Strategic Environmental Assessment

ENVIRONMENTAL REPORT

MED Programme 2007-2013

Version 1-1

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Non – technical summary

The Task Force for the MED Operational Program 2007-2013 developed a draft Operational Programme for transnational cooperation in line with the ERDF Regulation. According to the SEA directive (2001/42/EC) a Strategic Environmental Assessment has been performed. The environmental report was elaborated according to Annex I of the SEA directive.

Currrent State of Environment and Trends

Air and Climate: Climate change is inevitable. Green House Gas emissions have grown overall since 2000. Many cost-effective strategies for improving energy efficiency remain heavily underused. The share of renewable electricity remains low in the MED region. While our air is generally cleaner, the trends are not good enough to meet air quality targets for 2010

Biodiversity, Flora and Fauna: The Mediterranean basin has been identified as one of the world's 34 biodiversity hot spots. The coastal zones and islands of the Mediterranean, which are especially rich in species diversity, are under particular pressure. The Mediterranean region as a whole, is likely to face more droughts and fires, land degradation due to desertification and spreading salinity in newly irrigated areas, and loss of wetlands. Much of the region's biodiversity is already close to its climatic limit.

Water: Control of point sources of pollution is showing some good results, while diffuse sources will continue to be a challenge for environmental management. The quality of river water is showing a degrading trend. Water availability and providing drinking water in sufficient quality and quantity, considering the influence of climatic change will be a challenge. Key pressures, drivers and impacts affecting the Mediterranean marine environment derive from a variety of land and marine-based activities and the two key global processes of climate change and ocean dynamics.

Soil: There are many threats to soil — erosion, sealing, contamination, salinisation. These have proven difficult to tackle up to now and are expected to continue to be a challenge in line with expected future developments in the MED area on urbanisation, intensive agriculture and industrialisation/deindustrialisation.

Population and Human Health: Several diseases are linked directly or indirectly to environmental issues. Especially air pollutants and noise are identified as important factors influencing human health. Extreme heat waves, related to climatic change are also a factor.

Cultural Heritage and Landscape: Urban sprawl is a growing problem. Cultural heritage sites represent part of Mediterranean identity; the integration of these values into economic activities has already begun.

Program Objectives and Priorities

The MED Program is structured into Priority Axis and Objectives as follows.

Priority Axis 1: Strengthening innovation capacities

- OBJECTIVE 1.1: Dissemination of innovative technologies and know-how
- OBJECTIVE 1.2: Strengthening of territorial economic cooperation

Priority Axis 2 : Environmental protection and promotion of a sustainable territorial development

- OBJECTIVE 2.1: Protection and enhancement of natural and cultural resources, risks prevention
- OBJECTIVE 2.2: Promotion of renewable energies and improvement of energy efficiency
- OBJECTIVE 2.3**: Prevention of maritime risks and strengthening of maritime safety**

Priority Axis 3: Improve mobility and territorial accessibility

- OBJECTIVE 3.1: Improvement of transport and transit capacities and promotion of multimodality
- OBJECTIVE 3.2: Support to the use of information technologies for a better accessibility and territorial cooperation

Priority Axis 4: Promotion of a polycentric and integrated development of the Med space

- OBJECTIVE 4.1: To stimulate cooperation and improve territorial governance
- OBJECTIVE 4.2: Promotion of identity and enhancement of cultural resources for a better integration of MED space

Assessment Methodology

Legislation and strategic policy documents are used to compile the Environmental Protection Objectives ("SEA-objectives"). These Objectives are then, for the assessment purposes, consolidated into easy to use Assessment Questions.

The Environmental Assessment is performed with:

A. An identification of the positive or negative, direct or indirect relationship of Program Objectives to the Defined Environmental Objectives.

B. An identification of the possible effects and impacts of the program possible actions, when put through the defined Assessment Questions.

Possible Environmental Impacts of the Program

Most of the programme priorities and possible actions will have positive impacts on the relevant environmental objectives. Negative indirect effects are mainly expected in the implementation of Objective 3.1. Possible negative impacts on the environment can be anticipated through proper project selection criteria.

The suggestions can be summarized to the following:

Priority Axis1: Strengthening innovation capacities
Objective 1.1: Dissemination of innovative technologies and know-how
More details on special sector demands for the diffusion of innovation and technology transfer could be incorporated. In order to diminish any possible negative impacts on landscape reuse of existing facilities should be promoted In order to diminish any possible negative impacts on water soil and biodiversity agro environmental and low intensity tourist innovative enterprises should be promoted.
Objective 1.2 Strengthening of territorial economic cooperation
Possible action specifications can be supplemented with an environmental approach, eg support the setup of environmental scientific and technological poles
Priority Axis2: Environmental protection and promotion of a sustainable territorial development
Objective 2.1: Protection and enhancement of natural and cultural resources, risks prevention
A stronger focus on actions promoting long term reduction of greenhouse gas emissions even beyond the time frame of Kyoto-protocol (2012+). Actions related to climate change adaptation could be incorporated

Objective 2.2 Promotion of renewable energies and improvement of energy efficiency
Innovate concerning standardisation and adapt norms could include in the key renovation of buildings (residential and non-residential) including facility management and energy efficiency
Priority Axis 3 : Improve mobility and territorial accessibility
Objective 3.1 Improvement of transport and transit capacities and promotion of multimodality
All projects supporting the increase of transport capacities should be accompanied with impact assessments, addressing impacts to air, climate, water, biodiversity, soil, human health, landscape and cultural heritage. Multimodal transport solutions should be linked with a sustainable strategy for settlement development. The funded projects should have a clear focus on strengthening environmentally friendly modes of transport.

1. Strategic Environmental Assessment within the Framework of an Ex-Ante Evaluation - Introduction

The environmental assessment at hand is carried out according to the European Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment, known as the SEA (Strategic Environmental Assessment) Directive.

The objective of this directive is to provide a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development (Art.1).

Among the major elements for a SEA required in the SEA directive is Scoping (Art. 3) that aims to define

- the geographical area of relevance,
- the period of time to be relevant for trends and effects and
- the relevant environmental issues, which should be considered within the SEA.

Furthermore the method of assessment and a method of generating and assessing reasonable alternatives must be defined.

The Environmental Report is based on the Environmental Assessment (Art. 5 and 8 and Annex I) and includes the following information:

- Contents and level of detail in the plan or programme
- Geographical scope of the plan or programme
- Description of the methods of assessment
- Likely significant effects on the environment of implementing the plan or programme
- Reasonable alternatives taking into account the objectives
- Mitigation measures for likely negative significant environmental effects
- Stage in the decision making process

The environmental report and the opinions expressed during the consultation period are taken into account during the preparation of the operational programme and before its adoption.

