Terrestrial mammals.

In the wide interest area, important mammalian species are identified, as mentioned in the description of protected areas, many of which are endangered, such as Bears (Ursus arctos, only Pyndo), wolves (Canis lupus), otters (Lutra lutra), jackal (Canis aureus), deers (Capeolus capreolus), Rupicapra rupicapra, Sus scrofa, lynx (Lynx lynx) andMartes martes & Martes foina). Also, the Lepus europaeus and the wild rabbit (Oryctolagus cuniculus), are characteristic species of fauna of Greece as well as various species eg bats (Nyctalus lasiopterus) and long-eared bats (Plecotus auritus). In Puglia there are important colonies of the bat Chirotteri minacciati.

6.2.1.6 Protected Areas: Status and Management

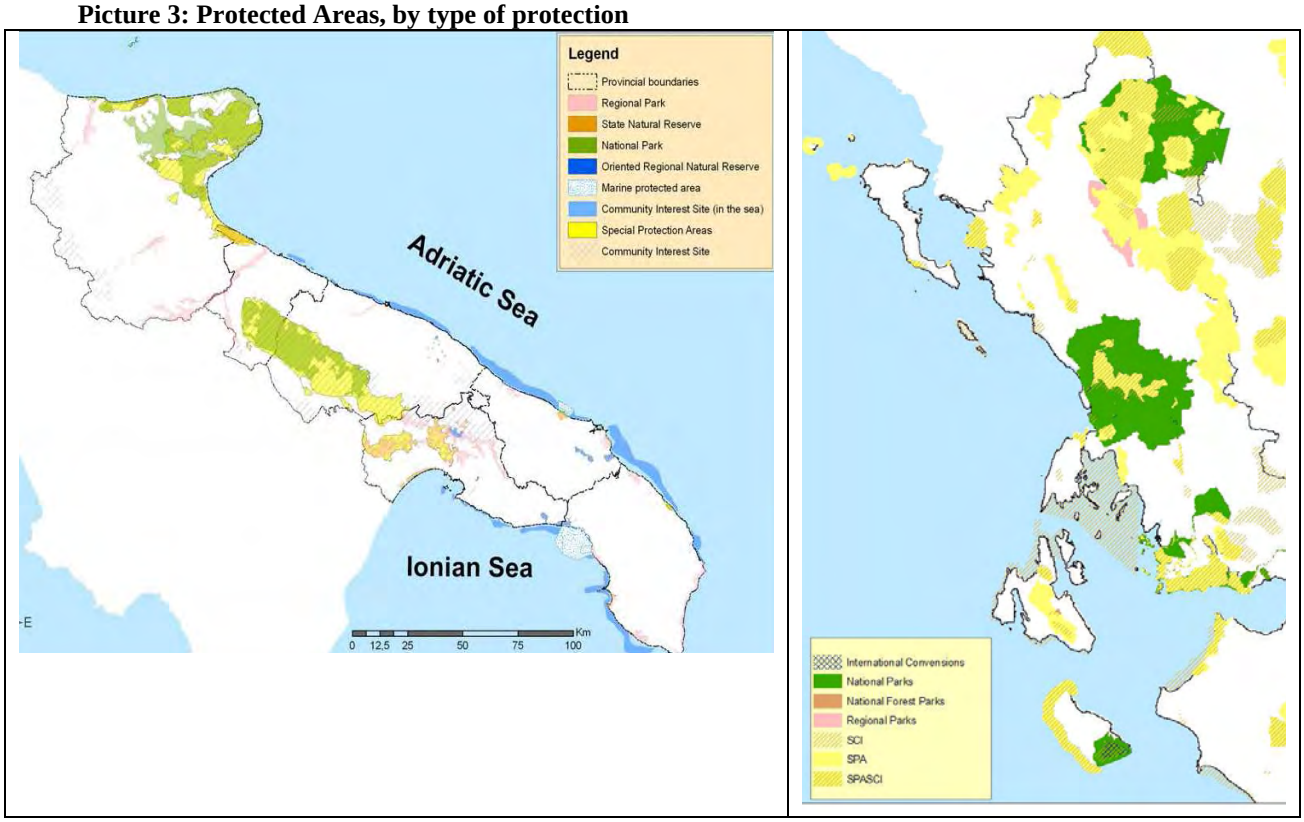
A significant part of the area consists of areas that have been included in the Network Natura 2000. All of these areas are shown on the map below. Beyond the SPAs, for which reference has been made above, in the Network Natura 200 are also included the Special Areas of Conservation (SACs) of Directive 92/43 / EOK.

In Puglia there are a total of 21 Sites of Community Importance (SCI), 18 of them are referred to coastal and marine areas and 3 of them concern only marine areas. In the first category are as follows: Isole Tremiti (IT9110011), Duna di Campomarino (IT9130003), Torre Colimena (IT9130001), Bosco Tramazzone (IT9140001), Stagni e saline di Punta della Contessa (IT9140003), Torre Guaceto e Macchia S. Giovani (IT9140005), Litorale brindisino (IT9140002), Palude del Conte-Dune di Punta Prosciutto (IT9150027), Porto Cesareo (IT9150028), Palude del Capitano (IT9150013), Litorale di Ugento (IT9150009), Alimini (IT9150011), Le Cesine (IT9150032), Torre Veneri (IT9150025), Aquatina di Frigole (IT9150003), Montagna Spaccata e Rupi di San Mauro (IT9150008), Rauccio (IT9150006), Litorale di Gallipoli e Isola S. Andrea (IT9150015). These are as follows: "Posidonieto Isola di San Pietro-Torre Canneto (IT9130008)", "Posidonieto Capo San Gregorio-Punta Ristola (IT9150034)" and "Posidonieto San Vito-Barletta (IT9120009)".

Similarly, in the Greek area there are 43 areas of Network Natura 2000: GR2210001, WEST SND WESTEASTERN COAST OF ZAKYNTHOU, GR2210002, GULF OF LAGANAS (GULF GERAKI - KERI) AND NISIDES Marathonisi & Peluso), GR2210003, STROFADES ISLANDS, GR2210004, NISIDES Stamfani & Harpies (STROFADES), GR2220001, MOUNTAIN OF KEFALINIAS, GR2220002, NATIONAL PARK OF AINOS, GR2220003, INNER ISLANDS ARCHIPELAGOS (MEGANISSI, ARKOUDI, ATOKOS, VROMONAS), GR 2220004, COASTAL ZONE OF ARGOSTOLI TO VLAHATA (KEFALLINIA) AND COVE MOUNTA, GR2220005, WEST COAST KEFALLINIAS - NARROW KEFALLINIAS ITHACA - NORTHERN ITHACA CAPE GERO GKOMPOS – DRAKOY PIDIMA - KENTRI – AG.IOANNIS), GR2220006 KEFALLONIA: AINOS, AGIA DYNATI AND KALON MOUNTAIN, GR2230001, LAGOON ANTINIOTI (CORFU), GR2230002,LAGOON KORISSION (CORFU)GR2230003, SALTMARSH LEFKIMI (CORFU), GR2230004, ISLANDS PAXOI - ANTIPAXOI, GR2230005, COASTAL MARINE AREA FROM

CANONI TO MESONGHI (CORFU) GR2230007, LIMNOTHALASSA KORISSION (KERKYRA) & ISLAND LAGOYDIA, GR2110001, AMVRAKIKOS BAY, DELTA LOUROU & ARACHTHOU (PETRA MYTIKAS, GREATER REGION), GR2110002, ATHAMANON MOUNTAIN (FAIRY), GR2110004, AMVRAKIKOS GULF, AND LAGOON KATAFOURKO AND KORAKONISIA, GR2110006, VALLEY ACHELOOU AND MOUNTAINS VALTOU, GR2120001, MOUTH (DELTA) KALAMA, GR2120002, ELOS KALODIKI, GR2120003, LAKE LIMNOPOULA, GR2120004, STENA KALAMA, GR2120005, WETLAND KALAMA AND ISLAND PRASOUDIi, GR2120006, ELOS KALODIKI, MARGARITI, KARTERI & LAKE PRONTANI, GR2120007, STENA PARAKALAMOY, GR2120008, MOUNTAIN PARAMYTHIAS, STENA KALAMA AND ACHERONTA, GR2120009, MOUNTAIN TSAMANTA, FILIATQN, FARMAKOVOUNI, FARMAKOVOUNI, MEGALI RACHI, GR2130001, NATIONAL PARK VIKOS AOOS, GR2130002, KORYFES MOUNTAIN SMOLIKA, GR2130004, CENTRAL SECTION ZAGORIOU, GR2130005, LAKE IOANNINON, GR2130006, AREA METSOVOU (ANILIO – KATARA), GR2130007, MOUNTAIN LAKMOS (PERISTERI), GR2130008, MOUNTAIN MITSIKELI, GR2130009, MOUNTAIN TYMFI (KAMILA), GR2130010, MOUNTAIN DOUSKON, OREOKASTRO, FOREST MEROPIS, GORMOS VALLEY, LAKE DELVINAKIOY, GR2130011, CENTRAL ZAGORI AND EASTERN SECTION OF MOUNTAIN MITSIKELI, GR2130012, GREATER REGION CITY IOANNINON, GR2130013, GREATER REGION ATHAMANIKON OREON, GR2140001, MOUTH ACHERONTA (FROM GLOSSA TO ALONAKI) AND STENA ACHERONTA, GR2140003, SEA COASTAL ZONE FROM PARGA TO CAPE AGIOS THOMAS (PREVEZA), GULF KELADIO - AGIOS THOMAS

Picture 3: Protected Areas, by type of protection



RAMSAR Wetlands

The Ramsar Convention for protection of wetlands of International Importance, especially as Waterfowl Habitat, was signed on 02.02.1971 in the city of Ramsar in Iran and aims to protect important wetlands. In implementing programme area, six protected areas are identified based on the Treaty, three in each Member State, as shown in the table below.

Name	Date of inclusion		Area
Torre Guaceto	21/07/81	Puglia	940 ha
Saline di Margherita di Savoia	08/02/79	Puglia	3,871 ha
Le Cesine	06/12/77	Puglia	620 ha
Amvrakikos gulf [MR]	21/08/75	Aitoloakarnania, Preveza, Arta	23,649 ha
Kotychi lagoons [MR]	21/08/75	Ileia	6,302 ha
Messolonghi lagoons [MR]	21/08/75	Aitoloakarnania	33,687 ha

The Le Cesine. (Special Protection Area EC Directive; Natural Reserve, Wildlife Sanctuary) is a coastal, wetland complex, separated from the sea by a dune system. Habitats include open brackish pools, reedbeds and associated saltmarsh, bordered by Mediterranean scrub and woodland. The site is important for the nesting, staging and wintering of numerous species of waterbirds. Several rare plant species occur

The **Saline di Margherita di Savoia**. (Special Protection Area EC Directive Natural Reserve, Wildlife Sanctuary). A complex of salt pans connected with the sea, supporting salt-resistant vegetation and scattered reed and sedge beds. Up to 30,000 waterbirds of numerous species winter at the site. Human activities include commercial salt extraction, fish rearing and ecotourism.

The **Torre Guaceto** (Special Protection Area EC Directive; Wildlife Sanctuary, Marine Nature Reserve, State Natural Reserve). A small, brackish marsh dissected by a network of canals and separated from the sea by a dune system. The site includes adjacent shallow seas and several small islands. Vegetation associations of particular interest are supported, including a diverse aquatic community and areas of Mediterranean scrub. The marsh is an important staging area for several species of migratory birds and provides habitat for various endangered waterbirds. The site is of archaeological interest, owing to the presence of the remains of a Neolithic village. The site, subject to inputs of sewage and industrial effluent, was added to the Montreux Record in 1993 due to the various anthropogenic disturbances.

The **Ambrakikos gulf** (Special Protection Area EC Directive). A coastal inlet connected to the sea. The extensive delta of two rivers including freshwater marsh with the largest reedbeds in Greece, wet meadows and seasonally inundated land, lagoons, barrier spits, a major saltmarsh, and some of the most extensive tracts of riparian forest remaining in Greece. The area supports a rich reptile and amphibian fauna, is important for breeding, staging and wintering numerous species of waterbirds, and provides important feeding

grounds for nesting raptors. Nesting species include globally threatened *Pelecanus crispus.* Human activities include traditional fishing, intensive fish farming, livestock grazing, and (illegal) housing construction. Placed on the Montreux Record in 1990 because numerous human activities have modified the water balance, and the demand for irrigation water has led to increasing salinity levels.

The **Kotychi lagoons**. A large coastal lagoon of varying salinity, associated marshes separated from the sea by an extensive dune system, smaller lagoons and wet meadows. The system supports extensive reedbeds, salt-tolerant plants, and submerged aquatic plants. The coastal dunes are in excellent condition with well-developed vegetation. The site supports rich fish, reptile and amphibian faunas, and is also important for breeding, staging and wintering waterbirds. Human activities include traditional fishing, livestock grazing, cultivation and recreation. The surrounding areas are used for intensive agriculture. The site was placed on the Montreux Record in 1990 because of agricultural chemical inputs and grazing pressure.

The **Lagoon of Messolonghi.** (Special Protection Area EC Directive). An extensive complex of brackish coastal lagoons, mudflats, saltmarsh, freshwater marsh, reedbeds, dune systems and patches of riparian forest formed within the double delta of two rivers. The site is important for breeding, staging and wintering waterbirds and exhibits a considerable degree of endemism in plant and fish species. Wintering birds include large numbers of Anatidae (ducks, geese, swans, etc.), and the globally threatened *Pelecanus crispus*. Human activities include commercial salt extraction (80% of national production), fishing, fish farming, livestock grazing, agriculture, and illegal construction of resort housing. Various construction works led to soil deposition that changed the hydrology and geomorphology of the area. Intensive fishing techniques, cattle grazing, and illegal hunting cause problems. These issues led to the site's designation on the Montreux Record in 1990.

National Parks - Parks

The area has some of the most important National Parks of both Member States. Specifically, in the Puglia Region are:

The **Gargano National Park** is a protected area that was established in 1991 and located in Cape Gargano. It covers an area of 120.000 ha, of which 300,000 acres comprising the Foresta Umbra (Umbra Forest) and the Tremiti Islands. Particularly interesting is the morphology of that region. The Gargano National Park is one of the richest places in terms of biodiversity and is characterized by many different and rare habitats, many of which are under protection. In the park, are found over 2,200 species of plants, and is considered particularly important for species of wild orchid hosting. More than 170 species of birds have been found in the park. Among them are five different kinds of woodpecker. The place is also very important for birds of prey. Mammals include the presence of deer, among them the endemic subspecies *Capreolus capreolus italicus,* while there was formerly presence of

monk seals. Other species of interest include bats and reptiles which have been mentioned above.

The National Park **Alta Murgia** was founded in 2004 and located in the southern region of Puglia. The National Park in the context of the Network Natura 2000 network includes a Site of Community Importance (SCI) and a Special Protection Area (SPA). The primary objective of the Park is the conservation of natural resources and cultural heritage. The Alta Murgia national park is an important region-wide biodiversity of fauna and flora. The birds fauna includes about 75 species representing slightly less than half of all species that nest in Puglia. There are about 1,500 species of flora which is equal to 25% of the total biodiversity of Italian territory. It combines natural heritage with cultural elements (Castel del Monte and the ruins of Castle Garagnone) and strong folklore regions of southern Italy. This is an attractive factor for tourists of various nationalities and different qualities.

In Greek areas of the programme are found:

The **National Park of Enos Kefalonia**, the highest mountain in Kefalonia (1,628 m), is National Park since 1962. It has an area of nearly 30,000 acres, the 2/3 of which are covered by the world's only species of fir, the endemic Abies cephalonica. Within the national park shelter also several species of fauna such as foxes, badgers and population of semi-wild horses.

The **National Park of Pindos,** also known as Valia Calda, is located in a particularly inaccessible mountain range of Pindos in the boundary between the prefecture of Grevena and Ioannina. The total area reaches 68,990 acres. It is particularly characterized by the variety of morphological contrasts with steep cliffs, raging torrents and dense forests. It is located at an altitude of 1400 meters and surrounded by mountains with an altitude of over 2000 meters. The forest protects its rich fauna and flora, with particular emphasis on the perennial pines. The park is covered by extensive forests of pine and beech and many species of endemic plants of the Balkans and Greece. The valley is surrounded by mountains around Valias.

Also, the flora and fauna of the area is very rich. It hosts more than 80 bird species (11 of which are raptors) and some are protected. Some of these birds are hawks, buzzards, eagles as well as woodland birds and nocturnal. It is a shulter for all sorts of wild animal. Other rare mammals that live there are the deer and the wildcat. The rivers of the valley have two rare species of trout (Trutta fario and Salvelinus fontinalis). In addition, there are many species of mushrooms and reptiles like vipers, lizards, salamanders, Astritis. Seven of these species are protected throughout the world.

The **National Park of Vikos-Aoou** is an area of protected natural resources, north of the city of Ioannina, in Zagori of Epirus. It was officially declared as a national park in 1973 and is bordered to the northeast with the National Park of Pindos. The area is part of the European network of protected areas Natura 2000 and known for the dramatic changes in the landscape: lush verdant areas and steep cliffs.