The Draft Operational Programme and Environmental Report will be made available during Consultation (Art. 6 & 7) as foreseen.

Early identification of adverse effects from program implementation will be made possible through Monitoring (Art. 10);

The MED Area Programme sets a framework for transnational cooperation in small budget and “soft” (not infrastructure) projects within the Mediterranean Area, Environmental considerations are strongly considered in it.

Since the MED Programme is a financing framework for potential soft – small budget projects, the description of effects and measures will be at a strategic and generalised level.

2. Outline of Contents, Priority Axis, Objectives and Possible Actions of the MED Programming Document

Following the Lisbon (2000) and Gothenburg (2001) councils, the European Union has set political objectives that aim at strengthening the dynamism of European competitiveness whilst ensuring social cohesion and sustainable development objectives are met.

However, the European Council in Brussels (22 and 23 March 2005) analysed that the Lisbon objectives were not completely met. Consequently, it adopted a strategy that re-focused priorities on competitiveness, innovation, growth and employment, whilst reasserting that the three objectives of the Lisbon strategy – economic, social and environmental- should act in a balanced way.

New European priorities for cohesion are defined by the "Community strategic guidelines for cohesion" (CSG)1 and have been determined by taking the Broad economic policy guidelines and the European employment strategy (EES) into account.

The aim is to strengthen economic and social cohesion so as to favour a harmonious, balanced and sustainable development of the European Community. Community action aims at addressing issues linked to economic, social and spatial disparities, to the acceleration of economic restructuring and to the ageing of populations.

In July 2006, the Commission approved the final regulations concerning the reform of European cohesion policy for the period between January 1st 2007 and December 31st 20132.

308 billion euros are allocated to actions that comply with these three new objectives: Convergence; Regional competitiveness and employment; European territorial cooperation.

The aim of European territorial cooperation is to strengthen the cooperation at the cross-border, transnational and interregional level, building on the previous INTERREG initiative. It is funded by ERDF.

In terms of transnational cooperation, ERDF regulations stress four priorities:

- Innovation: creation and development of scientific and technological networks, and the enhancement of regional R&TD and innovation capacities, where these make a direct contribution to the balanced economic development of transnational areas.
- Environment: water management, energy efficiency, risk prevention and environmental protection activities with a clear transnational dimension.
- Accessibility: activities to improve access to and quality of transport and telecommunications services where these have a clear transnational dimension.
- Sustainable urban development: strengthening polycentric development at transnational, national and regional level, with a clear transnational impact.

The MED Program is structured into Priority Axis and Objectives as follows.

[1] Communication from the Commission, « Cohesion Policy in Support of Growth and Jobs: Community Strategic Guidelines 2007-2013 » COM(2005) 0299

[2] Regulation (EC) N° 1080/2006 of the European Parliament and the Council of July 2006 on the European Regional Development Fund; Regulation (EC) N° 1081/2006 of the European Parliament and the Council of July 2006 on the European Social Fund; Regulation (EC) N° 1082/2006 of the European Parliament and of the Council of 5 July 2006 on a European grouping of territorial cooperation (EGTC); Council Regulation (EC) N° 1083/2006 of July 2006 laying down general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund; Council Regulation (EC) N° 1084/2006 of 11July 2006 establishing a Cohesion Fund.

Priority Axis 1: Strengthening innovation capacities

Europe, and particularly the MED area, face strong international competition. Their technological, economic and organisational potential should be strengthened, in order to guarantee a higher level of competitiveness, development and growth in years to come. These objectives must be followed by enhancing endogenous resources and by ensuring the implementation of the sustainable development principle.

OBJECTIVE 1.1 : Dissemination of innovative technologies and know-how

The development of innovation requires to intervene on technology, know-how and best practices dissemination and to ensure their good implementation in the enterprises. At a transnational scale, the process of transfer of technology, the development of direct relations between research institutions and economic actors, as well as exchange aiming to adapt competences constitute strong opportunities to support innovation and competitiveness of territories.

Objective 1.1 Possible actions:

Favor innovation and technological transfer within SMEs:

- Strengthening institutions helping enterprises for technological and know-how transfer;
- Creation of partnerships between structures helping enterprises, economic actors, chamber of commerce to disseminate good practices and innovative technologies;
- Creation of transnational partnerships to promote innovations on products, services, production processes, organisation modes so as to raise businesses' competitiveness
- Transnational cooperation and exchange of experiences to support projects of innovative enterprises in strategic fields (environment protection, tourism, agriculture, information technologies)
- Support to the development of technological and non technological innovations for services having a transnational dimension (tourism, communications…);
- Transnational actions of exchange of competences and know-how for the implementation of new processes, new technologies…
- Transnational diffusion of innovations concerning corporate finance; networking of financing tools for SMEs; development of specific financing means for innovative SMEs.

Favor links between businesses and applied research

- Develop transnational partnership between businesses and applied research to devise and disseminate new technologies, products or processes;
- Create innovative "knowledge and service communities" for SMEs;
- Develop projects between research institutions aiming to support economic development projects and strategies;
- Mobilise transnational partnerships to develop ways of implementing research results in the field of energy, of environment, of agriculture (better productivity, fighting pollution, energy savings, water saving and management);
- Improve access of economic actors to scientific knowledge, to innovative process, to good practices (capitalisation, dissemination)

OBJECTIVE 1.2 : Strengthening of territorial economic cooperation

The stake of transnational cooperation consists in building up networks and intervention strategies, in supporting partnerships and cooperation measures in favour of innovative and competitive poles. To increase the territorial competitiveness, it is necessary to stimulate joint projects between clusters, between public and private actors at different territorial scales (towns, regions, cross border and transnational areas)

Objective 1.2 Possible actions:
Develop strategic relations between clusters, economic development poles, and innovation networks:

- Support transnational cooperation actions between clusters, poles of competitiveness, innovation networks, scientific networks and industrial poles in the context of common development strategies (development of new technologies, new products, new processes, new marketing strategies) ;
- To support cooperation between clusters, research centres and training centres for mid-term and long-term development strategies;
- To develop cooperation and exchanges to improve the capacity to apply for European calls for proposal (framework programme, CIP3)
- To support the setup of scientific and technological poles (regional, national, transnational) able to compete at an international level;

Strengthen territorial integration of economic development poles

- Develop projects between economic actors and public authorities (coordination, capitalisation, dissemination) in the context of medium and long term integrated territorial development strategies;
- To ensure a better use and valorisation of territorial resources (technological, human resources, natural resources) in economic development strategies

Priority Axis 2 : Environmental protection and promotion of a sustainable territorial development

Because of its geographical configuration (peninsulas, islands, mountains, large coastal conurbations, peripheral areas) and its human and economic activities, the Mediterranean area is subject to high environmental pressures

With regards to resources, Mediterranean Sea, water and biodiversity, landscape and cultural heritage are directly threatened by the intensity of human activity and by pollution (domestic activities, industries, agriculture, tourism).

Besides, Mediterranean space concentrates most of the major risks: fire, floods, draughts and reduction of water resources, seism, tsunami, and landslides. Those risks represent a danger for the populations, for economic activities, for the environment and for cultural resources of territories.

They are concerned as well industrial and maritime risks in a fragile area that will go on developing its regional and international activities.

In this context, bodies in charge of regional development and spatial planning are expected to cooperate in order to ensure a cautious and responsible management, preservation and valorization of natural and cultural resources.

OBJECTIVE 2.1 : Protection and enhancement of natural and cultural resources, risks prevention

In front of the threats that weigh on the environment, the transnational co-operation is essential to swap information and to coordinate the intervention, prevention and observation means between territorial systems.

The control of pollution relates to urban spaces, rural areas and sensitive territories (coasts, mountains, islands) and necessitates adapting the economic and industrial activities and the individual behaviors.

The environmental approach also requires taking into account the particularly significant natural risks in space Med (fires, drought, desertification, floods). These risks constitute a main field of intervention on a transnational scale (observation, prevention, intervention).

[3] CIP: Competitiveness and innovation framework programme

Then, it is as well necessary in the Med space to diffuse responsible practices, to improve the mobilization, storage, the re-use and a good stock management of water.

Objective 2.1 Possible Actions:

Reduction of pollution and promotion of sustainable development for fragile areas

Prevention and fight against pollution

- Support transnational initiatives to ensure that atmospheric pollution in urban areas and territorial metropolitan systems is monitored and encourage its reduction ;
- Support transnational initiatives aiming to improve information systems and information of the population;
- Disseminate and implement good practices concerning transports and waste management…
- Disseminate innovation and good practices concerning the impact of agricultural activities on water resources;
- Promote the integration of European and international norms in public policies (reducing green house gas)

Enhancement of fragile areas

- Disseminate good practices at transnational level concerning management of protected areas (reserves and natural parks, Natura 2000, wetland,);
- Promote conservation of the built heritage, landscape and every cultural resource (material and immaterial) within the context of an integrated territorial development approach;
- Elaborate common strategies connecting cultural and natural resource protection in link with the promotion of sustainable tourism;
- Disseminate good practices and elaborate common strategies for protection of biodiversity and landscapes;
- Transnational initiatives to promote sustainable economic development activities (sustainable fishing, aquaculture ; agriculture ; green tourism);

Management and planning

- Develop and disseminate at transnational level innovative strategies for an integrated management of sensitive areas (coasts, mountains, small islands) ;
- Sharing and/or disseminate at transnational level observation, evaluation and management systems for the protection of natural and cultural heritage;
- Develop common norms and regulation, harmonise data and information systems at transnational level; coordinate alert and intervention systems;
- Promote setting up and implementation of local agenda 21 and Habitat agenda;
- Harmonise control and certification norms; improve the dissemination and implementation of certification systems;
- To disseminate good practices concerning sustainable development for public administrations;
- To inform and raise public awareness concerning environmental Mediterranean heritage and on the existing threats;

Coordination of prevention and fighting against natural risks (fires, drought, desertification, floods)

- Structure and integrate tools of observation of the risks, of evaluation and diffusion of information at a transnational level: definition of risk areas and fragile areas, evaluation of the consequences of climate changes, monitoring of floods, fires, tsunamis, sea level rise, assessment of vulnerability of landscapes and natural resources.
- Develop network of operative systems; develop common standards of equipment, of processes, of information diffusion; develop applications from the Galileo system;
- Set up and disseminate common norms, technologies; processes and information systems; to support norms harmonisation;
- Improve transnational communication systems and intervention means to deal with crisis; support mutualisation of intervention means; support a better transnational coordination of operational structures; elaborate and implement assistance plans at regional, national and transnational level;
- Improve integration of sectoral and territorial policies to prevent risks and make intervention easier;
- Develop at transnational level risks and natural disasters management plans;

Objective 2.1 Possible Actions (continued):
Protection and enhancement of water resources
Mobilization and enhancement

- Promote transnational innovative approaches that combine resource management and mobilisation;
- Ensure that resources are secured; favour water saving and recycling (home, industry, tourism, agriculture) ; promote alternative storage means;
- Use scientific research results to promote a better use of water;

Raise awareness and inform populations

- Develop transnational information, education and awareness raising systems with regards to water and to its management and saving amongst targeted audiences;
- Promote eco-responsible behaviour and solidarity;

OBJECTIVE 2.2 : Promotion of renewable energies and improvement of energy efficiency

The pressure put by human activities on the environment, climatic changes which are occurring (greenhouse gas emissions, global warming) and rarefaction of fossil energy (supplying, energy self-sufficiency), necessitate to adapt economic activities and to promote new technologies following Kyoto objectives.

The diversification and the promotion of the sources of alternative energies constitute a particularly important question and includes at the same time a development of the modes of consumption and modes of production. The technological innovation is an essential condition of these changes and represents a significant economic weight in an attractive but also economically and environmentally fragile Mediterranean area.

Objective 2.2 Possible actions:
Support technological innovation for the promotion of renewable energy:

- To support transnational networks in favour of development and transfer of innovative technologies for the production and use of renewable energy. Support to energy systems contributing to reduce green house gas;
- Use research results to develop process aiming at reducing energy consumption and improving energy efficiency;
- Develop networks of sustainable energy technologies around applied projects ; support the development of common technological instruments;
- Favour the exchange of information and management mode around applied projects ;

Manage energy consumption and better use of renewable energy:

- To develop transnational partnerships in favour of the use of innovative construction materials and processes (High environmental quality, technology transfer);
- Promote pilot projects concerning the production of renewable energy and energy savings (solar energy, wind energy, biomass, heat pumps…);
- Develop production and/or use of renewable energy in public policies (solar energy, biomass, biogas, biofuel, biodiesel…);
- Disseminate innovations and good practices in the field of public transports;
- Develop sustainable energy schemes ;
- Support harmonisation of norms and promote implementation of international orientations concerning energy savings, energy efficiency, energy consumption…
- Innovate concerning standardisation and adapt norms in key sectors like construction, housing, transports…;
- Develop clean energy applied to sustainable tourism;
- Develop partnerships with large energy business to promote alternative production processes and alternative uses;
- To inform the civil society and raise awareness

OBJECTIVE 2.3 : Prevention of maritime risks and strengthening of maritime safety

The Mediterranean sea is an important transit space with approximately one third of the worldwide sea traffic. Besides traffic density that represents a risk for passengers, many boats transport dangerous freight that constitutes many potential risks for coasts and for the marine environment (approximately 20% of the worldwide oil transit through the Mediterranean sea).