The area of Vikos-Aoou includes the Vikos Gorge, which is the core of the park and part of the range of Tymfi, and a series of preserved traditional settlements. There have been over 1,700 species and subspecies of plant species, for instance there are 18 species of geranium and 43 clover species. At least 50 species of forest trees and shrubs have been recorded in the park boundaries. In this park, some rare endemic species in Greece are grown that attract scholars worldwide. The dense forests of the park consists of willows, beech and poplar. In higher elevation zones, oaks are dominated. The fauna of the park include 24 species of mammals, many of which are endangered: bears, wolves, deer, wild goats, wild boars, lynxes, martens. Also, in the park live 133 species of birds, including several raptors: eagles, vultures, hawks, and some fish species.

The **National Marine Park of Zakynthos.** The National Marine Park was established in 1999 and includes the Bay of Laganas. The Marine Park is the first marine park that was established in Greece and the Mediterranean for the protection of sea turtles *Caretta caretta*. The protected area includes the marine area and the islands of the Gulf of Laganas, the nesting beaches of sea turtles, and a coastline that surrounds them, the wetland of Keri, Marathonisi and Islands of Strophades (located about fifty kilometers south of the island). The ecosystem is a nesting area for sea turtles, and includes dune systems, *Posidonia oceanica* and coastal ecosystems. In these species are found hundreds of rare flora and fauna.

The **National Park of Messolonghi-Etoliko Lagoons**, of lower flow, of Acheloos and Evinos rivers delta and of Echinades islands" (Official Government Gazette 477/31 May 2006). The park is located in Etoloacarnania prefecture, in the south end of Sterea Ellada where Patraic gulf meets the Ionian Sea and where Evinos and Acheloos rivers fall. This location includes lagoons, land and fluvial areas of the southern part of Etoloacarnania prefecture and the island complex of Echinades of Kefallinia prefecture. These areas are distinctive for their great biological, ecological, aesthetic, scientific, geological / morphological and environmental value.

The Messolonghi lagoon - Etoliko is the largest of the country and the largest in the Mediterranean. Nowadays, based on the geomorphology of the area as a result of anthropogenic interventions during 1960-1995, it consists of a six lagoons that are relatively isolated from each other and have different physicochemical characteristics. Its area reaches 150,000 acres, while the surrounding area includes the coastal wetland ecosystems, wetlands, land that were attributed to agriculture. Several lagoons are under protection as wildlife sanctuary and the forest Lesini has been declared as Biogenetic reserve.

The wetlands of Messolonghi are knownh for their rich birdlife. Over 285 species of birds have been counted, of which 220 (77%) are observed regularly every year.

The **National Park wetlands Ambrakikos**. The vegetation in the wetlands consists of several individual plant communities. Very often, transitions between different vegetation structures are observed and are associated with the variability of soil conditions and water

quality. The complex of wetlands of Ambrakikos Gulf is characterized by a great diversity of bird life in particular. The last 15 years, 254 bird species are found, of which 230 occur regularly every year and 78 species occur throughout the year. 126 species of the birds in the region are listed as endangered and protected in the European Union and six (*Aythya nyroca, Haliaeetus albicilla, Falco naumanni, Pelecanus crispus, Numenius tenuirostris, Larus audouinii*) of the found species have been globally threatened. Among the global endangered species of particular importance is the presence of globally threatened species *Pelecanus crispus* (Dalmatian). The aquatic mammal *Lutra lutra* (Otter) lives around wetlands (rivers, lakes and marshes) and is a species threatened with extinction. In the coastal area of the Ambrakikos Gulf are found some aquatic species such as monk seals *Monachus monachus* and the turtle *Caretta caretta* without having identified nesting sites on the coast.

The **National Park ofvTzoumerkon**, Peristeri and and gorge Arahthos, is an open land area of about 900 sq.kilometres and is located in mountainous regions of the prefectures of Ioannina, Arta and Trikala (Central part of the Pindos mountain range). It includes two major mountain ranges: the Lakmo (Peristeri) and Athamanika mountains (or Tzoumerka). The large height differences (144m.-2.429m.) and the strong presence of the water element contribute to the creation of a diversified mosaic of habitats. In different habitats, many rare or endemic species are grown. In the terrestrial ecosystems in the region 17 habitat types and 30 types and subtypes of aquatic habitats have been found. In different habitats many rare and protected species of mammals are found such as the otter, the brown bear, the chamois. The region is also particularly important for bird populations, and recorded hundreds of species of invertebrates, fish, amphibians and reptiles.

The **National Park wetlands of Kotychi Strofylia** is a protected area in the prefectures of Achaia and Ilia. Part of the park is the Black Mountains, the Forest Strofylia, the Lamia Lake, the Lake Prokopios, the Kotychi Lagoon, the Lake Pope, the Larissos river, the cape Araxos, the archaeological site of the Wall Dymaion and beaches of Kalogria. It was proclaimed as a national park in 2008, has a total area of 143,000 acres and is protected by the international Ramsar Convention and Natura 2000.

The park is a wildlife sanctuary and a rich wetland with many, artificial canals, rivers, lagoons and dunes. The Forest Strofylia has area of 22,000 acres. The park shelter ducks, herons, otters, glossy ibis, foinikopetroi, coots, pelicans, nanoglarona, waders, marsh harriers, many species of amphibians, reptiles, rodents, turtles, foxes etc.

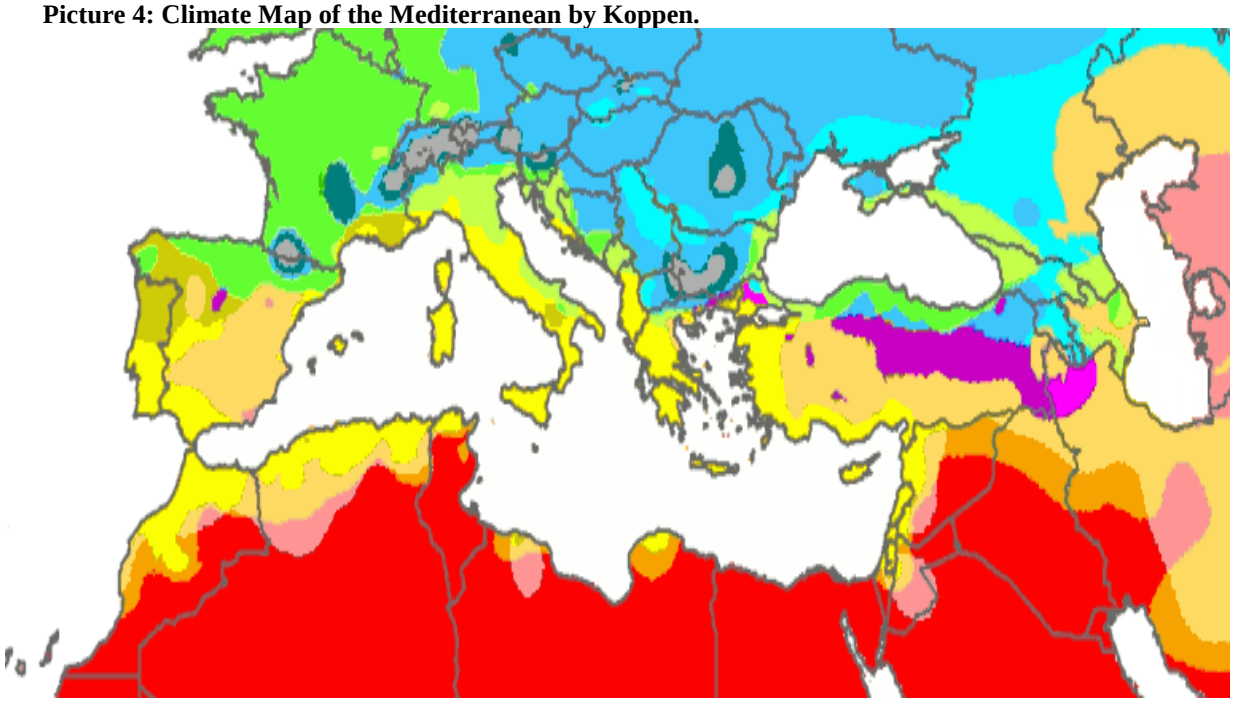
6.2.2 Abiotic Environment: climate, air, soil, water

6.2.2.1 Climatological factors

The climate of the border region is characterized as Mediterranean, with the exception of the hilly and mountainous areas of Thesprotia and Ioannina, where the Continental climate is identified.

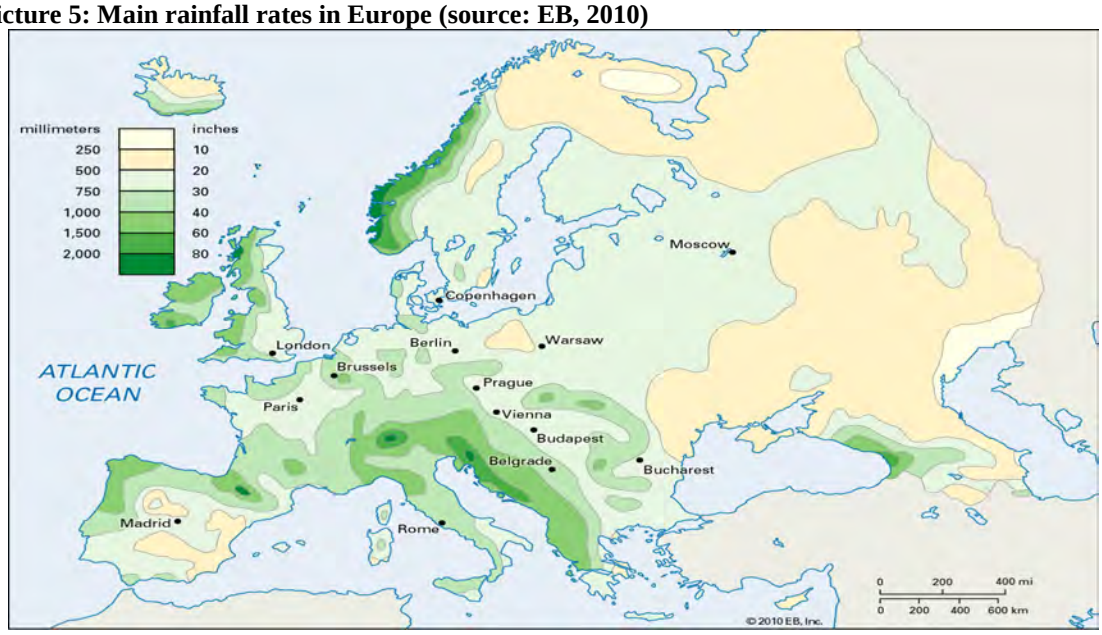
The Mediterranean climate is characterized by mild winters with relatively small annual temperature range and warm summers. During the winter, rains are marked and snowfalls are rare and of short duration .Summers are hot and the Temperature reach significant levels after June.

Picture 4: Climate Map of the Mediterranean by Koppen.



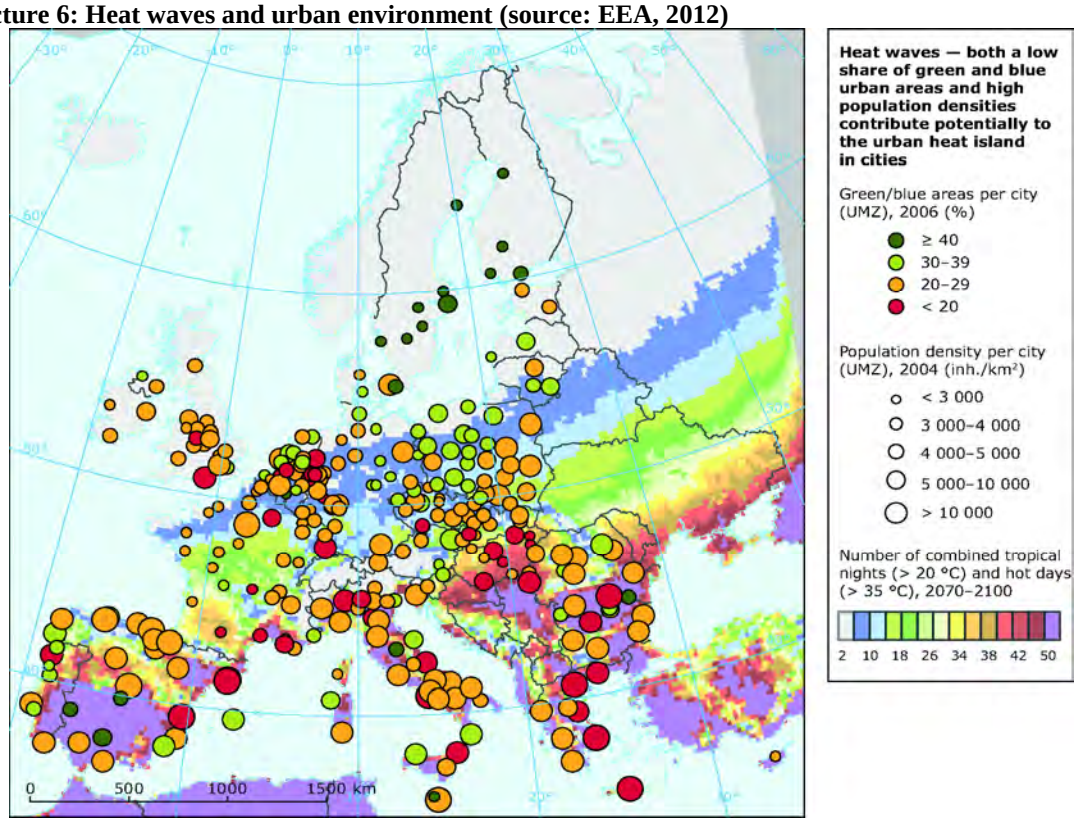
Significant differences between the two areas of the cross-border area is rainfall. Influenced by the orography of the area, the rainfall is much higher in the region of Epirus and the Ionian Islands in relation to Puglia (alike with climate of southern Peloponnese).

Picture 5: Main rainfall rates in Europe (source: EB, 2010)



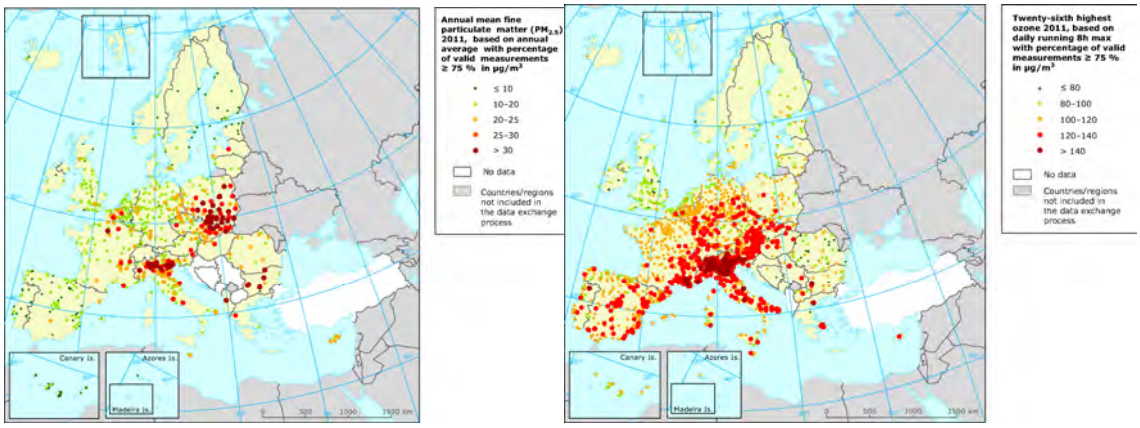
The area is characterized (as almost all the Mediterranean zone), as particularly vulnerable to the impacts of climate change and especially the increase in heat phenomena. This increase is a major threat to forest ecosystems and the population mainly in urban centers.

Picture 6: Heat waves and urban environment (source: EEA, 2012)



6.2.2.2 Air Quality

Regarding air quality, the data of monitoring network of pollutants of European Environment Agency (EEA) shows a satisfactory condition in most categories of pollutants. The exception is the presence of increased amounts of ozone in Puglia and high values of PM25 in Ioannina.



In relation to the contribution to the formation of the Climate Change, the national data of UNUN show that the two Member States have significantly higher per capita emissions of GHG's with trends of reduction - balancing in accordance with the set objectives. Significant difference shows the dependence of the economy on the emissions of CO2, with Greece having about twice the production of CO2 / € compared with Italy.