Apart from any major incident, these flows, with the coastal industrial activities, generate permanent rejections of dangerous substances in the sea.

Those risks require a good management of different industrial activities as well as a high-performance observation, communication and exchange system in the whole area. It is particularly important to optimize the capacity to react amongst exposed countries in the case of an accident or pollution (particularly at sea).

Objective 2.3 Possible actions:
Adaptation and coordination of prevention and intervention systems

- Improve knowledge of traffics and risks on the whole Mediterranean area with the implementation of common observation, analyse and communication systems;
- Use of new observation means with new technologies and the Galileo system;
- Coordinate traffic monitoring and observation systems in dangerous areas for navigation security and environmental protection; coordinate pollution monitoring;
- Support transnational joint actions concerning prevention, alert, control, management, and risk monitoring in maritime transport and industrial activity ;
- Transnational initiatives to pool and share resources (technical means, exchange of competences, use of innovative technologies…) ;
- Implementation of coordinated prevention system at sea and on the mainland in coastal areas

Priority Axis 3 : Improve mobility and territorial accessibility

The Mediterranean area confronts accessibility and connection problems, whether they are between its own regions (isolated areas, islands, rural areas), its economic poles or the surrounding international areas.

At the same time, the development of economic activity, of tourism, the rise in goods and population movements puts a high level of pressure on coastal and urban areas and on the main transport corridors.

This situation necessitates intervening on the organization of transport means in order to improve their functioning and to reduce their environmental impact.

Accessibility to the networks and services of electronic communication also constitutes a major attractiveness and opening-up for the most isolated areas (rural and islands), but also of optimization of economic, administrative and financial flows in the MED space.

OBJECTIVE 3.1 : Improvement of transport and transit capacities and promotion of multimodality

Concerning Med space transportations, it is necessary to take into account different scales with the need of better east-west connections, the necessity to improve islands accessibility and the importance of transnational connections with Africa and Asia. Coordination between regional, national and transnational policies is a major issue in this context.

The MED space should better promote its strategic geographical position and its connexions with north European regions. Considering sustainable development objectives, the adaptation and the

use of networks requires strong initiatives in favour of intermodality and alternative transportation means.

Objective 3.1 Possible actions:
Improvement of transnational mobility and of territorial accessibility:

- Strengthen transnational joint actions related to European transport corridors in the Mediterranean area;
- Support public policies aiming to improve and develop Med priority corridors;
- Promote transnational initiatives to enhance sea/land interfaces;
- Support initiatives aiming to improve connections with north-Africa;
- Promote coordinated development strategies between ports to strengthen their capacities against international competition (transhipment, access of goods to European countries
- Improve maritime traffic management;
- Promote sea highways, short sea shipping;
- Improve connexions between islands and islands accessibility;

Enhancement of multimodality and of sustainable transport systems:

- Promote transnational initiatives for the use of multimodal platforms;
- Promote inter-operability, road-rail transport and links with high speed transport (of goods and passengers) ;
- To use new technologies for better traffic management;
- Develop innovative transport systems and the use of public transports in urban, rural and sensitive areas;

OBJECTIVE 3.2 : Support to the use of information technologies for a better accessibility and territorial cooperation

Within de MED space, information and communication technologies constitute an important issue in the strategy of perspective of opening up of isolated territories (access to services, to knowledge, electronic exchanges). This is an opportunity both for the population and for the development of economic activities.

At a wider scale, new use should help to strengthen transnational cooperation strategies on the main development and environmental issues of the Med space.

Objective 3.2 Possible Actions
Support innovative digital services and improve the access of the population to information technologies in isolated territories:

- To disseminate innovative experiences allowing an easier access to digital services;
- To facilitate the development of innovating on line services on the scale of Med space;
- To promote the use of information technologies to the civil society, to administrations, economic actors;
- Promote the use of information technologies and develop innovative digital services for isolated territories;

Support the use of information technologies to improve governance and strengthen transnational cooperation on strategic issues:

- Improve transnational observation, analyse and communication means on sensitive issues like maritime co-operation, goods and passenger transports, management of water, prevention of risks;
- Develop schemes of electronic communication networks on a transnational scale;
- Support the transnational initiatives allowing a more effective use of ICT for the population, the administrations and the economic actors;
- Develop interoperability and security of electronic platforms; to increase the reliability and security of electronic transactions;
- Disseminate good practices and support with the use of information technologies a better performance of public policies in major agglomerations;

Priority Axis 4 : Promotion of a polycentric and integrated development of the Med space

In the MED area, cities and metropolis boast the highest levels of competitiveness, of GDP per capita, of services or of scientific skills. These areas reflect a concentration of wealth and activities in relation to the hinterlands.

To enhance potentials and territorial competitiveness, to avoid a widening of territorial disparities, and better manage the effects of urban development, it is essential to strengthen cooperation networks4. It is necessary, on one side, to support synergies between development areas (Metropolis, urban and rural areas…), and, on the other side, to improve territorial governance systems on mains cooperation issues.

Moreover, in a fragmented environment, culture, history and heritage represents strong integration and cohesion factors for Mediterranean regions. The issue is to promote innovative initiatives that will enhance Mediterranean space identity and cultural specificities in front of economic globalization and international competition.

OBJECTIVE 4.1 : To stimulate cooperation and improve territorial governance

The will to promote a polycentric spatial approach to space involves encouraging synergies between development areas, taking into account the specific problems of isolated and declining areas. The implementation of integrated intervention strategies should be based on modes of governance that can bring together various levels and types of areas around common transnational objectives: enhancing endogenous resources, improvement of communication means, coordination of strategies and development policies…

Objective 4.1 Possible Actions:

Promotion of coordinated development strategies between local, regional and national authorities

- Strengthening roles and potentialities of territories through concerted territorial development strategies between large Mediterranean urban areas (for example between metropolis, between ports);
- Strengthening town networks on common development issues (economic development, transports, energy, environment…);
- Develop cooperation to improve social cohesion and territorial attractiveness;
- Promote collaboration between urban and rural territories in order to improve networking between institutions and services (innovation, culture, tourism): Networking between small size structures and integration of transnational systems able to deal with common issues related to the promotion of cultural and natural heritage; Develop identity and strengthen the relation between citizens and their territory; Promote strategic integration of peripheral zones in transnational development.
- Promote a polycentric system in the Med area by strengthening cooperation between territorial systems (relations between urban areas, between urban and rural areas).