Table 5 Per capita emissions GHG (tn of CO2)

	1990	2008	2009	2010	2011
Greece	10.4	11.7	11.1	10.5	10.5
Italy	9.2	9.1	8.2	8.3	8.1

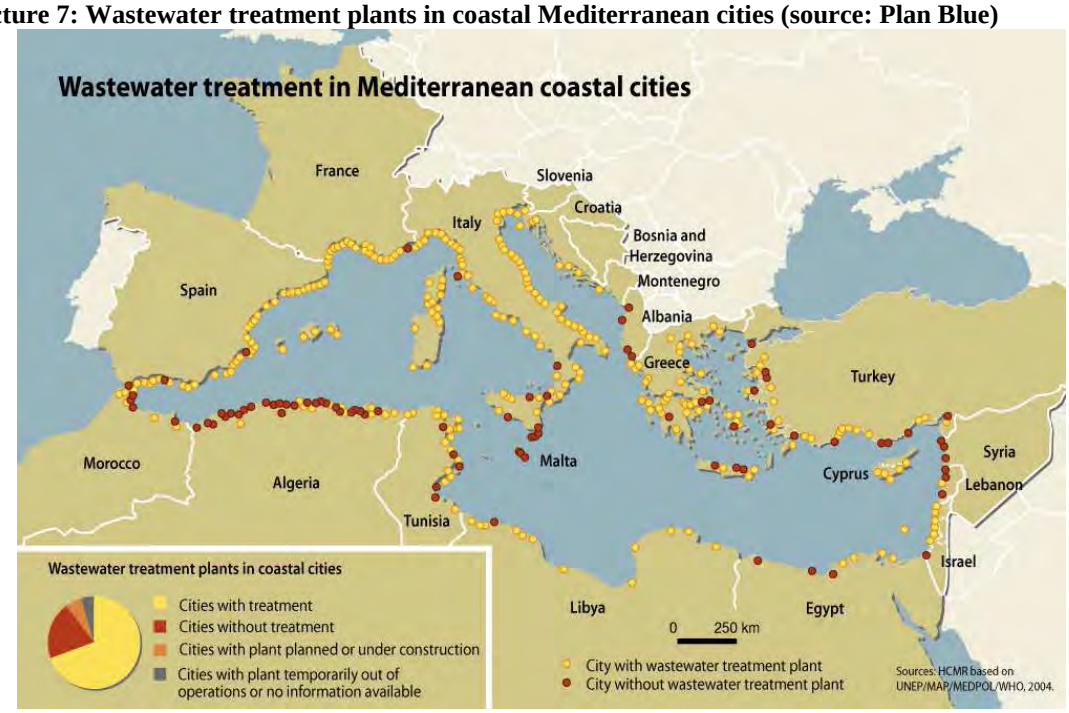
Table 6 GHG to GDP (gr CO2 / €)

	1990	2008	2009	2010	2011
Greece	836	626	615	605	651
Italy	445	367	353	353	346

6.2.2.3 Water

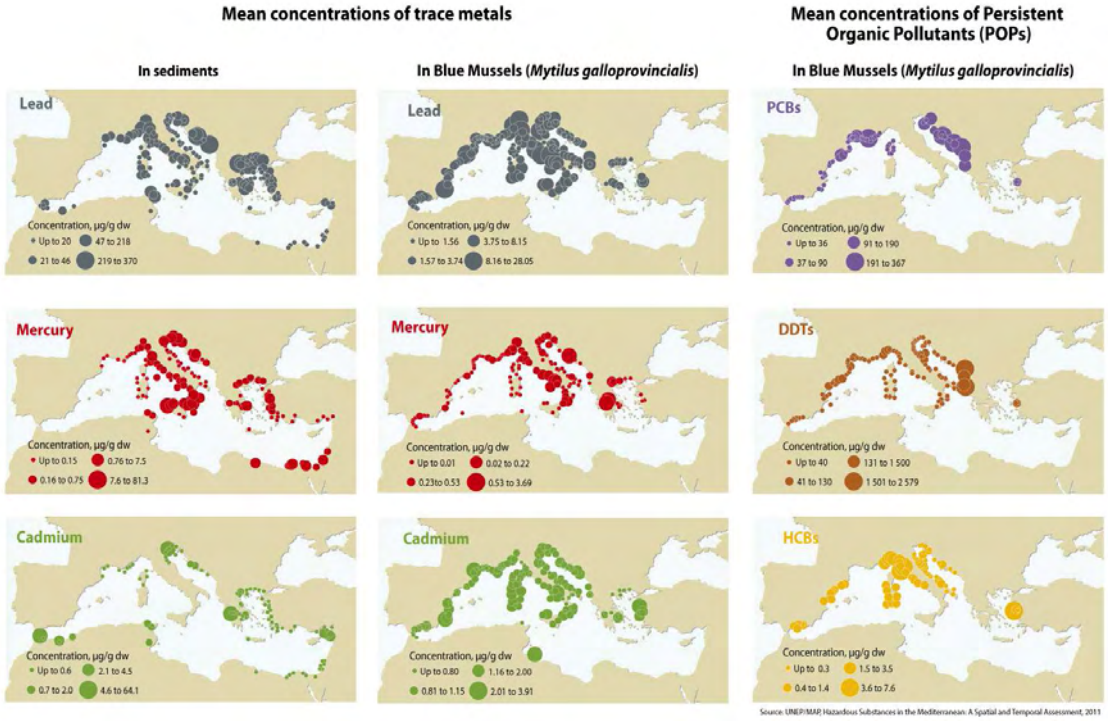
Wastewater of Puglia and the Ionian are usual disposed in the sea after treatment (Picture 7). In Puglia, 25-30 treatment plants are operating and the waste have a total capacity of approximately 1,750,000 residents / equivalent. Furthermore, most of the treatment plants are using subsea pipelines in order to facilitate the faster dissolution and dispersion of the sewage.

Picture 7: Wastewater treatment plants in coastal Mediterranean cities (source: Plan Blue)



The water quality varies from the Adriatic Ionian as the concentrations of heavy metals (Metals (cadmium, lead, mercury) are used as a biological indicator for mussels (*Mytilus galloprovincialis*) and appear to be increased in the Puglia (Picture 8). Significant levels of contamination are observed in northern Corfu from increased values of organochlorinated compounds DDTs in Albania.

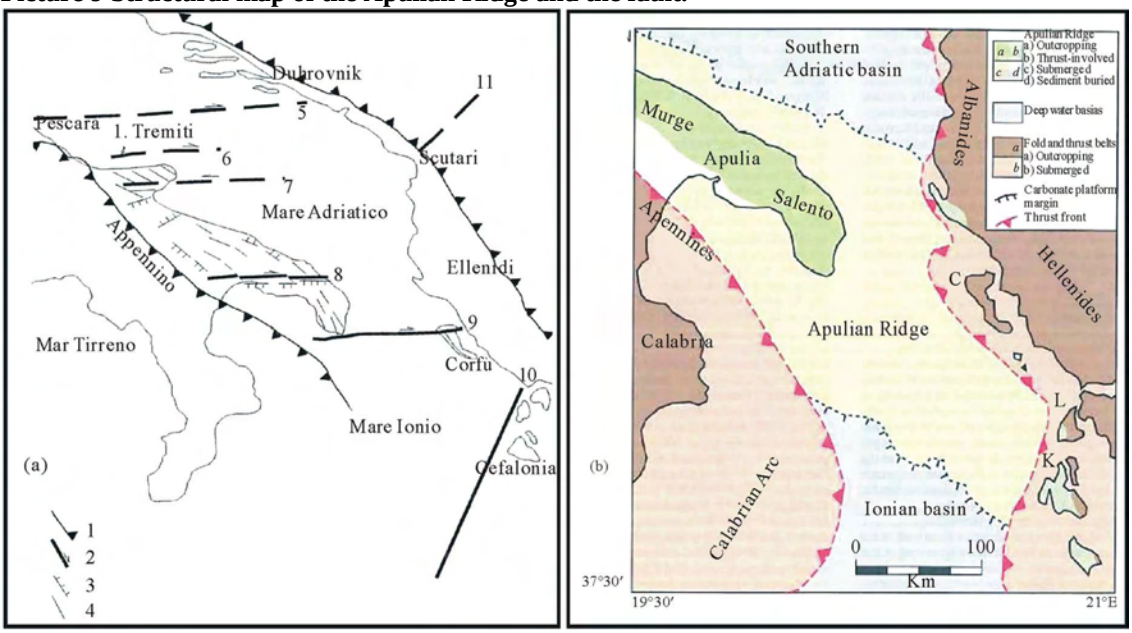
Picture 8: Measurements of organic pollution in the Mediterranean



6.2.2.4 Soil

The main feature of the soil (terrestrial and undersea) of the cross-border area is the Apulian Ridge which includes the region of Puglia, the Adriatic - Ionian Seas, the Ionian islands and coasts of Epirus and the northern part of Western Greece.

Picture 9 Structural map of the Apulian Ridge and the fault.[2]

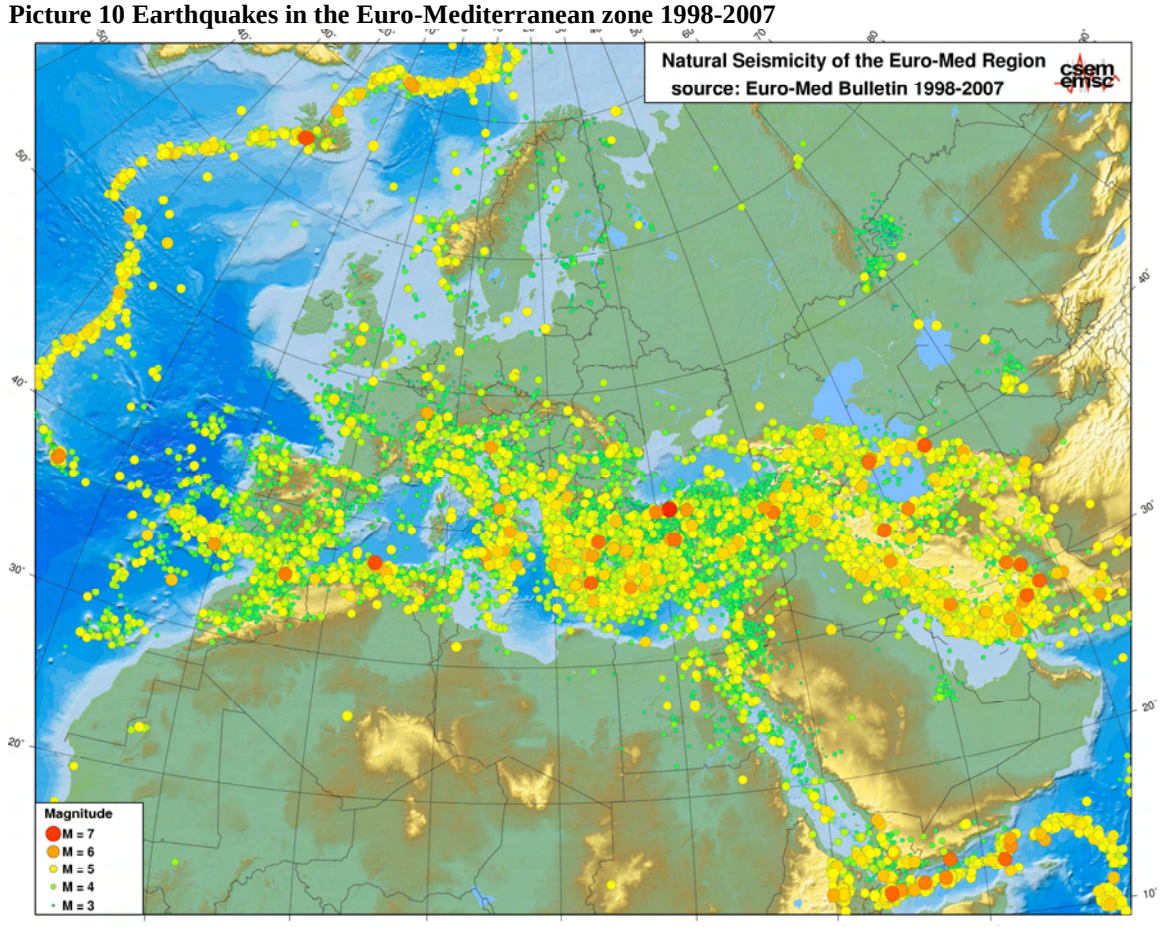


The compressive force due to the clockwise rotation of the Adriatic Sea - Apulia plate causes the generation of surface earthquakes along the west coast of mainland Greece, Albania and the former Yugoslavia, but also in the western part of Apulia.

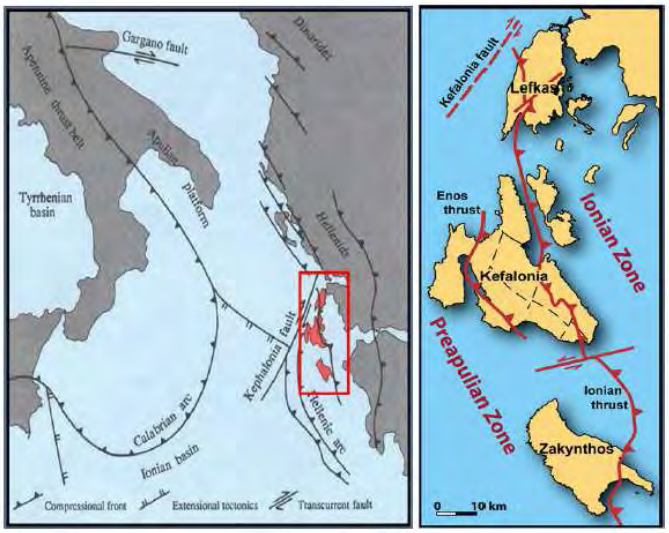
The seismicity in the region is particularly strong, as shown in Picture 10 below, with the most vulnerable area of the Ionian Islands, in which earthquake are historically and recently recorded with significant human loss and property damage.

[2] Analysis of the Low-Energy Seismic Activity in the Southern Apulia

Picture 10 Earthquakes in the Euro-Mediterranean zone 1998-2007



The Ionian Islands that are located in the western part of the Greek Arc, are the most active margin tectonic plates of the Mediterranean region. The tectonic nature of the region is defined by the continental collision between the north-western Greece, and east of the Apulian platform, and by the subduction of the African plate beneath the Aegean microplate along the active Greek Arc to the southwest. The Ionian Islands are located on a transitional zone between the northwestern edge of this active subduction and continental collision. The main tectonic structure of this transition zone is the Kefalonia fault zone, which represents the active microplate boundary between the Aegean and the Apulian platform (Karakitsios et al 2010). These geological features interpret the intense seismic activity that develops in the Ionian region (Fig. bellow).

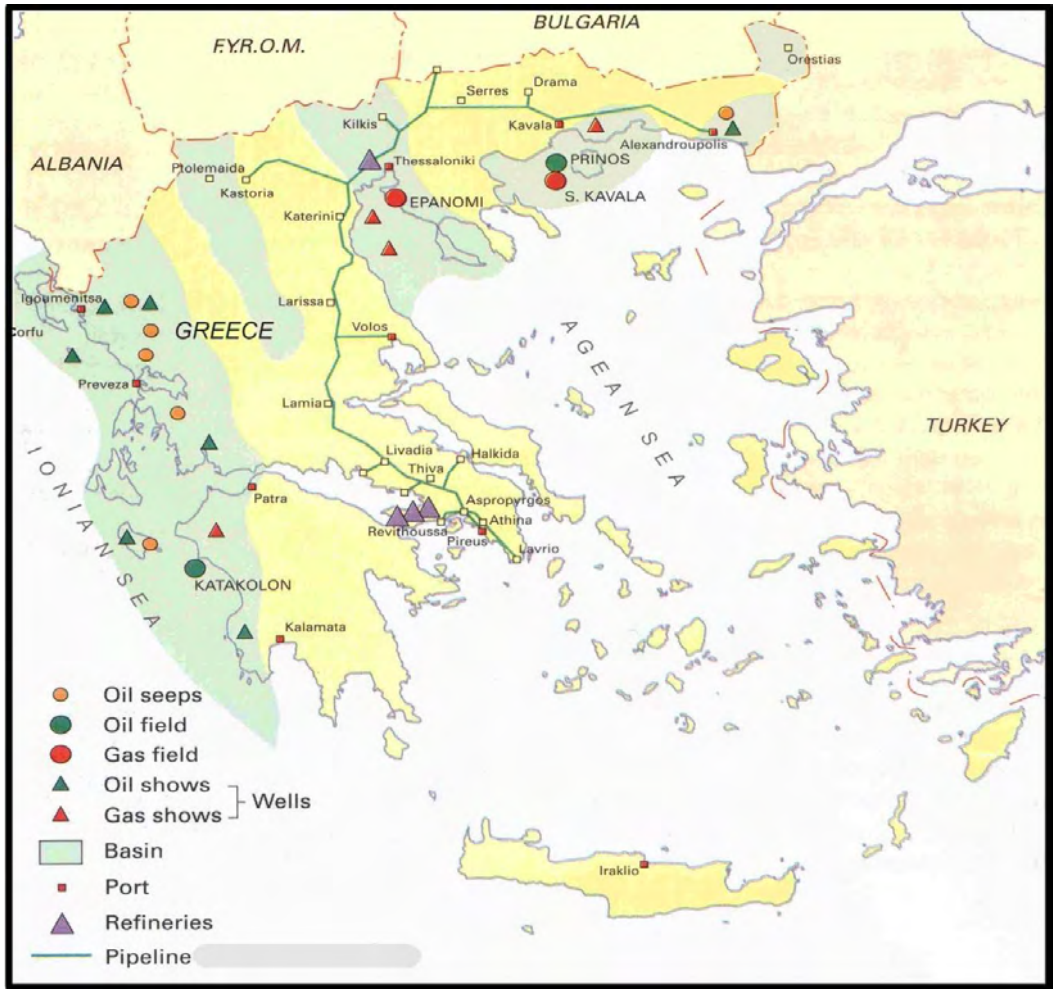


Another important problem of the coastal zone is the issue of erosion of the coastal zone. In the Region of Puglia, in accordance with the SHAPE, various positions with significant erosion are identified along the coastline in both the coastal area of Lecce (North and South of San Cataldo), and in the Barleta, and other areas of the National Park of Grangano.

6.2.2.5 Energy resources - Geothermal

In the southern Adriatic, south of the peninsula of Gargano, the geology changes significantly and even the deeper carbon moiety has been shown to contain a number of heavy oil fields. A few oil discoveries have been made which, with the recent increases in oil prices, can now be considered as commercially exploitable. For the northern part of the Ionian, Puglia platform has been studied in Italy and Albania, where it have been identified significant deposits of oil and gas, associated with geological formations belonging either to the Mesozoic sequence, either in the Miocene and Pliocene, creating the potential for liquid hydrocarbons.

The geological structure of the narrow and the wider region of the Ionian Islands contains strong evidence of hydrocarbon deposits. Regarding the deposits around Corfu, called 'Pyrrhus' and 'Achilles', the geological basin located in the Apennine mountains of southern Italy, which extends to the Ionian Sea (Kefalonia & Zakynthos) and passes through the Gulf of Taranta. In particular, according to the available data, in the Gulf of Patras, Ioannina, Corfu and Katakolon, oil reserves are almost proven at least 300-500000000 barrels. Also, in the southeastern part of the island of Zakynthos, it has been observed that there are traces of oil ject at relatively shallow depth (200-500 metres). Specifically, it has been observed during periods of intense flow of tar in Keri Lake, located in Zakynthos in the west of the bay of Laganas, which is dried during the summer months.



So far, previous shallow drillings have not indicated the existence of specific sources of liquid or gaseous hydrocarbons, which are economically exploitable.

6.2.3 Population – Land Use – Production and settlement structure

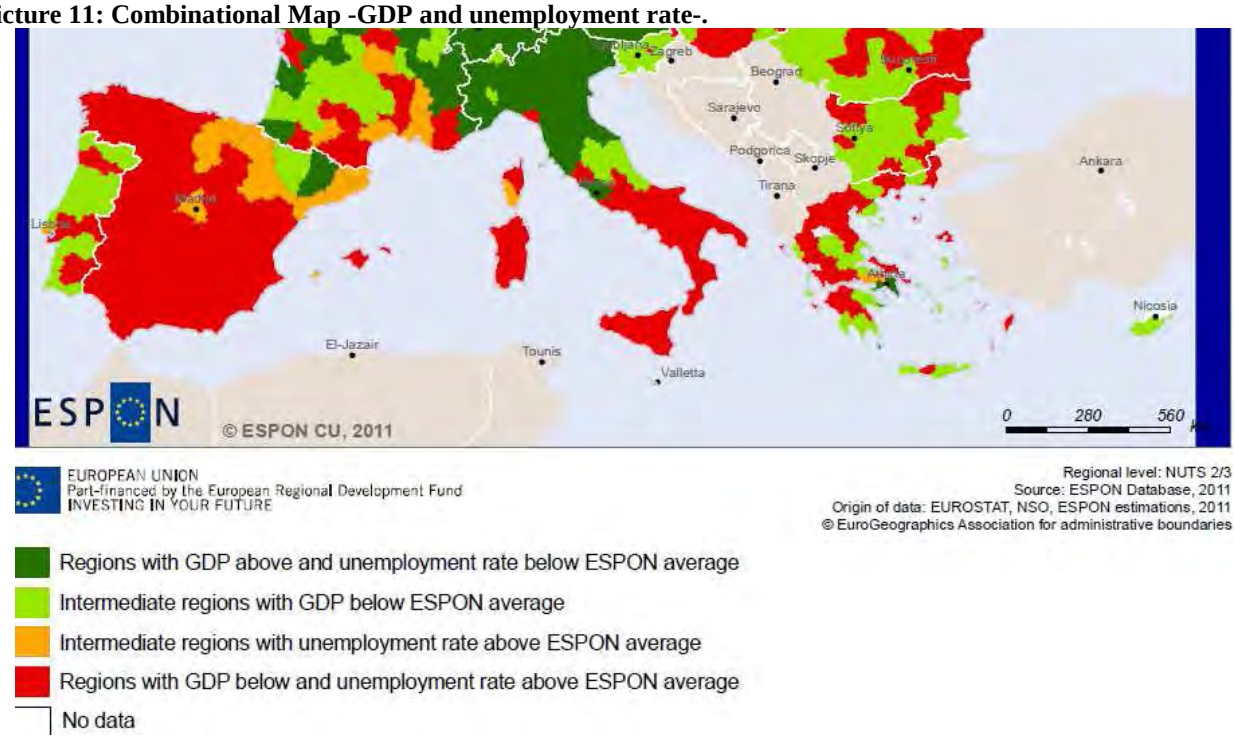
6.2.3.1 Employment and Income

The countries bordering the Adriatic and Ionian Sea show large differences in the level of economic development. Coastal regions of Puglia are characterized by high population density and urbanization while non-residential areas are limited. The Puglia region includes 68 municipalities with most popular cities: Bari and Taranto. The total population of the coastal municipalities is 1,718,759 inhabitants (ISTAT, year 2011) which corresponds to a population density of 316 inhabitants / km2.

The study area includes the Ionian area with the Ionian Island region with a total population of 206.814 inhabitants, the Epirus Region with a total population of 133.042 inhabitants in coastal municipalities and the Western Greece Region with a total population of 457.417 inhabitants in coastal municipalities.

In NUTS III level, the coastal areas of Italy have the largest GDP (> 24.000 €) at the Adriatic-Ionian level (Eurostat, 2011) and the ten Ionian coastal areas occupy the third position (average pcGDP = 15.000 €). At European level, the study area is below the average of the Gross Domestic Product of Europe and above average unemployment rate with exception the areas of Kefalonia, Lefkada, Thesprotia and Corfu (Picture 11). For the Greek region analytical data rates of GDP are available until 2010.

Picture 11: Combinational Map -GDP and unemployment rate-.



6.2.3.2 Primary sector

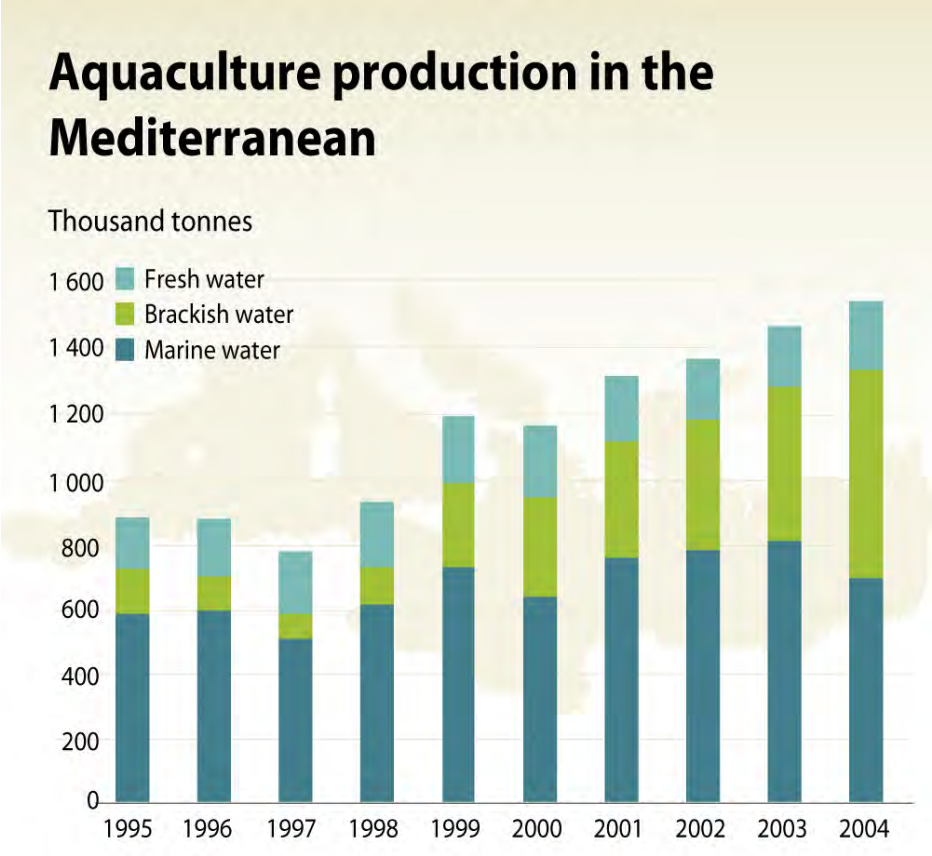
Puglia region has greater sectoral specialization in the primary sector in relation to the rest of Italy. The economy is specialized in oil production, wine making and animal husbandry.

The production system of the Ionian Islands Region is characterized by a high concentration of activity in the tertiary sector, decline in primary sector and steady state in the secondary sector. The economic crisis had a significant impact at all levels, but the greatest effect accepted the construction and the complex of 'trade, transport, accommodation and catering services". The primary sector, although it has enriched the traditional activities and crops (vines, olive coastal fisheries) with mainly local productions, maintains the chronic structural weaknesses.

The prefecture of Ilia ranks first in the primary sector in the Western Greece Region, followed by the prefecture of Etoloakarnanias and Achaia.

The rural economy of Epirus region is specialized in animal husbandry which is dominated throughout inthe domestic production and is the basis of significant activity in the secondary sector. The ¾ of highly productive agricultural land of the Region are gathered at the perfecture of Arta and Preveza. The largest exploitable forest land are found at the perfecture of Arta and Ioannina and animal husbandry farms are scattered in the Region. The primary sector has significant importance to the economic development of the Epirus Region. Beekeeping showed a strong growth in recent years. The favourable conditions for this activity are stemming from excellent environmental conditions of the area, the favorable incentives and financial support provided by national and Community programmes.

In the field of aquaculture in Epirus Region, regarding freshwater, the production of trout, bream and sea bass cover the largest part of the production.



Source: UNEP/MAP, State of the Environment and Development in the Mediterranean, 2009.

6.2.3.3 Secondary sector - mining

Despite the fact that Puglia is one of the least industrialized regions of Italy, it has an important production base that includes heavy industry sectors (petrochemicals in Brindisi and Monopoly, steelworks in Taranto) and an important production base based on SMEs in food (Foggia), clothing (Bari, Monopoly) etc.

In the Region of Ionian Islands, the secondary sector, shows higher shrinkage due to the crisis (the sectors of food, beverages and souvenir shops have been affected to a greater extent).

The secondary sector of the Western Greece Region shows lower participation rates by geographical area, but the prefecture of Achaia holds the first place in relation to other prefectures.

In the Region of Epirus, the manufacturing sector has a significant disadvantage and the indicator of industrial development is very low. The majority of manufacturing units in the region are mainly involved in the processing of primary products ie of animal husbandry and agricultural production and raw materials.

6.2.3.4 Tertiary sector

In the tertiary sector, tourism makes the difference. The Ionian Islands Region have gained a prominent position in the Greek tourism market (10% of overnights of the hotel accommodation in the country, 2010). However, some indicators (length of stay, occupancy, average revenue per room) reflect trends of stagnation or deterioration. Generally, this is a kind of "standard" tourism, of low added value. The trade sector is the second area which was affected by the crisis.

This situation is partially altered in recent years. There are a range of local products with certification of origin, and other with potential certification, while the aquaculture stands out as a dynamic industry. In the tourism sector, the rise of "marine tourism" (cruise and yachting) is identified, which brings the islands to international routes. Regarding foreign trade, food with a share of 86% is the main export industry in the region (seafood with 52, and oil with 33%).

Regarding the participation of the Western Greece Region in the tertiary sector at national and regional level, it is observed a relative equal distribution between the perfectures except the perfecture of Ilia (shows less participation due to its strong rural).

The tertiary sector in the Epirus Region has an important role both on participation in total employment and on the development of the total GDP of the regional economy. The tourism is considered as an important economic resource for Epirus, despite the peculiarities of the region.

6.2.3.5 Tourism

Tourism is one of the most important sectors of the economy of the Adriatic-Ionian Macro-Region. The long coastline of the area attracts a large number of tourists and a wide range of tourism infrastructure (accommodation, marinas, tourism services) have been developed in the coastal area. The main distinguished tourism category in the study area is leisure tourism which is concentrated in the coastal areas. Table 7 shows the capacity of beds and tourist arrivals in coastal areas of the Adriatic- Ionian Macro-Region for Italy and Greece.

Table 7: Number of total tourist accommodation and tourist arrivals (2012) (Source: Eurostat, 2014)

	Number of total tourist accommodation	Tourist arrivals
Greece	274.382	3921186
Italy	1902269	34,729,989
Adriatic –Ionian Macro-Region	3135664	51,274,657
Europe	28,390,959	492 515 102
Adriatic –Ionian Macro-Region / Europe	11%	10%

In the region of Puglia, municipalities of Foggia and Lecce have the highest density of bed while in the Ionian Region, the high concentration of beds is mainly observed on islands and in particular in Corfu, Lefkada and Zakynthos (Picture 12). The coastal areas of the Ionian Region that are located in mainland Greece does not show a high density of beds (Arta holds the last place in the following order).

Picture 12: Number of beds per Km2

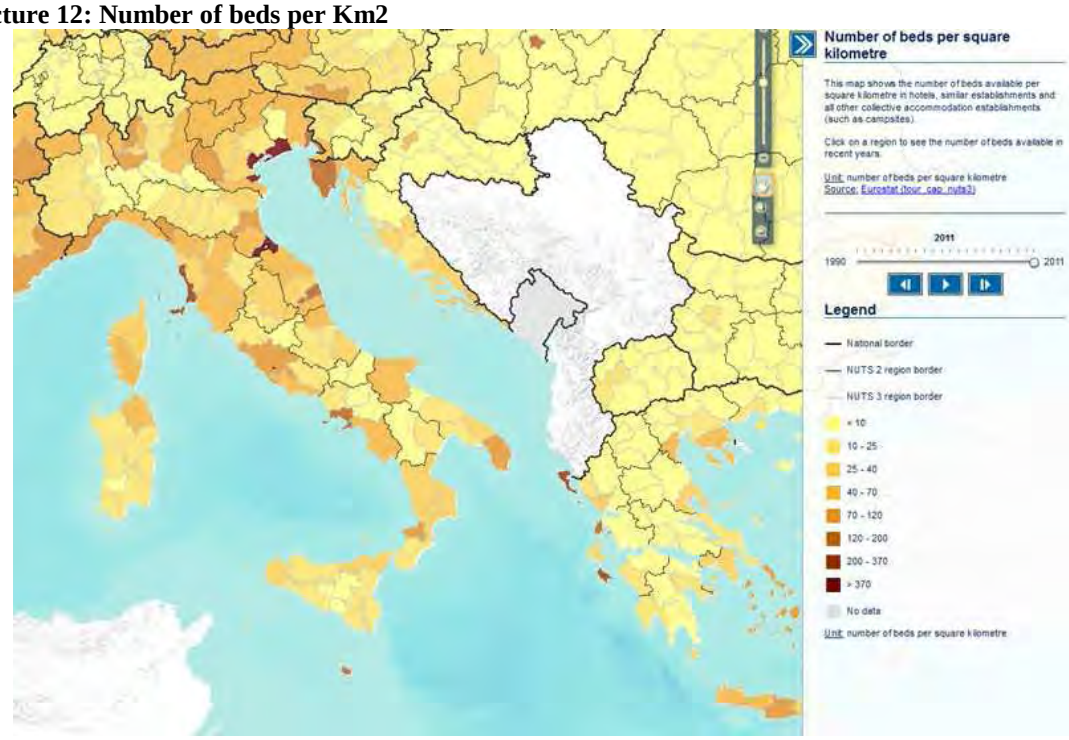


Table 8: Number of accommodation at NUTS 3 (2011) (Source: Eurostat, 2014)

		Number of tourist accommodation
Greece (Ionian region)	Arta	28
	Thesprotia	257
	Ioannina	386
	Preveza	543
	Zakynthos	890
	Corfu	4010
	Kefalonia	153
	Lefkada	1,007
	Athens	126
	Achaia	173
Italy (region Puglia)	Taranto	357
	Brindisi	507
	Lecce	1,888
	Foggia	987
	Bari	724
	Barletta-Andria-Trani	226