Improvement of governance systems

- Disseminate good practices at transnational level and promote the use of new and better territorial planning instruments and better development models;
- Disseminate good practices and promote initiatives for decentralization of services for middle size towns and less populated territories;
- To strengthen transnational dimension of local governance systems which use approaches and operational tools related to strategic planning (urban environment);
- Improve governance systems and improve relations and cooperation between territories in order to reach a more balanced economic development;
- Promote concerted and innovative institutional actions between public administrations of different territories (regions, towns, rural areas) to rationalise their actions and support the setting up of common strategies;

[4] Cooperation networks should not focus on socioeconomic aspect of sustainable urban development which are already taken into account by URBACT community initiative.

OBJECTIVE 4.2.: Promotion of identity and enhancement of cultural resources for a better integration of MED space

Mediterranean regions have a strong historical and cultural identity, which constitutes a strong factor of unity and of attractiveness. This cultural heritage must be preserved but it must as well be adapted in front of a changing economic development conditions.

Therefore, identity and culture represent potentials for innovation; creativeness and integration, which must be supported in a coordinated manner within the Med space in order to better assert its specificities and assets.

Objective 4.2 Possible Actions:

Strengthening of transnational networks for the valorization of Mediterranean heritage

- Implement transnational networks and support common transnational management of poles and complex cultural territorial systems (urban areas, historical centres, cultural districts etc.), mainly those with specific common cultural value (world heritage, UNESCO, etc);
- Support transnational initiatives to promote cultural identity;
- Protect historical heritage, landscapes and every cultural resource (material and immaterial) in a perspective of integrated territorial development;

Develop activities and services for economic and cultural enhancement

- To support exchanges of good practices and develop common strategies for the implementation of innovative cultural services;
- Promote cultural initiatives aiming to increase territorial economic attractiveness;
- To promote exchanges and experiences for a better economic valorisation of cultural innovations;

3 Scoping and Method of Assessment

3.1 The SEA Approach

The extent and depth of information and assessment in the Environmental Report must facilitate the following:

- Focus on key environmental issues of the programming area
- Analyze relevant impacts on the aforementioned environmental issues for the level of program strategies and outcomes
- Elaboration of alternatives for program developers
- Deliver information for environmental authorities, stakeholders and the general public on environmental impacts, but also on positive opportunities for improvements as a result of programme implementation

It is evident that two scoping defining factors stand out:

- The geographical territory of the trans-national program.
- The nature of possible projects to be funded by the program

As already mentioned, The MED Programme sets a framework for transnational cooperation in small budget and "soft" (not infrastructure) projects, with environmental considerations strongly considered in it. It probably cannot be connected with significant immediate adverse environmental impacts. What has to be analysed, is whether the program will contribute to a development framework with indirect, long-term negative impacts. At the same, time long-term environmental benefits must be brought out and enhanced.

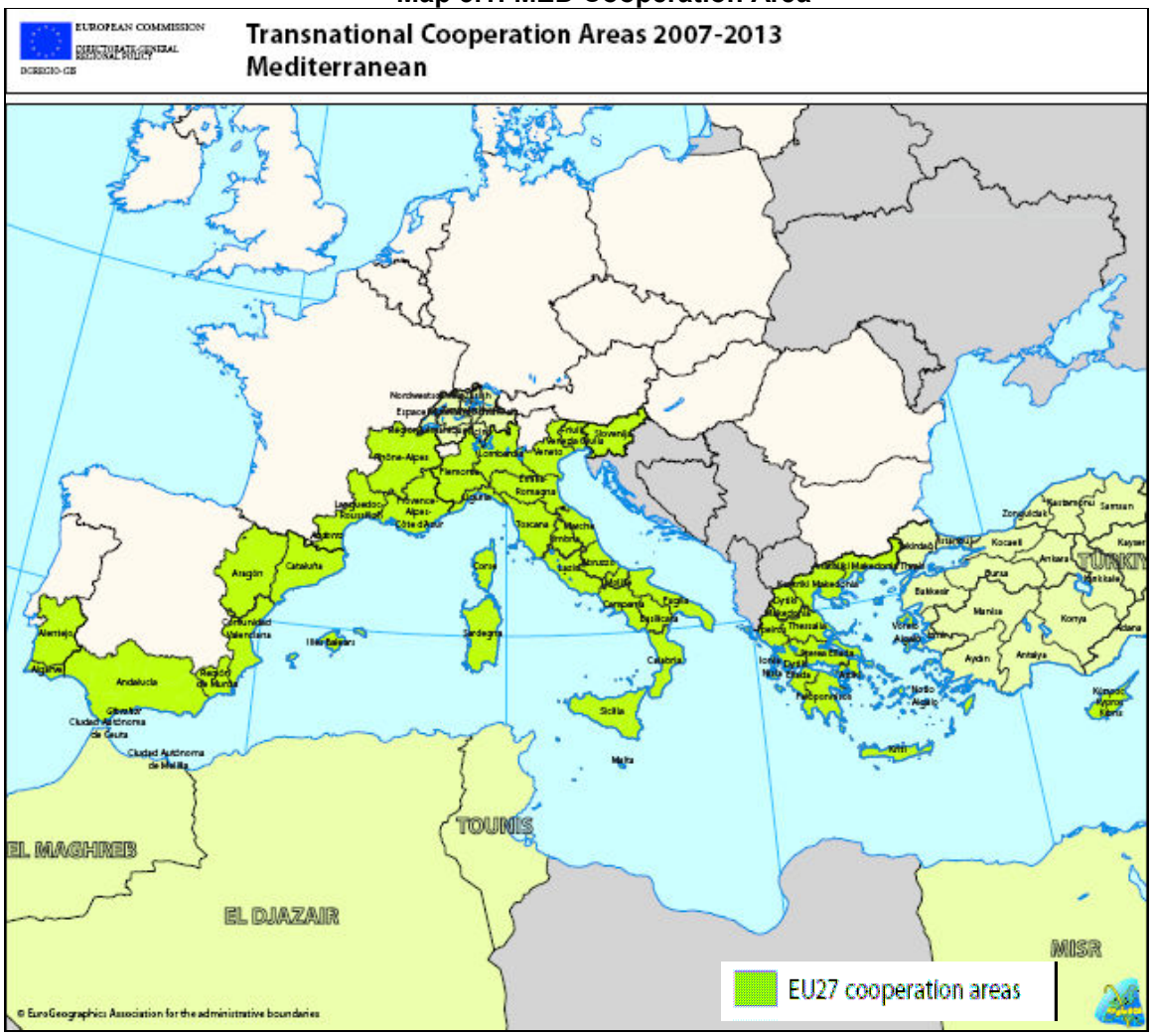
3.2 Level of information

Geographical area of relevance

The definition or the current state of the environment, its trends and the impact assessment for the Programs Priorities, Objectives and Possible Actions is undertaken for the countries (with the exemption of UK, only the coastal area of Gibraltar is considered) of the defined programming area (see also next page map):