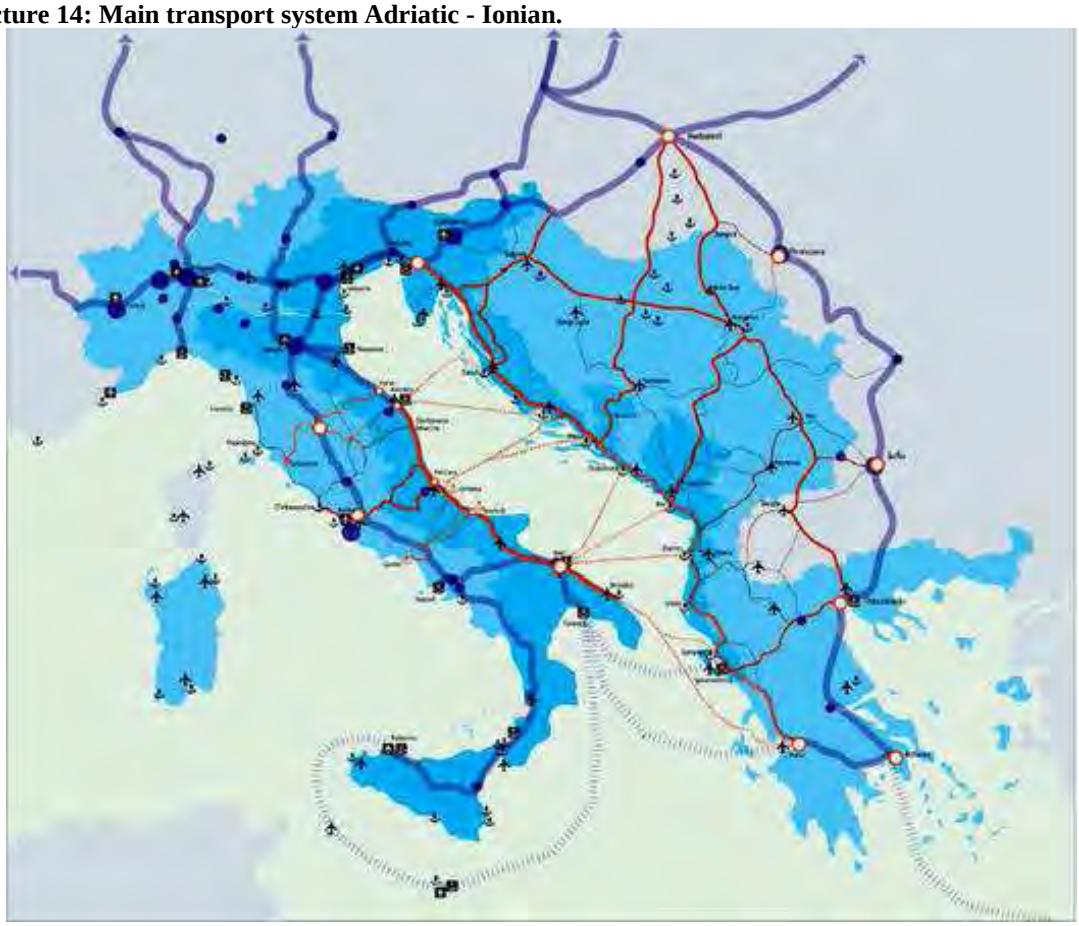
Tourism in the region of Puglia has recorded a steady increase in arrivals of tourists (domestic and foreign) in the last decade. Compared with the national average, the performance of tourism in Puglia is satisfactory. The tourist arrivals exceeded 3.2 million visitors showing a slight decrease of 0.1% compared to 2011. The economic crisis has influenced the tourist activity of domestic tourists as shown by the decrease of arrivals and the decrease in the average length of stay. In contrast, an increase in arrivals of foreign tourists by 16.7% (2011) to 18.0% (2012) is observed. The main tourist markets are Germany (+ 15.7% arrivals), France (+24.6% arrivals), and Switzerland (+ 22.8% arrivals), and hold the top three positions in the tourism market in Puglia.

6.2.4 Transportation

The so-called "Adriatic-Ionian corridor" is an area of great regional importance, which is of great interest since it includes two Member States, Italy and Greece.

Picture 13: Sea routes in the Mediterranean.

Picture 14: Main transport system Adriatic - Ionian.



In the Ionian islands Region, there are 95 ports, 20of which are operating as fishing shelters, 18 only for tourism purposes (marinas and yachts), 10 are passenger harbors serving coastal connections and the remaining 41 ports are harbor mixed use (cars, fishing, shopping). The ports are spatially distributed in the Ionian Region as follows: 41 in the municipality of Corfu, 18 in the municipality of Lefkada, 21 in the municipality Kefalonia, 6 in the municipality of Ithaca and 9 in the municipality of Zakynthos. One of the most important ports in Greece is the port of Igoumenitsa in Epirus, which was originally designed to serve as a nodal point of combined transport where (by also using Egnatia Odos), it will serve the connection between northern and central Greece. The port of Patras is an important communication channel in western Greece with the neighboring country of Italy. However, according to the table below, it is evident that, during the decade, the port of Patras has lost a significant number of passengers and the port of Igoumenitsa remains unchanged (except for truck traffic). Also, an important role for commercial transport has the port of Platygiali of Astakos, since it is able to accommodate a range of activities (eg, Ro - Ro, car terminal, general cargo, bulk cargo, etc) by attracting a large number users.

Table 9: Movement of Ionian Sea Ports

Year	**Passengers**		**Trucks**		**Wheeled**	
	Patra	**Igoumenitsa**	**Patra**	**Igoumenitsa**	**Patra**	**Igoumenitsa**
2000	1275986	1230706	292.660	129.263	237.116	327.564
2011	748.029	1107570	145.843	149.151	135.925	287.951

In Puglia Region, the largest port is located in Bari which is connected to the ports of Ancona, Durres, Igoumenitsa and Patras. These ports receive more than 30 ships over a week with an average capacity of over 1k passengers. The Puglia region has large and medium capacity ports, fishing ports, marinas and small docks. The main ports are located in the areas: Taranto, Bari, Brindisi, Monopoli, Barletta, Manfredonia and Gallipoli. The port of Bari receives two million passengers and about 65,000 cruise passengers.

The port of Brindisi mainly operates on transportation fuels, natural gas, chemicals and oil and is connected with Greece and Turkey. The port of Taranto area is one of the main ports of Italy concerning the transfer of goods and plays a very key strategic and commercial role in the interest area. The installation of a container terminal was recently completed with capacity handling and storage of about 2.000.000 TEU / year. Also, there are facilities to transport crude oil and many piers that serve the local steel plant.

The ports of other areas of Manfredonia, Monopoli, Barletta and Gallipoli are smaller in size but serve a large percentage of the transport of goods and passengers. The Puglia region has a total of 64 marinas and docks and around 10,000 piers.

6.2.5 Cultural Heritage and Landscape

The Adriatic –Ionian area has always been an exchanging channel for cultural goods and elements of the Mediterranean, several of which are included in places of cultural heritage UNESCO (

Picture 15).

The region of Puglia is one of the richest archaeological sites in Italy and hosts several testimonies of prehistoric, Greek and Roman settlements. In antiquity, the Puglia region was part of Magna Grecia stretching NE Apennine Mountains to the Adriatic, which they lived Messapians or Selentinoi, the Pefketioi, and Dafnioi or Apulia. From the 4th century BC, Puglia was occupied by the Romans and later became part of the Byzantine Empire. In 1041, it was conquered by Normans where Taras established the headquarters of the House of Angie. In 1734 Puglia received the Kingdom of Naples and in 1861 was united with the Kingdom of Italy. One of the most important archeological museums is located in the area of Taranto and was founded in 1887.

A large number of castles were built by Emperor Frederick II (13th century) including the Castle del Monte, which is one of the three monuments of UNESCO in the area of Puglia. The special interest of castle focuses on lack of features that are common to the vast majority of military structures of that period. Specifically, the double wall, the moat, stables, kitchens, warehouses and the chapel are absent. In contrast, there are mathematical and astronomical precision of form and design, the rigorous selection of cultural elements, derived from antiquity, the Cistercian tradition of northern Europe and the fortified monasteries of the Near East and North Africa. These features have given rise to explore the characteristics and symbolism to many researchers. Attribute monument of UNESCO are the Trulli of Alberobello, which are houses of limestone in the southern region of Puglia.

Regarding the Greek area, the archaeological site of Olympia in prefecture of Ilia is one of the greatest masterpieces of ancient Greek civilization. It is Located in a valley of the Peloponnese and was inhabited since prehistoric times. In the 10th century BC, Olympia became the center for the worship of Zeus. Apart from temples, there are the remains of all sports structures for the Olympic Games, which were held in Olympia every four years, starting in 776 BC.

Ancient Dodoni in Epirus was the most famous oracle of the ancient Greek world. It is located 2 miles away from the settlement of Dodoni and lies in a closed, elongated valley at the foot of Mount Tomaros in altitude 600 m. The Homeric epics are referred to this sacred oracle. The theater of Dodoni is the largest and best preserved ancient Greek theater, with a capacity of about 18,000 people. It was an integral part of the sanctuary of Dodoni and for the visitor, who arrived from the south, was the most visible monument. It was constructed in the 3rd century BC century, in the context of the ambitious building programme made by Pyrrhus, king of Epirus, in order to reshape the Panhellenic sanctuary, and to give

monumental character. The ancient stadium of Dodoni was built after the destruction of the first temple by the Aetolians in 219 BC and isdirectly related to the second phase of construction of the theatre. In stadium were held every four years the Naia, athletic games in honor of Zeus.

The old town of Corfu is cultural heritage of UNESCO, has its roots in the 8th century BC and is located in a strategic position at the entrance of the Adriatic Sea. The three forts of the town were designed by famous Venetian engineers and were used for four centuries to defend the maritime trade of the Republic of Venice against the Ottoman Empire. Over time, the forts were repaired and partly rebuilt several times. The most recent repair was under British rule in the 19th century. Characteristic feature is the high level of integrity and authenticity. The responsibility for protecting is shared by several organizations and related decisions. These include the Ministry of Culture and Sport (Decree of 1980), the Ministry of Environment, Energy and Climate Change (formerly the Ministry of Environment, Physical Planning and Public Works-Presidential Decree 1980) and the Municipality of Corfu (Presidential Decree 1981). An urban action plan, which is consistent with the management plan of the monument has been approved (2005) for the period 2006-2012 (UNESCO).

Picture 15: World Heritage Site

(Source: European Atlas of the Sea)

Marine archaeological in the Ionian Region sites are presented in Table 10. The Ministry of Culture and Sports has banned the use of these areas for tourism purposes

Table 10: Archaeological sites in Ionian Island Region

Corfu	Southwestern coast of Corfu (HMC / GDAPK / ARC / A1 / F43 / 59538/3993 / 3-11-2003)
Kefalonia	Archaeological site of ancient sea port area Loutrou, Sami HMC / ARC / A1 / F43 / 36545/1887 / 8-8-1994 (Official Gazette 647 / B / 26.08.1994)
	Enalios archaeological site north of the bay Giagana HMC / GDAPK / ARC / A1 / F43 / 62769/4286 / 11-11-2003
	Enalios archaeological site south bay Fiskardo HMC / GDAPK / ARC / A1 / F43 / 62772/4285 / 11-11-2003
Zakynthos	Shipwreck Zakynthos (GG 1701/2003)

Source: http://www.ienae.gr/index.php/latest-news?start=24 (2014)

In relation to landscape, the main pressures are referred to coastal zone and especially its degradation by tourism uses and residential / resort development. A significant cause of degradation is also the large forest fires which were occurred in 2007 in prefecture of Ilia. In order to protect the landscape in Puglia Region, a Regional Territorial Landscape Plan was put in place. Respectively in Greece, by reviewing the Regional Framework for Spatial Planning and Sustainable Development, at this stage, Regional Strategies for landscape protection are being formulated.

6.3 Possible evolution of the current state of the environment without the programme implementation

The maine aim of the programme is to financially support the implementation of individual Plans and Strategies that are referred to in the field of Smart, Sustainable and Inclusive growth and to territorial cooperation. Therefore, non-implementation of the programme would result in immediate cancellation of significant implementation of cooperation activities and the overthrow of their effectiveness.

Specifically, regarding the management and protection of the environment, non-implementation of the programme would have the following results by field:

Biodiversity: Collaboration is essential both for improving the conservation of marine endemic species of the common sea area, and for the coherence of ecological corridors that mainly connect the wetlands in the coastal zone. Main threats are associated with the expansion - intensification of important activities in the area (between them and the blue development) such as coastal and marine tourism, fisheries, coastal transport, etc.

Air - Air pollution: The collaboration focuses on common problems that have to do with the pollution generated in the nodes of ferry transport. Despite the fact that in the area there are not large urban centers, there are still problems of air pollution from urban and transportation sources.

Water: Although the water systems (territorial) between the two Member States are independent, there are still significant benefits of cooperation as the problems are identical. In the context of marine waters, cooperation is evident in order to support common action to protect the environment.

Mitigating Climate Change: It is a global effort. The proposals for savings / reduction of energy consumption in cross-border transport is a major priority worldwide. The trends at the national level decrease, but the objectives for reducing GHG emissions require coordination of all available resources.

Addressing the Climate Change Impacts: The Mediterranean area is characterized by high sensitivity to climate change phenomena and its effects are expected to be increased. Main hazards are the forest fires due to the increase in time and in intensity of the dry season, coastal erosion, degradation of the urban environment and flooding. These problems are common to the whole area.

Landscape - Cultural Heritage: landscape and culture are, for both sides of the cross-border area, a significant potential for the development of a quality - competitive model of sustainable tourism development. The threats to the landscape are common and are associated with unplanned and unregulated development of the coastal area.

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

The evaluation of the results will be based on logical analysis based on the methodological framework DPSIR (DPSIR: Driving force-Pressure-State-Impact-Response). This framework has been developed by the European Environment Agency for the environmental assessment and monitoring of the implementation of plans and programmes, and will be adapted to the needs of the present case. Main reasons for this are: a) that the programme is a policy framework with various fileds and high complexity and b) that, in general, the analysis is qualitative because of stochastic (non deterministic) nature of the Programme.

The DPSIR is based on a sequential examination of five consecutive steps in order to associate a logical framework of cause - effect relationship. Its use is further specialized by adjusting the content of the SEA, as determined by the CMD ap Ministry / EYPE / oik.107017 / 28.8.2006 and the technical requirements of Annex III (see Figure).

In the above-mentioned model as **Driving forces** are specified the forces that cause movement - change, ie the actions of the programme (see. Chap.4) that will cause the creation of new or possibly change existing **Pressures** to the environment and natural resources. These in turn will reshape **the current state** (Baseline data - Chapter 6). It is emphasized that, as the programme also includes "environmental actions", the diversification of existing pressures can have ambiguous results. The effect of pressures on the current state identifies the meaning of **Impact.** The impact assessment is based on the use of the Environmental Objectives, as they were identified in Chapter 3. These are used in order to decide whether the changes on the environment, resources, social welfare and

health are acceptable or not, and what are the positive effects (synergies). In parallel, the assessment of cumulative impacts is identified. These impacts are trying to indicate the cumulative effect of the implementation of all the actions of the Programme. It should be noted that, apart from any cumulative impacts, there is the case of one "positive" action for one environmental objective (eg reducing GHG) to cause negative effects on the achievement of another environmental objective. The last step of the implementation of the framework is the establishment of **Response** (Feedback). This is the definition of the proposed actions to prevent, reduce and offset any negative impacts, and of the measures to strengthen or conserve the environmental outcome in cases of positive effects.

The control of impacts includes the assessment and documentation, with quantitative or qualitative data, of negative or positive impacts regarding:

- Their possibility, duration, frequency and reversibility.
- Their cumulative nature.
- Their inter-regional[3] or cross-border nature.
- Their risks to human health or the environment (eg due to accidents).
- Their magnitude and spatial extent (geographical area and size of population likely to be affected).

7.1 Evaluation of pressures resulting from the implementation of the Programme actions by Priority Axis

Next, the evaluation of the pressures and impacts on environment by the implementation of the Programme actions are presented. The analysis is based on using the Table of Environmental Objectives which was prepared and presented in Chapter 3.

The evaluation is done at the level of Investment Priorities and is grouped at the Priority Axes (P.A.) level. The choice of this level (against the selection of the level of Specific Objective) is made because of the structure of the programmatic document as the expected results are presented by Investment Priority and not by each Specific Objective. The evaluation is based on specific questions that have been raised by Environmental Objective (E.O.) in Table 3. The final results of the evaluation are presented with clarity and simplicity in the form of an evaluation matrix in which each line refers to a E.O., while each column in

[3] In these cases and in cooperation with the contracting authority, cooperation will be sought with neighboring Regions contractors.

an S.O. Therefore, each cell of the table shows the result of the evaluation, which includes the following parameters:

1. **Possibility of Impact:** It expresses how expected or not is the cration of an impact. The evaluation is primarily based on consideration of: a) the "typical" impacts expected from an action or a type of project or an activity according to the analysis of processes that also contains the experience on effects of similar projects and b) the space or special conditions where the programme will be implemented, such as those that were identified in the current state of the environment.
2. **Scale - Direction of Impact**: Each action can have positive or negative impacts, which may be strong or weak regarding the degree of intensity. The variation of the intensity is associated with the main scale of the project, with the perception of the changes that are expected to bring about in critical factors, and with the importance of the parameter that affects the type of area. Thus, for example, the increase of a pollutant X, due to the creation of an urban artery, can be considered as a strong impact on the quality of the atmosphere in a residential area and as weak (the impact) when the same amount of pollutants is emitted in a country road.

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

   a) has a positive effect on one parameter of an environmental objective, but negative in another. This case usually occurs in actions involving special impacts during construction and operation phase. For example, the replacement of ICT in an agency may create waste of PCs, but after the upgrade service, the volume of paper will be significantly reduced.

   b) The degree and the sign of the impact depends on certain conditions which will be primarily determined by the specificity of actions. In these cases, beyond the identification of actions, those conditions will be investigated in order to be proposed as measures to improve the environmental performance of the programme (see Chapter 8)
3. **Frequency / duration**: It is referred to the amount of time that the impact will last. In the general case, actions that contain construction projects and create disturbance during the construction phase, which will be finished with the completion of construction (eg, noise from machinery, dust, etc.). The operational phase have more long-term impacts. As medium-term impacts are the impacts that occur after a critical concentration of a factor that creates disturbance. This parameter is not evaluated for positive impacts, as no positive impacts of "short-term" character are observed.
4. **Reversibility:** It is expressed with the ability to prevent, reduce or offset (artificial or physical) and restore to the previous state of the environmental objective in the

case that the related action ends / stops functioning. This parameter is not evaluated for positive impacts.

5. **Cross-border dimension:** Determined whether the impact will cross or local / regional impact.
6. **Uncertainty:** The uncertainty of the assessment of the programme is a relative concept and it is, in small or large extent, related to all evaluations. Specific reference is made on parameters where particularly high uncertainty is identified and are related to very negative effects. The aim of this reference is to describe the possible future studies and researches that will document better judgments on these impacts.

In accordance with the requirements of the SEA Report, the evaluation of the effects also include the **cumulative** nature of the impact. This takes place at the end of the evaluation process.

The presentation of the above-mentioned is made by Evaluation Matrices and by using the symbols shown in the following table.

Table 11: Table of the Assessment Symbols

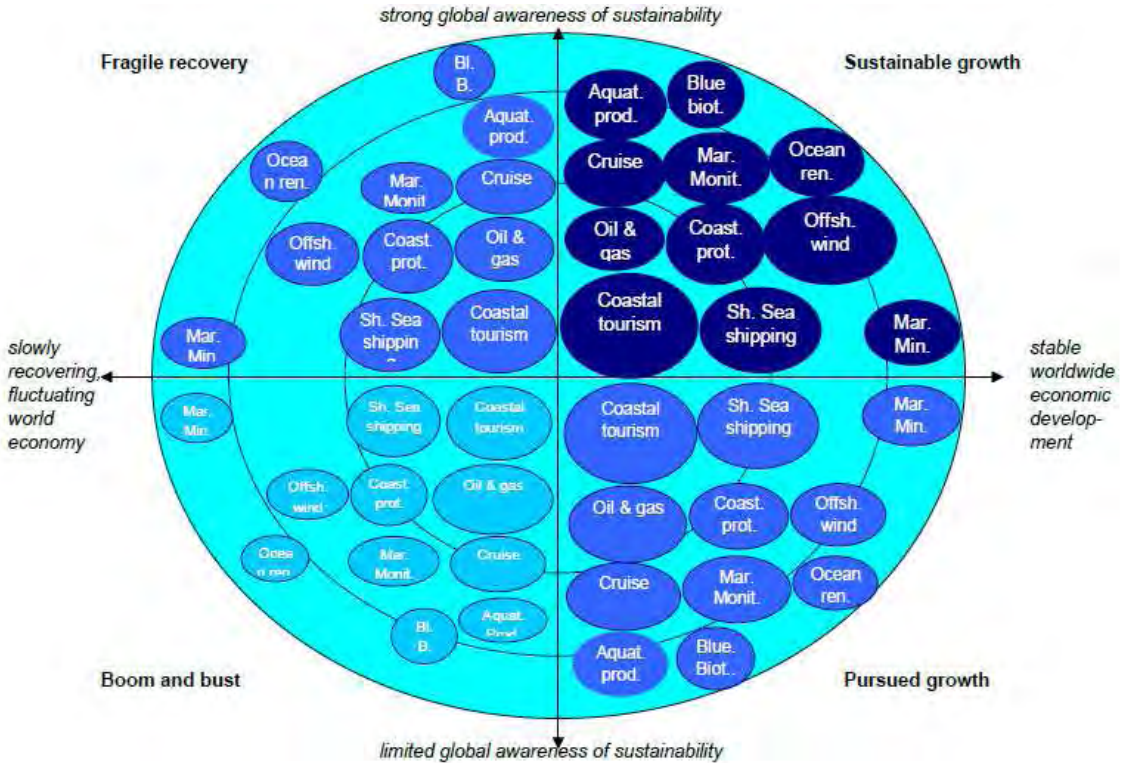
Parameter	Symbol	Explanation
Possibility Impact	**VP**	Very Likely
	P	Less Likely
	UL	Low possibility
	O	Non-impact
Scale - Direction	**- -, -**	Strong Negative, Weak Negative
	++ +	Strong positive, Weak positive (synergy)
	- / +	Mixed effects or effects that can be interactively determined by the specificity of action.
Duration	**LT**	Long-term
	MT	Medium-term
	ST	Short-term
Frequency	**CO**	Steady
	FR	Periodic
	OC	Occasional
Reversibility	**U**	Irreversible - Permanent
	R	Reversible
Cross-border dimension	↕	Possible cross-border impact
Uncertainty	**;**	High uncertainty

In.P.1 (b): Promoting business investment in R & I, developing links and synergies between enterprises, research and development centers and higher education.

- S.O. 1.1: Improving existing and developing new innovative support services with a focus on areas of special interest to the programme area (such as the blue economy, tourism, culture, etc.)
- S.O 1.2: Creating innovative clusters between regions in the fields of blue economy, industry creation, tourism, culture and agri-entrepreneurship.

The type, the possibility and character of impacts that may occur depend primarily on the type of activities to be supported. The fields - sectors of interest that are identified by the programmatic document, as well as the concept of blue development, are not uniquely associated with environmental protection, but also include activities that may lead to negative environmental impacts. A key factor that determines the environmental performance of this development is the strategy direction and the degree of integration of the concept of sustainability in the planning process. This is also highlighted by the Commission in the scenario analysis for the blue development where the dynamic sectors of the blue development are presented.

Picture 16: Dynamic blue development activities depending on their choice of strategy development (source: Blue Growth Scenarios and drivers for Sustainable Growth from the Oceans, Seas and Coasts, Third Interim Report, DG Mare 2012)



Such activities[4] that are mentioned in priority areas are:

- aquaculture: degradation of the marine environment mainly through local disposal of nutrients, organic matter, drugs, risks of genetic alteration of native fish populations, increasing the risk of spread of pathogens in wildlife, drowning marine mammals, landscape alteration, production waste (fish scrap shells) in the coastal zone.
- the agriculture and food sector: water depletion, degradation of ecosystems, pollution from agrochemicals - organic waste (mainly livestock).
- Coastal tourism: extension toward natural ecosystems, disturbance - destruction of habitat from activities / visitors (wetlands, dunes), pollutant production - waste, uncontrolled disposal of waste (mainly beaches - beach: plastic, cigarette butts), drinking water (pools, golf), etc.

In the field of biodiversity and protection of endangered species, the impacts are primarily related to the increase of the pressure to critical habitats for threatened species of marine and / or bird fauna by activities that may alter the characteristics of the marine and coastal area of Adriatic – Ionian.

[4] Not specified the economic activities in the transport sector, as the relevant actions are integrated in the Priority Axis 3

Possible is considered to be the positive contribution of the actions on issues related to energy efficiency and use of RES as the saving of energy is also associated with reducing the operational cost of enterprises and thus is a privileged field ofsynergy. The same things apply in relation to human health, especially in connection with the development of biotechnology.

Particularly important is considered to be the contribution in relation to territorial development, as the S.O. has an absolute coherence with O.6 (promotion of blue development, territorial cohesion).

In relation to the protection and management of cultural resources, the impact is expected to be positive, because culture is an area of special interest for the development of R&I as a tourist resource or in relation to the protection and promotion of the rich stock.

In relation to waste and water management, protection of the atmospheric environment and soil, impacts are mainly associated with resource consumption and waste - pollutants production as they described above. of The nature of the impact is uncertain as the actions are indicative. Whether the implemented projects will have positive or negative impacts, this will be depended on the type of approved projects. There is a significant possibility for improvements in relation to 'environmental performance' existing exploitations and units either in terms of improving efficiency of resources, materials and energy (saving), or in terms of preventing and reducing emission of harmful substances into the environment. In each case, however, the aim for positive synergies can be enhanced by the implementation of the programme through the integration of appropriate evaluation criteria for proposals, which will retain (or even requiring) the integration of green technologies in the implementation of projects in economic activities .

In the field of water, for example, it is estimated as possible to have positive synergies due to the fact that the issue of reasonable water management has an important role on the competitiveness of some of the priority sectors in the area. In the field of waste (garbage) the diagnosis is not as obvious, because the increase of (value) production is usually accompanied by an increase in by-production.

The support of actions for the introduction of technology and management practices that will enable the integration of 'green' innovation – technology, beyond compliance with European and national legislation on environmental permitting, can be enhanced by the planning provisions concerning:

- The integration in the value chain of cluster of management environment / waste
- The completion of the environmental parameter within the submission, evaluation and implementation of the programme.

Table 12: Evaluation Matrix of S.O. 1.1 and 1.2

Environmental Objective - Question	POSSIB	SCAL	DUR	Freq	REVE	CROS
O.1 "Halting the loss of biodiversity, maintaining the state of ecosystems and if possible improving the characteristics of those who are not in good condition". Is the implementation of the OP expected to affect:						
The extent and consistency (internal) of protected areas?	O					
The coherence of the system of Significant Biodiversity areas, ecological corridors?	O					
The integration of conservation in the entire planning process and the promotion of "green infrastructure"?	P	+	LT	OC	R	
O.2. "Preserving the genetic wealth of biodiversity and ecosystem services". Is the implementation of the OP expected to affect:						
The maintenance of racial or genetic diversity, richness and composition of populations of wildlife species?	;	+/-	;	CO	;	↕
O.3. "Enhancing the adaptation to Climate Change, in order the impacts of Climate Change to be absorbed with the least possible cost". Is the implementation of the OP expected to affect:						
The ability of the environment to affront – by itself - the effects of climate change?	O					
The importance of the impacts of natural disasters caused by extreme weather events (heat waves, floods, etc.)?	O					
The need to protect coastal areas from erosion / sinking?	O					
O.4. International efforts to mitigate climate change". Is the implementation of the OP expected to affect:						
The achievement of the targets of reducing GHG?	P	+	LT	OC	R	↕
The ability to capture carbon from natural ecosystems?	o					
The achievement of the targets for renewable energy and energy efficiency?	P	+	ST	OC	UR	↕
The shift of transport projects to within small or zero emissions means of transport?	O					
O.5. "Protecting the health of the population". Is the implementation of the OP expected to affect:						
The abandonment or aging population in mountainous and / or rural areas?	O					
The exposure of individuals to new or increased sources of pollutants, radiations or other substances or energy that may be harmful to human?	P	+	MT	OC	R	
The value of land, the public character and access to public goods?	O					
O.6. "Balanced territorial development and promotion of a new model of sustainable development". Is the implementation of the OP expected to affect:						
The need to develop transport, energy and environmental management networks and their construction / operation costs?	VP	++	ST	CO	R	↕
The balanced territorial development (retaining population and income) and relationships of town - countryside?	VP	++	MT	CO	R	
The promotion of green or blue economy?	VP	++	LT	CO	R	↕
O.7. "Effective waste management and compliance with the European obligations". Is the implementation of the OP expected to affect:						
The production of solid waste, their qualitative composition or their hazard?	;	+/-	;	CO	;	;
The reduce and reuse of materials and consumer products?	;	+/-	;	;	;	;

Environmental Objective - Question	POSSIB	SCAL	DUR	Freq	REVE	CROS
O.8. "Protection of the aquatic environment, water management and improving the quality and quantity parameters according to the requirements of the EU WFD and the MSFD". Is the implementation of the OP expected to affect:						
The water demand or pressures on the surface or underground systems (pollution, salination)?	P	+/-	;	;	;	
The implementation of management measures and the achievement of the objectives that are set?	P	+/-	;	;	;	
O.9. "Protection of residential centers from air pollution and noise". Is the implementation of the OP expected to affect:						
The levels of air pollution (or the conditions of its formation) at local level?	P	+	;	;	;	
The exposure of residential or tourist areas to noise?	O					
O.10. "Protection and Promotion of Cultural Heritage and Landscape as a development resource". Is the implementation of the OP expected to affect:						
The existing character of the landscape, the enhancement of natural and cultural sites - monuments?	P	+	;	;	;	
The commitments of protection of the coastal zone?	O					
O.11. "Protection of soil pollution and conservation of land productivity". Is the implementation of the OP expected to affect:						
The protection of productive soil for the economy or the ecosystem?	P	+	;	;	;	

In.P. 3 (a): Promoting entrepreneurship, in particular by facilitating the economic exploitation of new ideas and fostering the creation of new companies, including entrepreneurship incubators (business incubators)

- S.O.1.3: Support for incubating innovative ideas of thematic issues, such as the blue development, tourism, culture, agribusiness and other fields of interest to the programme area

According to the programme, the key elements of implementation of In.P. 3 (a) – S.O.1.3 are two: the function of incubators to new and / or evolving enterprises and the creation / strengthening mechanisms for the development of financial tools in order to support the competitiveness of enterprises in the area.

Primarly, the above-mentioned two types of actions, are not associated with significant environmental impacts, but secondarly, the effect of this support can cause negative or positive impact on environmental protection issues. In general, the type and possibility of impact does not differ from those expected from the In.P1(b) as the S.O. 1.1,1.2 and 1.3. focus on common fields. It is estimated that there will be diversification in relation to impacts on the coastal zone and the landscape. This diversification is related to the expansion of activities in the coastal zone (which in any case it adds further pressures to the existing pressures), and to other possible extensions of activities that already cause irreversible disturbance on the landscape, which can be futher strengthened. In each case, the effects are considered weak.

Table 13 : Evaluation Matrix of S.O. 1.3

Environmental Objective - Question	POSSIB	SCAL	DUR	Freq	REVE	CROS
O.1 "Halting the loss of biodiversity, maintaining the state of ecosystems and if possible improving the characteristics of those who are not in good condition". Is the implementation of the OP expected to affect:						
The extent and consistency (internal) of protected areas?	O					
The coherence of the system of Significant Biodiversity areas, ecological corridors?	O					
The integration of conservation in the entire planning process and the promotion of "green infrastructure"?	P	+	LT	OC	R	
O.2. "Preserving the genetic wealth of biodiversity and ecosystem services". Is the implementation of the OP expected to affect:						
The maintenance of racial or genetic diversity, richness and composition of populations of wildlife species?	;	+/-	;	CO	;	↕
O.3. "Enhancing the adaptation to Climate Change, in order the impacts of Climate Change to be absorbed with the least possible cost". Is the implementation of the OP expected to affect:						
The ability of the environment to affront – by itself - the effects of climate change?	O					
The importance of the impacts of natural disasters caused by extreme weather events (heat waves, floods, etc.)?	O					
The need to protect coastal areas from erosion / sinking?	O					
O.4. International efforts to mitigate climate change". Is the implementation of the OP expected to affect:						
The achievement of the targets of reducing GHG?	P	+	LT	OC	R	↕
The ability to capture carbon from natural ecosystems?	o					
The achievement of the targets for renewable energy and energy efficiency?	P	+	ST	OC	UR	
The shift of transport projects to within small or zero emissions means of transport?	O					
O.5. "Protecting the health of the population". Is the implementation of the OP expected to affect:						
The abandonment or aging population in mountainous and / or rural areas?	O					
The exposure of individuals to new or increased sources of pollutants, radiations or other substances or energy that may be harmful to human?	P	+	MT	OC	R	
The value of land, the public character and access to public goods?	O					
O.6. "Balanced territorial development and promotion of a new model of sustainable development". Is the implementation of the OP expected to affect:						
The need to develop transport, energy and environmental management networks and their construction / operation costs??	VP	+	ST	CO	R	↕
The balanced territorial development (retaining population and income) and relationships of town - countryside?	VP	+	MT	CO	R	↕
The promotion of green or blue economy?	VP	++	LT	CO	R	↕
O.7. "Effective waste management and compliance with the European obligations". Is the implementation of the OP expected to affect:						
The production of solid waste, their qualitative composition or their hazard?	;	+/-	;	CO	;	;
The reduce and reuse of materials and consumer products?	P	+	;	;	;	;

Environmental Objective - Question	POSSIB	SCAL	DUR	Freq	REVE	CROS
O.8. "Protection of the aquatic environment, water management and improving the quality and quantity parameters according to the requirements of the EU WFD and the MSFD". Is the implementation of the OP expected to affect:						
The water demand or pressures on the surface or underground systems (pollution, salination)?	P	+	;	;	;	
The implementation of management measures and the achievement of the objectives that are set?	P	+	;	;	;	
O.9. "Protection of residential centers from air pollution and noise". Is the implementation of the OP expected to affect:						
The levels of air pollution (or the conditions of its formation) at local level?	O					
The exposure of residential or tourist areas to noise?	O					
O.10. "Protection and Promotion of Cultural Heritage and Landscape as a development resource". Is the implementation of the OP expected to affect:						
The existing character of the landscape, the enhancement of natural and cultural sites - monuments?	VP	+/-	ST	CO	R	↕
The commitments of protection of the coastal zone?	U	-	LT	CO	U	
O.11. "Protection of soil pollution and conservation of land productivity". Is the implementation of the OP expected to affect:						
The protection of productive soil for the economy or the ecosystem?	P	+	;	;	;	

In.P.6 (c): Protecting, promoting and developing cultural and natural heritage.