- **Cyprus**: the entire country
- **France**: 4 regions – Corse, Languedoc-Roussillon, Provence Alpes Côte d'Azur, Rhône-Alpes
- **Greece**: the entire country
- **Italy**: eighteen regions : Abruzzo, Apulia, Basilicata, Calabria, Campania, Emilia-Romagna, Friuli-Venezia Giulia, Latium, Liguria, Lombardy, Marche, Molise, Ombria, Piedmont, Sardinia, Sicily, Tuscany, Veneto.
- **Malta**: the entire country
- **Portugal**: two regions – Algarve, Alentejo
- **Slovenia**: the entire country
- **Spain**: six autonomous regions and the two autonomous cities – Andalusia, Aragon, Catalonia, Balearic islands, Murcia, Valencia, Ceuta and Melilla
- **United-Kingdom**: one region of economic programming – Gibraltar

Map 3.1: MED Cooperation Area



It is evident that when addressing global environmental issues like climate change, a larger geographical context is considered.

Relevant period of time

Environmental trends and Program effects are assessed throughout the programming period 2007-2013, until the project implementation deadline (2015) and in some cases (when project effects are considered Long Term) even further on.

Environmental Issues

Information on relevant environmental issues must be such as to describe the current environmental status and its trends in a way that Program impacts and effects can be assessed. The main Environmental issues and concerns that are considered under the SEA Directive are:

- air and climate;
- biodiversity, fauna and flora;
- water;
- soil;
- population and human health;
- cultural heritage (including architectural and archaeological heritage) and landscape.

It is noted that issues like a). use of renewable resources, b). energy efficiency, c). adaptation to climate change, d) waste and risk management are considered within the aforementioned

framework: a and b are considered within the issue of air and climate, c within the water related issues, d within water, soil and population health issues.

3.3 Assessment Methodology

The Assessment follows the steps:

Table 3.1 Evaluation Steps

Typical Programming Steps	Corresponding SEA steps	Progress
Determine the overall objectives of the programming document and the main issues it should address	Determine environmental issues, objectives and indicators that should be considered during the SEA process	Completed with the submission of the draft report
Possible consultations with other relevant competent authorities	Compulsory consultation with environmental authorities. Consultation with concerned public recommended	Starts after the submission of the Draft Report to the contracting authority
Analysis of the development context	Evaluate the current situation and trends and their likely evolution if the programming document is not implemented	Completed with the submission of the draft report
Propose development objectives and priorities	Assess proposed development objectives and priorities	Completed with the submission of the draft report
Propose eligible actions	Assess proposed eligible actions	Completed with the submission of the draft report
Propose evaluation criteria and monitoring system	Evaluate proposed evaluation criteria system Evaluate proposed monitoringsystem	Completed with the submission of the draft report
Compile the proposed programming document and hold consultations with authorities and stakeholders	Compile the Environmental Report and hold consultations with environmental authorities and the public	Starts after the submission of the Draft Report
Formal Decision of the Programming Document and inform public about decision	Take into account Environmental Report and consultation results in decision making. Inform environmental authorities and the public on how the outcomes of the SEA have been taken into account.	Compilation of Final Report after the consultation period

In chapter four, legislation and strategic policies are used to compile the Environmental Protection Objectives ("SEA-objectives"). These Objectives are then used, for the assessment purposes, consolidated into easy to use Assessment Questions. These Assessment Questions are summarized in table 3-2.

Table 3.2 Assessment Questions

1. Air and Climate	Will the realization of the OP lead to pollutant (within member states and transboundary), GHG emission reduction? Will the realization of the OP lead to improved energy efficiency and savings? Will the realization of the OP promote renewable and low carbon energy systems? Will the realization of the OP promote environmentally friendly transportation?
2. Biodiversity, Flora and Fauna	Will the realization of the OP support the protection and reconstruction of habitats? Will the realization of the OP contribute to the decrease of loss of biodiversity?
3. Water	Will the realization of the OP promote water status improvement? Will the realization of the OP promote marine waters good environmental status?
4. Soil	Will the realization of the OP contribute in waste minimization, sustainable waste management and the reduction of contaminated sites? Will the realization of the OP contribute to the preservation of soil attributes and the reduction of impacts by the use of natural resources?
5. Population and Human Health	Will the realization of the OP contribute to the control of environmental related health risks and hazards? Will the realization of the OP reduce flood risks? Will the realization of the OP contribute the reduction of the population exposed to noise?
6. Cultural Heritage and Landscape	Will the realization of the OP limit the demand on urban land for urban development? Will the realization of the OP contribute to the protection of natural heritage?
	Or will they have an adverse effect on the considered issues

The Environmental Assessment is performed with:

A. An identification of the positive or negative, direct or indirect relationship of Program Objectives to the Defined environmental Objectives.

B. An identification of the possible effects and impacts of the program possible actions when put through the considerations of Table3.2. Each effect is characterized:

- Probability: Very probable **(VP)**, Probable **(P)**
- Scale: Large-Scale Negative (**LSN**), Negative (**N**), Large-Scale Positive (**LSP**), Positive (**P**)
- Frequency/duration: Frequent to Constant (**FC**) / Long-Term to Permanent **(LTP)**, Occasional **(O)** / Short-Term **(ST)**
- Reversibility: Irreversible **(I)**, Reversible **(R)**
- Transboundary dimension: Possible Transboundary Effect (**PTE**)

- Uncertainty **(U)**: Possible impact totally depends on the implementation arrangements described in accompanying comments.

The analyses results are given in an assessment matrix with comments and suggestions

3.4 Discussion of Alternatives and measures to mitigate negative impacts

The Assessment was based January 22nd 2007 version of the Programming Document of the Operational Program. The suggestions will be discussed in the next Task Force meeting.

The description of the current state of the environment and the likely evolution without implementation of the program (zero-option) can be found in chapter five of this environmental report.

There is not any alternative for a fundamental change of the overall structure of the programme, as priorities have to refer to specific ERDF Regulation. The assessment of different draft versions of the operational programme (including different approaches to reach the aims of the priorities) complies with the request of SEA-directive to “deliver an outline of the reasons for selecting alternatives”

The suggestions for adjustments of the last draft of the program including possible activities to be additionally implemented into the OP indicate how to minimize impacts and optimize positive effects on environmental issues.