- S.O. 2.1 Improving competences for sustainable use and development of cultural heritage and resources with special attention to accessibility for disabled
- S.O. 2.2 Developing integrated environmental management approaches and recruitment in the public and private sector

Both S.O.s include actions that primarily aim at the production of a positive environmental effect. However, in many cases, the aim of a positive environmental effect may create or pass pressures and impacts in another environmental field.

A possibility of negative impacts is mainly identified in relation to biodiversity. The increase in tourism, which is the ultimate aim of S.O.2.1 is likely to intensify the pressures on species of ecological interest, but also to increase the pressures on places like the coastal zone that are important ecological corridors. These pressures can be prevented and greatly reduced through the use of best practices and rules (conditions - restrictions).

In some cases the evaluation of positive impact occurs as a component of the results of actions that will be implemented. For example, in relation to the emission of GHG's, several presented actions will have the effect of reducing them (aid to SMEs for energy efficiency, renewable energy integration, promotion of alternative forms of transportation). This result is considered to cover any increase in emissions that may result from the increase in tourism movement (as a result of project implementation). The same applies to the areas of waste-

water management, where specific actions of S.O.2.2. are expected to contribute positively. Parodic weak negative impacts are expected to arise from actions of improvement accessibility (indicative action 2.1.f) relating to the construction phase (dust, EECCA).

Table 14: Evaluation Matrix of S.O. 2.1 and 2.2

Environmental Objective - Question	POSSIB	SCAL	DUR	Freq	REVE	CROS
O.1 "Halting the loss of biodiversity, maintaining the state of ecosystems and if possible improving the characteristics of those who are not in good condition". Is the implementation of the OP expected to affect:						
The extent and consistency (internal) of protected areas?	O					
The coherence of the system of Significant Biodiversity areas, ecological corridors?	P	+/-	LT	FR	R	
The integration of conservation in the entire planning process and the promotion of "green infrastructure"?	VP	+	LT	OC	R	
O.2. "Preserving the genetic wealth of biodiversity and ecosystem services". Is the implementation of the OP expected to affect:						
The maintenance of racial or genetic diversity, richness and composition of populations of wildlife species?	P	+/-	LT	FR	R	
O.3. "Enhancing the adaptation to Climate Change, in order the impacts of Climate Change to be absorbed with the least possible cost". Is the implementation of the OP expected to affect:						
The ability of the environment to affront – by itself - the effects of climate change?	O					
The importance of the impacts of natural disasters caused by extreme weather events (heat waves, floods, etc.)?	The					
The need to protect coastal areas from erosion / sinking?	The					
O.4. International efforts to mitigate climate change". Is the implementation of the OP expected to affect:						
The achievement of the targets of reducing GHG?	VP	+/-	LT	FR	R	↕
The ability to capture carbon from natural ecosystems?	O					
The achievement of the targets for renewable energy and energy efficiency?	VP	+	LT	OC	R	
The shift of transport projects to within small or zero emissions means of transport?	VP	+	LT	OC	R	↕
O.5. "Protecting the health of the population". Is the implementation of the OP expected to affect:						
The abandonment or aging population in mountainous and / or rural areas?	P	+	ST	CO	R	
The exposure of individuals to new or increased sources of pollutants, radiations or other substances or energy that may be harmful to human?	P	+	MT	OC	R	↕
The value of land, the public character and access to public goods?	VP	+	LT	CO	R	
O.6. "Balanced territorial development and promotion of a new model of sustainable development". Is the implementation of the OP expected to affect:						
The need to develop transport, energy and environmental management networks and their construction / operation costs?	VP	+	ST	CO	R	↕
The balanced territorial development (retaining population and income) and relationships of town - countryside?	VP	+	MT	CO	R	↕
The promotion of green or blue economy?	VP	+	LT	CO	R	↕

Environmental Objective - Question	POSSIB	SCAL	DUR	Freq	REVE	CROS
O.7. "Effective waste management and compliance with the European obligations". Is the implementation of the OP expected to affect:						
The production of solid waste, their qualitative composition or their hazard?	VP	+/-	LT / ST	CO	R	
The reduce and reuse of materials and consumer products?	O					
O.8. "Protection of the aquatic environment, water management and improving the quality and quantity parameters according to the requirements of the EU WFD and the MSFD". Is the implementation of the OP expected to affect:						
The water demand or pressures on the surface or underground systems (pollution, salination)?	VP	++	ST	CO	R	
The implementation of management measures and the achievement of the objectives that are set?	VP	+	ST	CO	R	↕
O.9. "Protection of residential centers from air pollution and noise". Is the implementation of the OP expected to affect:						
The levels of air pollution (or the conditions of its formation) at local level?	O					
The exposure of residential or tourist areas to noise?	O					
O.10. "Protection and Promotion of Cultural Heritage and Landscape as a development resource". Is the implementation of the OP expected to affect:						
The existing character of the landscape, the enhancement of natural and cultural sites - monuments?	VP	++	ST	CO	R	↕
The commitments of protection of the coastal zone?	VP	+	LT	CO	R	
O.11. "Protection of soil pollution and conservation of land productivity". Is the implementation of the OP expected to affect:						
The protection of productive soil for the economy or the ecosystem?	P	+	;	;	;	

In.P. 6 (d): Protecting and restoring biodiversity, soil protection and promotion of ecosystem services including Natura 2000 areas and green infrastructure.

- S.O 2.3 Improvement of joint management plans for the protection and management of biodiversity in coastal and rural ecosystems, paying attention to natural resources and protected areas and the development of environmental protection measures, also related to the prevention of technological risks.

The S.O. – In.P have obvious environmental added value by promoting joint action and responsibility (partnership) for the integrated management of shared and interdependent natural capital. The development of common tools and management methods, the knowledge sharing and dissemination of information provide a distinctive added value both on the environment, and the programme itself. The positive influence is related to all of the environmental objectives as the S.O., beyond the protection of biodiversity, particularly enhances the promotion of green infrastructure (which have a positive impact on areas such as the prevention of natural disasters and the mitigation of climate change), and green and blue (sustainable) development.

Table 15: Evaluation Matrix of SO 2.3.

Environmental Objective - Question	POSSIB	SCAL	DUR	Freq	REVE	CROS
O.1 "Halting the loss of biodiversity, maintaining the state of ecosystems and if possible improving the characteristics of those who are not in good condition". Is the implementation of the OP expected to affect:						
The extent and consistency (internal) of protected areas?	VP	+	LT	OC	R	↕
The coherence of the system of Significant Biodiversity areas, ecological corridors?	VP	++	LT	OC	R	↕
The integration of conservation in the entire planning process and the promotion of "green infrastructure"?	VP	++	LT	OC	R	↕
O.2. "Preserving the genetic wealth of biodiversity and ecosystem services". Is the implementation of the OP expected to affect:						
The maintenance of racial or genetic diversity, richness and composition of populations of wildlife species?	VP	++	LT	OC	R	↕
O.3. "Enhancing the adaptation to Climate Change, in order the impacts of Climate Change to be absorbed with the least possible cost". Is the implementation of the OP expected to affect:						
The ability of the environment to affront – by itself - the effects of climate change?	VP	+	LT	OC	R	↕
The importance of the impacts of natural disasters caused by extreme weather events (heat waves, floods, etc.)?	P	+	ST	CO	R	
The need to protect coastal areas from erosion / sinking?	P	+	ST	CO	R	
O.4. International efforts to mitigate climate change". Is the implementation of the OP expected to affect:						
The achievement of the targets of reducing GHG?	O					
The ability to capture carbon from natural ecosystems?	VP	++	LT	OC	R	↕
The achievement of the targets for renewable energy and energy efficiency?	The					
The shift of transport projects to within small or zero emissions means of transport?	The					↕
O.5. "Protecting the health of the population". Is the implementation of the OP expected to affect:						
The abandonment or aging population in mountainous and / or rural areas?	The					
The exposure of individuals to new or increased sources of pollutants, radiations or other substances or energy that may be harmful to human?	The					
The value of land, the public character and access to public goods?	P	+	ST	CO	R	
O.6. "Balanced territorial development and promotion of a new model of sustainable development". Is the implementation of the OP expected to affect:						
The need to develop transport, energy and environmental management networks and their construction / operation costs?	The					
The balanced territorial development (retaining population and income) and relationships of town - countryside?	P	+	ST	CO	R	
The promotion of green or blue economy?	VP	++	LT	OC	R	↕
O.7. "Effective waste management and compliance with the European obligations". Is the implementation of the OP expected to affect:						
The production of solid waste, their qualitative composition or their hazard?	The					
The reduce and reuse of materials and consumer products?	O					

Environmental Objective - Question	POSSIB	SCAL	DUR	Freq	REVE	CROS
O.8. "Protection of the aquatic environment, water management and improving the quality and quantity parameters according to the requirements of the EU WFD and the MSFD". Is the implementation of the OP expected to affect:						
The water demand or pressures on the surface or underground systems (pollution, salination)?	VP	++	ST	CO	R	
The implementation of management measures and the achievement of the objectives that are set?	VP	+	ST	CO	R	↕
O.9. "Protection of residential centers from air pollution and noise". Is the implementation of the OP expected to affect:						
The levels of air pollution (or the conditions of its formation) at local level?	P	+	ST	CO	R	
The exposure of residential or tourist areas to noise?	P	+	ST	CO	R	
O.10. "Protection and Promotion of Cultural Heritage and Landscape as a development resource". Is the implementation of the OP expected to affect:						
The existing character of the landscape, the enhancement of natural and cultural sites - monuments?	VP	+	LT	CO	R	↕
The commitments of protection of the coastal zone?	VP	++	LT	CO	R	↕
O.11. "Protection of soil pollution and conservation of land productivity". Is the implementation of the OP expected to affect:						
The protection of productive soil for the economy or the ecosystem?	VP	+	LT	CO	R	↕

In.P.6 (f): Promoting innovative technologies to improve environmental protection and energy efficiency in the fields of waste, water and air pollution

- S.O. 2.4 Developing and testing innovative technologies / tools for effective integrated waste, water and air pollution management.

The S.O. 2.4. identifies positive actions for the environment. It would be particularly important the implementation of actions in S.O. 2.4 to be combined with the implementation of the actions of S.O. 1.2 and 1.3. in order to prevent and mitigate the negative impacts of the programme on the environment.

In connection with the proposed actions that are listed in the programming document (although not evaluated in the following table), it should be noted that special attention should be given to projects to clean the seabed. The main risk is that the disturbance of sediments, by accident or by failure in the planning process of projects, can cause recirculation and dispersion in water of toxic or harmful substances that were remained inactivated in the benthic sediment.

Table 16: Evaluation Matrix ofS.O. 2.4.

Environmental Objective - Question	POSSIB	SCAL	DUR	Freq	REVE	CROS
O.1 "Halting the loss of biodiversity, maintaining the state of ecosystems and if possible improving the characteristics of those who are not in good condition". Is the implementation of the OP expected to affect:						
The extent and consistency (internal) of protected areas?	P	++	LT	OC		
The coherence of the system of Significant Biodiversity areas, ecological corridors?	The					
The integration of conservation in the entire planning process and the promotion of "green infrastructure"?	P	+	LT	OC		
O.2. "Preserving the genetic wealth of biodiversity and ecosystem services". Is the implementation of the OP expected to affect:						
The maintenance of racial or genetic diversity, richness and composition of populations of wildlife species?	P	+	LT	OC		
O.3. "Enhancing the adaptation to Climate Change, in order the impacts of Climate Change to be absorbed with the least possible cost". Is the implementation of the OP expected to affect:						
The ability of the environment to affront – by itself - the effects of climate change?	The					
The importance of the impacts of natural disasters caused by extreme weather events (heat waves, floods, etc.)?	The					
The need to protect coastal areas from erosion / sinking?	The					
O.4. International efforts to mitigate climate change". Is the implementation of the OP expected to affect:						
The achievement of the targets of reducing GHG?	P	+	LT	FR	P	
The ability to capture carbon from natural ecosystems?	The					
The achievement of the targets for renewable energy and energy efficiency?	P	+	LT	FR	P	
The shift of transport projects to within small or zero emissions means of transport?	The					
O.5. "Protecting the health of the population". Is the implementation of the OP expected to affect:						
The abandonment or aging population in mountainous and / or rural areas?	The					
The exposure of individuals to new or increased sources of pollutants, radiations or other substances or energy that may be harmful to human?	P	+	LT	FR	P	
The value of land, the public character and access to public goods?	O					
O.6. "Balanced territorial development and promotion of a new model of sustainable development". Is the implementation of the OP expected to affect:						
The need to develop transport, energy and environmental management networks and their construction / operation costs?	The					
The balanced territorial development (retaining population and income) and relationships of town - countryside?	O					
The promotion of green or blue economy?	VP	+	LT	OC	R	↕
O.7. "Effective waste management and compliance with the European obligations". Is the implementation of the OP expected to affect:						
The production of solid waste, their qualitative composition or their hazard?	VP	+	LT	OC	R	
The reduce and reuse of materials and consumer products?	VP	+	LT	OC	R	

Environmental Objective - Question	POSSIB	SCAL	DUR	Freq	REVE	CROS
O.8. "Protection of the aquatic environment, water management and improving the quality and quantity parameters according to the requirements of the EU WFD and the MSFD". Is the implementation of the OP expected to affect:						
The water demand or pressures on the surface or underground systems (pollution, salination)?	VP	+	ST	CO	R	↕
The implementation of management measures and the achievement of the objectives that are set?	VP	+	ST	CO	R	↕
O.9. "Protection of residential centers from air pollution and noise". Is the implementation of the OP expected to affect:						
The levels of air pollution (or the conditions of its formation) at local level?	VP	+	ST	CO	R	
The exposure of residential or tourist areas to noise?	P	+	ST	CO	R	
O.10. "Protection and Promotion of Cultural Heritage and Landscape as a development resource". Is the implementation of the OP expected to affect:						
The existing character of the landscape, the enhancement of natural and cultural sites - monuments?	O					
The commitments of protection of the coastal zone?	O					
O.11. "Protection of soil pollution and conservation of land productivity". Is the implementation of the OP expected to affect:						
The protection of productive soil for the economy or the ecosystem?	P	+	LT	OC	R	

In.P. 7 (b): Improving regional mobility by connecting secondary and tertiary nodes in the TEN-T infrastructure, including intermodal hubs.

- S.O. 3.1 Optimizing interconnections, procedures / operations of ports and other transport infrastructure in order to boost the maritime, coastal shipping capacity and cross-border ferry connectivity

The S.O. includes actions related to management and organizational measures and to transport infrastructure that are mainly referred to marine and coastal zone and secondarily to intranets.

According to the description of the actions, these are expected to be primarily directed to maritime transport, and other connections with terrestrial systems in order to increase the immediacy and multimodality of connections.

The environmental impacts of shipping are mainly referred to the chemical pollution that is caused by accidents or spills of fuel and lubricants oils. Locally, these impacts are particularly severe in re-fueling areas with heavy traffic of ships such as ports and/or closed water systems as bays, where the refresh water rate does not allow diffusion and dispersion of pollutants.

At the same time, the commercial and passenger shipping, as dependent on fossil fuels, causes important emissions of GHG's and hazardous air pollutants on human health. Specifically, regarding air pollution the biggest problem lies in urban ports (port cities) that

blend ferries. One factor that exacerbates the problem is that the shipping diesel is more polluting than diesel due to limited desulphurisation. In this manner, the ferry shipping especially contributes to increase the SO_2 in urban areas ports. Regarding the production of emissions of GHG's, the actions are expected to have dual effects. On the one hand, the main objective of increasing mobility obviously enhances emissions GHG's. On the other hand, improvement of port interconnection with urban / suburban roads will result in refucing congestion phenomena that are observed at port and urban areas during arrival and departure of ferries. The last phenomenon produces significant amounts of GHG's; and other air pollutants that locally aggrevate the quality of the urban environment.

The increasing mobility of the maritime area and primarily of network - nodes along the coastal zone is expected to have negative impacts on biodiversity only when this takes place in or near areas that are important habitats in coastal waters or in areas that are marine routes

Another field in which negative effects are expected to be observed is the field of landscape and protection of the coastal zone. The impacts vary from one action to another, but they are mainly identified as negative. Regarding the degradation of the coastal zone, particularly aggravating is the development of road infrastructure in port nodes along the coastline. This development causes framentations to the landscape and reinfores trends for urban sprawl (off plan construction along the roadroad may secondarily create major impacts on environmental quality).

Table 17: Evaluation Matrix of S.O. 3.1.