4 Environmental Protection Objectives

For comprehensive programming documents, such as the one under consideration, which cover numerous development sectors, it is useful to identify initially all of the relevant environmental objectives for the entire programming document. In order to evaluate the consistency of the MED program with the EU environmental goals and objectives the following are used as basic reference:

- The 6th Community Environmental Action Program 2002 – 2012 (6th CEAP)
- The seven Thematic Strategies by the EC

The 6th CEAP defines as priorities:

Climate change: emphasizing climate change as an outstanding challenge of the next 10 years and beyond and setting the long term objective of stabilizing greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

Nature and Biodiveristy: protecting, conserving, restoring and developing natural systems functionality, protecting natural habitats, flora and fauna, halting desertification and the loss of biodiversity.

Environment, health and quality of life: demanding a high level of quality of life and social well being for citizens by providing an environment where the level of pollution does not give harm human health and the environment and by encouraging a sustainable urban development.

Natural resources and wastes: calling for better resource efficiency and resource and waste management to bring about more sustainable production and consumption patterns, thereby decoupling the use of resources and the generation of waste from the rate of economic growth and aiming to ensure that the consumption of renewable and non-renewable resources does not exceed the carrying capacity of the environment.

The EC defined Thematic Strategies cover the areas of:

- Air pollution
- Prevention and Recycling of Waste
- Protection and Conservation of the Marine Environment
- Soil
- Sustainable Use of Pesticides
- Sustainable Use of Resources
- Urban Environment

Moreover, EU directives, Working Documents and International Conventions are also considered. A detailed review of the aforementioned is given in the Legislation and Policy Annexes.

4.1 Air and Climate

On a European level, the **Thematic Strategy on Air Pollution** sets objectives for reducing certain pollutants and reinforces the legislative framework for combating air pollution with improving environmental legislation and integrating air quality concerns into related policies (COM 2005 446).

More in detail, in order to achieve the set objectives by 2020, there should be a reduction relative to the emissions of 2000 of:

- SO2: -82%;
- NOx: -60%;
- VOCs: -51%;

- Ammonia: -27%;
- Primary PM2.5: -59%.

Additionally to the above the following are mentioned:

- The **National Emission Ceilings for certain Pollutants Directive** (NECD) sets upper limits for each Member State for the total emissions in 2010 of the four pollutants responsible for acidification, eutrophication and ground-level ozone pollution (SO_2, NO_X, VOCs and NH_4), but leaves it largely to the Member States to decide the complying measures (2001/81/EC).
- The **Directive on the promotion of electricity produced from Renewable Energy Sources** calls for the member states to take appropriate steps to encourage a greater consumption of electricity from Renewable Energy Sources, that is to say up to 22 % for the 25 members state EUin the year 2010.
- The **Action Plan for Energy Efficiency** outlining a framework of policies and measures aiming at a 20% primary power saving by the year 2020 (COM 2006 545).
- The **Directive on the Energy Performance of Buildings** aiming to improve energy efficiency through the improvement of the energy performance of public, commercial and private buildings in all Member States (2002/91/EC).

It is also worth mentioning:

- the **White Paper European Transport Policy 2010** stressing the environmental sustainability of modern transport systems..
- the **Mid-term review of the EC's 2001 Transport White Paper** calling for: a. the disconnection of transport from its negative side effects via a range of policy tools. Choices for environmentally friendly transport modes must be appropriately made where: for long distance, urban area and congested corridors (COM 2001 370 and COM 2006 314).

On a broader level, climate change is addressed by the United Nations Framework Convention on Climate Change and the additional **Kyoto Protocol** (UNFCCC 1997), which targets for 2008-2012 the following Green House Gas (GHG) emissions reductions from 1990 levels in Europe:

- 8 % (for the 15 member state EU, Slovenia),
- (Cyprus and Malta have no targets defined).

Last but not least the United Nations Economic Commission for Europe (UNECE) has addressed via the **Convention on Long-range Trans-boundary Air Pollution** (CLRTAP) calls for the Parties to endeavour on limiting, gradually reducing and preventing air pollution, including long-range trans-boundary air pollution (emission of pollutants related to acidification, eutrophication and ground-level ozone). It has been extended by eight protocols. Among other things, the protocols provide critical loads of the entry of S and N compounds and heavy metals as well as critical levels of ozone for forests and agricultural plants (UNECE 2006).

Considering the above highlights as well as the additional ones identified in the Legislation and Policy Annexes the Objectives as far as Air and Climate are concerned are summarized as follows:

Objectives considered in the Assessment
Reduction of certain pollutants like dioxins, furans, ultrafine particles under 2.5 microns
Compliance with upper limits for certain pollutants like SO_2, NO_X, VOCs, NH_4, Pb, CO, benzene etc
GHG emissions reductions in synergy with Lisbon Strategy –trading schemes
Limiting, gradually reducing and preventing air pollution, including long-range trans-boundary air pollution
Greater consumption of electricity from Renewable Energy Sources
Use of Biomass and Biofuels – Encouragement of National Plans
Primary power saving
Increase of energy efficiency –support high efficiency cogeneration of heat
Improvement of the energy performance of buildings
Low Carbon Energy systems with a cost effective approach
Limits on air pollution from several types of combustion engines
Environmental sustainability of transport and environmentally friendly transport modes
Approximation of laws – economic instruments
Cutting consumption of ozone depleting pesticides
Adapt to impacts of climate change
Facilitate Stakeholder participation
Support carbon capture and storage
Private funding of abatement projects outside the EU
Deriving Questions: Will the realization of the OP lead to pollutant (within member states and transboundary), GHG emission reduction?
Will the realization of the OP lead to improved energy efficiency and savings
Will the realization of the OP promote renewable and low carbon energy systems
Will the realization of the OP promote environmentally friendly transportation

4.3 Biodiversity, Flora and Fauna

The **6th CEAP** as well as the **European Community Biodiversity Strategy** (COM 1998 42) have as their main objective the protection and reconstruction of ecosystems to maintain the variety of species.

The **European strategy for Sustainable Development** (Kiev resolution on biodiversity) sets the target the decrease in loss of biodiversity by 2010 (COM 2001 264). The same is stated in the **UN-Convention on Biological Diversity.**

At a EU level the "**Birds Directive**" (79/409/EEC) and the "**Habitats Directive**" (92/43/EEC) are mentioned as far as protecting and conserving the wildlife and habitats. Member states are obligated to designate protected areas within the **Natura 2000** network. Sites belonging to the network must have set sound management objectives by 2010 (EEA 2005).

The EU is also a party of the **Cartagena Protocol on Biosafety**, which seeks to protect biological diversity from the potential risks posed by genetically modified organisms.