Environmental Objective - Question	POSSIB	SCAL	DUR	Freq	REVE	CROS
O.1 "Halting the loss of biodiversity, maintaining the state of ecosystems and if possible improving the characteristics of those who are not in good condition". Is the implementation of the OP expected to affect:						
The extent and consistency (internal) of protected areas?	U	-	LT	CO	UR	
The coherence of the system of Significant Biodiversity areas, ecological corridors?	U	-	LT	CO	UR	
The integration of conservation in the entire planning process and the promotion of "green infrastructure"?	O					
O.2. "Preserving the genetic wealth of biodiversity and ecosystem services". Is the implementation of the OP expected to affect:						
The maintenance of racial or genetic diversity, richness and composition of populations of wildlife species?	U	-	LT	CO	UR	
O.3. "Enhancing the adaptation to Climate Change, in order the impacts of Climate Change to be absorbed with the least possible cost". Is the implementation of the OP expected to affect:						
The ability of the environment to affront – by itself - the effects of climate change?	The					
The importance of the impacts of natural disasters caused by extreme weather events (heat waves, floods, etc.)?	The					
The need to protect coastal areas from erosion / sinking?	The					
O.4. International efforts to mitigate climate change". Is the implementation of the OP expected to						

Environmental Objective - Question	POSSIB	SCAL	DUR	Freq	REVE	CROS
affect:						
The achievement of the targets of reducing GHG?	P	+/-	;	;	;	
The ability to capture carbon from natural ecosystems?	The					
The achievement of the targets for renewable energy and energy efficiency?	O					
The shift of transport projects to within small or zero emissions means of transport?	The					
O.5. "Protecting the health of the population". Is the implementation of the OP expected to affect:						
The abandonment or aging population in mountainous and / or rural areas?	The					
The exposure of individuals to new or increased sources of pollutants, radiations or other substances or energy that may be harmful to human?	O					
The value of land, the public character and access to public goods?	O					
O.6. "Balanced territorial development and promotion of a new model of sustainable development". Is the implementation of the OP expected to affect:						
The need to develop transport, energy and environmental management networks and their construction / operation costs?	The					
The balanced territorial development (retaining population and income) and relationships of town - countryside?	O					
The promotion of green or blue economy?	VP	+	LT	OC	R	↕
O.7. "Effective waste management and compliance with the European obligations". Is the implementation of the OP expected to affect:						
The production of solid waste, their qualitative composition or their hazard?	O					
The reduce and reuse of materials and consumer products?	O					
O.8. "Protection of the aquatic environment, water management and improving the quality and quantity parameters according to the requirements of the EU WFD and the MSFD". Is the implementation of the OP expected to affect:						
The water demand or pressures on the surface or underground systems (pollution, salination)?	VP	-	LT	OC	R	↕
The implementation of management measures and the achievement of the objectives that are set?	O					
O.9. "Protection of residential centers from air pollution and noise". Is the implementation of the OP expected to affect:						
The levels of air pollution (or the conditions of its formation) at local level?	VP	++	LT	CO		
The exposure of residential or tourist areas to noise?	VP	++	LT	CO		
O.10. "Protection and Promotion of Cultural Heritage and Landscape as a development resource". Is the implementation of the OP expected to affect:						
The existing character of the landscape, the enhancement of natural and cultural sites - monuments?	P	-	LT	CO	UN	
The commitments of protection of the coastal zone?	P	-	LT	CO	UN	
O.11. "Protection of soil pollution and conservation of land productivity". Is the implementation of the OP expected to affect:						
The protection of productive soil for the economy or the ecosystem?	P	-	LT	CO	UN	

In.P. 7 (c): Developing and improving environmentally friendly (including low noise) and low-carbon transport systems, including waterways and maritime transport, ports and intermodal hubs.

- S.O. 3.2 Improving the efficiency of transport: including the life-cycle approach, achieving near-zero energy demand and reducing the impact of transport on the environment and promoting innovation for sustainable and non-polluting transport

These actions are expected to positively contribute to particular parameters that are referred to mitigation of climate change and air pollution, although the objective of "nearly zero energy demand" should be seen as quite ambitious, given the type of actions and budget that are outlined in the programmatic document. At the same time, as it is indicated in the ex-ante evaluation report, this objective is not identified in monitoring results by using the indicator of Priority Axis 3 and therefore it cannot be adequately documented (the intervention logic -Objective - action - result).

Regarding the criteria related to biodiversity and wildlife conservation, the actions that are described are not expected to generate very significant positive impacts. In general, the actions, that will be implemented, are not expected to affect the state of the marine environment in an important way in ordetr to be considered that there will be an extensive impact on biodiversity. In contrast, synergy can be locally developed in relation to the integration of green infrastructure especially in areas with high environmental impact eg commercial ports that are in direct contact with the protected areas of the coastal area (mostly wetlands). The environmental effectiveness in this field could be increased if the actions for the development of green transport are directed towards areas where there are threatened habitats (protected species of marine and bird fauna depend on these areas) and also if the actions are directed to targeted types of disturbance which are caused by transport and strongly influence the above-mentioned species.

These actions are expected to positively contribute to efforts to mitigate climate change, human health and reduce air and noise pollution especially in urban areas - ports, where emissions from burning shipping oil are particularly aggravating.

Table 18: Evaluation Matrix of S.O. 3.2.

Environmental Objective - Question	POSSIB	SCAL	DUR	Freq	REVE	CROS
O.1 "Halting the loss of biodiversity, maintaining the state of ecosystems and if possible improving the characteristics of those who are not in good condition". Is the implementation of the OP expected to affect:						
The extent and consistency (internal) of protected areas?	O					
The coherence of the system of Significant Biodiversity areas, ecological corridors?	The					
The integration of conservation in the entire planning process and the promotion of "green infrastructure"?	P	+	LT	OC		↕
O.2. "Preserving the genetic wealth of biodiversity and ecosystem services". Is the implementation of the OP expected to affect:						
The maintenance of racial or genetic diversity, richness and composition of populations of wildlife species?	;	+	ST	OC		↕
O.3. "Enhancing the adaptation to Climate Change, in order the impacts of Climate Change to be absorbed with the least possible cost". Is the implementation of the OP expected to affect:						
The ability of the environment to affront – by itself - the effects of climate change?	The					
The importance of the impacts of natural disasters caused by extreme weather events (heat waves, floods, etc.)?	The					
The need to protect coastal areas from erosion / sinking?	The					
O.4. International efforts to mitigate climate change". Is the implementation of the OP expected to affect:						
The achievement of the targets of reducing GHG?	VP	++	LT	CO		
The ability to capture carbon from natural ecosystems?	The					
The achievement of the targets for renewable energy and energy efficiency?	VP	++	LT	CO		
The shift of transport projects to within small or zero emissions means of transport?	VP	+	LT	OC	R	↕
O.5. "Protecting the health of the population". Is the implementation of the OP expected to affect:						
The abandonment or aging population in mountainous and / or rural areas?	The					
The exposure of individuals to new or increased sources of pollutants, radiations or other substances or energy that may be harmful to human?	VP	++	LT	CO		
The value of land, the public character and access to public goods?	O					
O.6. "Balanced territorial development and promotion of a new model of sustainable development". Is the implementation of the OP expected to affect:						
The need to develop transport, energy and environmental management networks and their construction / operation costs?	The					
The balanced territorial development (retaining population and income) and relationships of town - countryside?	O					
The promotion of green or blue economy?	VP	+	LT	OC	R	↕
O.7. "Effective waste management and compliance with the European obligations". Is the implementation of the OP expected to affect:						
The production of solid waste, their qualitative composition or their hazard?	VP	++	LT	CO		
The reduce and reuse of materials and consumer products?	VP	++	LT	CO		

Environmental Objective - Question	POSSIB	SCAL	DUR	Freq	REVE	CROS
O.8. "Protection of the aquatic environment, water management and improving the quality and quantity parameters according to the requirements of the EU WFD and the MSFD". Is the implementation of the OP expected to affect:						
The water demand or pressures on the surface or underground systems (pollution, salination)?	O					
The implementation of management measures and the achievement of the objectives that are set?	O					
O.9. "Protection of residential centers from air pollution and noise". Is the implementation of the OP expected to affect:						
The levels of air pollution (or the conditions of its formation) at local level?	VP	++	LT	CO		
The exposure of residential or tourist areas to noise?	VP	++	LT	CO		
O.10. "Protection and Promotion of Cultural Heritage and Landscape as a development resource". Is the implementation of the OP expected to affect:						
The existing character of the landscape, the enhancement of natural and cultural sites - monuments?	O					
The commitments of protection of the coastal zone?	O					
O.11. "Protection of soil pollution and conservation of land productivity". Is the implementation of the OP expected to affect:						
The protection of productive soil for the economy or the ecosystem?	O					

7.2 Control of Cumulative Impacts

The cumulative impacts are the results of combining the impacts that were above-mentioned per E.O.

The control of cumulative impacts are referred to two parameters. First, to the control of the result from the implementation of various interventions that may have positive, negative or neutral impact on the environment. This calculation of cumulative impacts is qualititave, as in many cases positive with negative effects cannot be in accordance, for example when effects have influence on different characteristics that determine the quality or the quantity of each environmental factor. In these cases, an attempt is made to identify the most critical factor and the precautionary principle is adopted for the impact assessment.

The second parameter to be controlled, is the synergy, as in many cases the simultaneous action of two negative or positive factors can multiply the strength of the impact in relation to that which would arise if these factors were separately happened.

Table 19: Summary of the Impacts by type and specific objective.

	1.1 - 1.2.	1.3	2.1.- 2.2	2.3	2.4	3.1	3.2
O.1. "Halting the loss of biodiversity, maintaining the state of ecosystems and if possible improving the characteristics of those who are not in good condition".	1	1	1	3	1		1
			1				
						2	
O.2. "Preserving the genetic wealth of biodiversity and ecosystem services".				1	1		1
	1	1	1				
						1	
O.3. "Enhancing the adaptation to Climate Change, in order the impacts of Climate Change to be absorbed with the least possible cost".			3				
O.4. "International efforts to mitigate climate change".	2	2	2	1	2		3
			1			1	
O.5. "Protecting the health of the population".	1	1	3	1	1	1	1
O.6. "Balanced territorial development and promotion of a new model of sustainable development".	3	3	3	2	1	1	1
O.7. "Effective waste management and compliance with the european obligations".		1			2		2
	2	1	1				
O.8. "Protection of the aquatic environment, water management and improving the quality and quantity parameters according to the requirements of the EU Water Framework Directive (WFD) and the Marine Strategy Framework Directive (MSFD)".		2	2	2	2		
	2						
						1	
O.9. "Protection of residential centers from air pollution and noise."	1			2	2	1	2
O.10. "Protection and Promotion of Cultural Heritage and Landscape as a development resource".	1	1	2	2			
						2	
O.11. "Protection of soil pollution and conservation of land productivity".	1	1	1	1	1		
						1	

Overall, the control of the cumulative impacts is done by using the following table. It should be paid attention to the field of biodiversity and species protection for presenting cumulative impacts. The parameter of control agent should be the non-parallel action of projects that may negatively affect common areas.

Table 20: Control Table of cumulative impacts

	Positive	Mixed	Negative
O.1. "Halting the loss of biodiversity, maintaining the state of ecosystems and if possible improving the characteristics of those who are not in good condition".	8	1	2
O.2. "Preserving the genetic wealth of biodiversity and ecosystem services".	3	3	1
O.3. "Enhancing the adaptation to Climate Change, in order the impacts of Climate Change to be absorbed with the least possible cost".	3		
O.4. "International efforts to mitigate climate change".	12	2	
O.5. "Protecting the health of the population".	8		
O.6. "Balanced territorial development and promotion of a new model of sustainable development".	14		
O.7. "Effective waste management and compliance with the european obligations".	5	4	
O.8. "Protection of the aquatic environment, water management and improving the quality and quantity parameters according to the requirements of the EU Water Framework Directive (WFD) and the Marine Strategy Framework Directive (MSFD)".	8	2	1
O.9. "Protection of residential centers from air pollution and noise."	9		
O.10. "Protection and Promotion of Cultural Heritage and Landscape as a development resource".	5	1	2
O.11. "Protection of soil pollution and conservation of land productivity".	5		1

8. Description of measures to prevent, reduce, offset and monitor significant impacts of the programme on the environment

8.1 Measures for environmental protection, prevention, mitigation and control of environmental impacts

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

a) Environmental permitting of projects and activities.

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

- Compliance with the specific emission limit values of pollutant loads and concentrations for air, water and soil in accordance with the applicable provisions.
- The specific limit values of noise.
- Compliance with national or regional planning for the environment, such as waste management plan, the basin management plans of the WFD, etc.
- The suitability of locating in accordance with the approved land use plans and building restrictions.
- Taking into account all the necessary measures that are provided by the legislation in relation to the prevention and reduction of pollution of protected areas, sea and forest.

Apart from the above-mentioned and regardless the priority axis or type of project, it should be taken into account that:

- when an area is included in the network Natura2000, in accordance with Article 6.3 of Directive 92/43/EEC, it should be ensured that: '*Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect on it, either individually or together with other projects, it is should be estimated regarding its impacts on the site by taking into account its conservation objectives*'.
- when an area is characterized as SPA under the Directive on birds, all measures should be taken that are mentioned in the law of both Member States.

b) Specific measures in order to protect the environment.

- Proposals that finance enterprises (innovation - entrepreneurship - competitiveness) and that include (in addition to the mandatory rules of the environmental law) investment in "green infrastructure and technologies" (eg, use of geothermal energy etc), bioclimatic principles and/or promote the reduction and reuse of materials (according to the hierarchy of waste management), would be highly desirable to be primed during the project selection process.
- In the process of specifying and selecting clusters, it should be considered to include enterprises that manage products or waste that are produced throughout the value chain.
- The actions of tourism development or enhancement of natural resources within Natura 2000 areas should be consistent with the management plan areas. In cases, where the projects are listed in areas with Management Agency, its opinion is necessary. In any case, it should be documented that the increase of visiting the protected ecosystems for tourism or other purposes does not have impact on the conservation status.
- As for technical projects that are implemented within the coastal marine area and for which there may be a disruption of benthic substrate, it should be considered to

prevent and reduce the potential pollution that can be caused by the re-existence of pollutants in the sediment.

- The programme should avoid the inclusion of projects that lead to the forming or opening roads outside of the urban area and in parallel withthe coastline. Where this is technically impossible, these projects of roads should be accompanied by appropriate town planning / regulatory measures in order to prevent the development.

8.2 Monitoring System of Impacts

The control and monitoring of the impacts of the programme is necessary, according to Directive 2001/42 / EC, and on an annual basis through an annual report.

The SEA is a first attempt to identify the impact of a programme that has not yet fully qualified. The actions and the types of interventions that have been examined largely determine the nature of the expected impact, but may provide few opportunities for their intensity and therefore their acceptance or not. Therefore, eliminated specific data resulting from the gradual implementation by specialization of the program, the SEA is primarily a theoretical investigation of the significant impact of the program. The SEA has so far identified the significant negative impacts and proposed practices and measures to minimize them. Monitoring, therefore, called initially to validate or correct the theoretical results of the assessment of SEA compared with actual environmental impacts resulting from the implementation, and secondly to assess whether the proposed measures have been effective.

For this weakness, the SEA process obliges the Programmes (Article 10) to implement procedures for identifying and assessing environmental impacts, after the preparation phase of the Programme but during its implementation phase. The main aim of this obligation is the early identification of unexpected negative effects, so that appropriate remedial action can be taken.

Therefore, the objectives of the monitoring system are:

- To more accurately verify and assess the impacts of the programme during its (on-going) implementation.
- To certify that the mitigation measures were implemented, which were proposed for the prevention and reduction of the impacts, and to examine their effectiveness.
- To assess the achievement of the environmental objectives set by the SEA Report.
- To plan and adopt any new measures or actions, if environmental impacts are identified beyond the tolerable limit.

In order to control and monitor the impacts, an indicator system was selected, which is presented in the table below.

Table 21: Monitoring System of the Operational Programme

Field	Indicator	Source - Calculation	Aim / Connection with Monitoring of the Impacts of Actions
Biodiversity - Flora - Fauna	Area, within protected areas, that is occupied by new infrastructure or activity funded by the OP	Technical Bulletins of Projects Calculation of the land area if it is about an activity or the area of the route (including arrangements) whether the road.	The aim of the indicator is to monitor the intensity of actions of projects or activities that are financed by the programme in areas with significant biodiversity.
	Conservation status of priority species for marine area of Adriatic - Ionian	National Studies for the conservation status of species in accordance with Article17 of Directive 92/43 - every five years (2015, 2020). In priority, it is referred to marine mammals, to turtle caretta caretta.	It is referred to the progress of achieving the objectives for protection of Biodiversity.
Climate Change	Average CO_2 production per passengers/km – tones/km per year on ferry connections between Puglia - Greece (within the eligible area)	Ports Organizations	The indicator is referred to the efficiency of energy-saving projects, RES in cross-border areas.
Water	Maintaining the overall rate of coastal bathing that are classified according to the criteria of Directive 7/2006 as "excellent quality" over 97%	Water Services, WISE database annual measurements	The indicator is generally referred to the quality of the marine (coastal) environment. In cases of point quality degradation, it should be identified if an action of the Programme is implemented in the area and it should be examined if there is (and how much) a contribution.
Air pollution - noise	Average time required for boarding - disembarking vehicles vessels operating ferry connections to the cross-border area	Ports Organizations	Monitoring of air quality from air pollution in urban areas, ports.
Cultural Heritage - Landscape	Increase visiting to archaeological sites and museums	Reports of organizations that will join the programme	The indicator aims at measuring both the "positive synergy" of enhancing, but also at identifying the number in order the concept of resource or service degradation to be quantified in the future

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