Considering the above highlights as well as the additional ones identified in the Legislation and Policy Annexes the Objectives as far as Biodiversity, Flora and Fauna are concerned are summarized as follows:

Objectives considered in the Assessment
Reconstruction of ecosystems to maintain the variety of species
Sound management objectives for protected areas
Decrease in loss of biodiversity
Boost organic farming
Deriving Questions:
Will the realization of the OP support the protection and reconstruction of habitats
Will the realization of the OP contribute to the decrease of loss of biodiversity

4.3 Water

The **Water Frame Work Directive** (2000/60/EC) calls for sustainable use of water resources, the protection of ground water (source for drinking water) and systematic improvement water bodies status by 2015. Member states have to prepare and adopt management plans in order to achieve the "good state".

Basic EU water related legislation is:

- the **Nitrates Directive** (91/676/EEC) aimed at reducing nitrate and organic matter pollution from agricultural land,
- the **Urban Waste Water Treatment Directive** (91/271/EEC) aimed at reducing pollution from sewage treatment works and certain industries,
- the Integrated Pollution Prevention and Control Directive **IPPC** (96/61/EEC) aimed at controlling and preventing industrial water pollution and
- the **Drinking Water Directive** (98/83/EC).

The **Thematic Strategy on the Protection and Conservation of the Marine Environment** aims to a good environmental status of the EU's marine waters by 2021 (COM 2005 505) within a framework that:

- Improves knowledge base to inform policy making;
- Promotes integrated and cost-effective actions to reduce pressures;
- Implements effective monitoring and assessment to make sure goals are achieved and actions deliver results.

Considering the above highlights as well as the additional ones identified in the Legislation and Policy Annexes the Objectives as far as Water (inland or marine) is concerned are summarized as follows:

Objectives considered in the Assessment
Sustainable water management
Decrease of waste loads ending up in surface or ground water
Water status improvement
Reduction of bathing water pollution
Good environmental status of Marine Waters
Deriving Questions:
Will the realization of the OP promote water status improvement
Will the realization of the OP promote marine waters good environmental status

4.4 Soil

Protecting soil from pollution and erosion is one of the objectives of the **6th EAP** and the **Thematic Strategy for Soil Protection**. The last consists of a Communication from the EC to the other European Institutions, a proposal for a framework Directive, and an Impact Assessment (COM 2006 231). Protecting soil in its role in storing CO_2 is also worth mentioning.

The **EU Waste Policy** and the **Landfill Directive** aims at reducing the overall negative environmental impact of resource use. Preventing waste generation and promoting recycling and recovery of waste will reduce negative environmental impacts. A long-term EU goal (**Thematic Strategy on Waste and Recycling**) is to become a recycling society, avoid waste and use waste as a resource (COM 2005 666).

The **UN Convention to Combat Desertification** (UNCCD) aims at the preservation of soil attributes through the preparation of national, sub-regional or regional action programs for its implementation.

The overall objective of the **Thematic Strategy on the Sustainable Use of Natural Resources** is to reduce the negative environmental impacts generated by the use of natural resources (COM 2005 670).

Considering the above highlights as well as the additional ones identified in the Legislation and Policy Annexes the Objectives, as far as Soil is concerned, are summarized as follows:

Objectives considered in the Assessment
Rehabilitation of contaminated sites
Recycling of Waste and avoidance of Waste Dumping - Applying life-cycle thinking to managing biodegradable and other waste
Protecting Soil in its role of storing CO_2
Preservation of Soil attributes
Reductions of impacts to soil through the sustainable use of natural resources
Deriving Questions:
Will the realization of the OP contribute in waste minimization, sustainable waste management and the reduction of contaminated sites
Will the realization of the OP contribute to the preservation of soil attributes and the reduction of impacts by the use of natural resources

4.5 Population and Human Health

The **Environment and Health Action Plan 2004-2010 Is an EU initiative** to improve understanding of health impacts from environmental pollution**.** Respiratory diseases, cancer, neuro-developmental disorders and endocrine disrupting effects are identified as priority areas **i**n which European research activities shall be strengthened. (COM 2004).

The Thematic Strategy on Sustainable Use of Pesticides outlines, among others, the need:

- to minimize the hazards and risks to health and environment from the use of pesticides;
- to reduce the levels of harmful active substances, in particular by replacing the most dangerous by safer (including non-chemical) alternatives;

A major target of the **6th EAP** is to reduce the quantity of people exposed to permanent noise, caused especially by public and individual traffic (EP 2002). The reduction of harmful impacts on human health caused by noise is also the aim of the **Environmental Noise Directive** (2002/49/EC). Action plans to reduce noise are foreseen.

The EC **proposed directive on the Assessment and Management of floods** must also be mentioned. Its aim is to reduce and manage the risks that floods, posing a threat to human health COM 2006 15).

Objectives considered in the Assessment
Reduction of diseases caused by environmental factors and natural hazards
Reduction of flood risks
Reduction of population exposed to noise
Deriving Question:
Will the realization of the OP contribute to the control of environmental related health risks and hazards
Will the realization of the OP reduce flood risks
Will the realization of the OP contribute the reduction of the population exposed to noise

4.6 Cultural Heritage and Landscape

The **European Landscape Convention** (ECL) aims to promote European landscape protection, management and planning, and to organize European cooperation on landscape issues.

The limitation of rural to urban land conversion is one of the aims of the **6th EAP.** The **Thematic Strategy on Urban Environment** (COM 2005 718) supports and encourages local authorities to adopt a more integrated approach to urban management that will contribute to improve the quality of the urban environment, making cities more attractive and healthier places to live, work and invest in, and reduce the adverse environmental impact of cities on the wider environment.

Other relevant thematic documents are:

- the **European Union Strategy for Sustainable Development** (COM 2001 264) and
- the **Review of the EU Sustainable Development Strategy** (COUNCIL 10117/06).

The **World Heritage Convention** is also worth mentioning with several sites, within the MED area, nominated in the World Heritage List (UNESCO 1972). Other relevant conventions of the UNESCO for the protection of cultural heritage are:

- the **Convention on the Protection and Promotion of the Diversity of Cultural Expressions** (2005),

- the **Convention for the Safeguarding of the Intangible Cultural Heritage** (2003),
- the **Universal Declaration on Cultural Diversity** (2001).

Objectives considered in the Assessment
Limitation of rural to urban land conversion
Integrated approach to Urban Management
Protection of cultural heritage
Deriving Question:
Will the realization of the OP limit the demand on urban land for urban development?
Will the realization of the OP contribute to the protection of natural heritage?

5. Current state of the environment and trends in the MED program area

This part of the assessment aims to:

- present information on the state and trends of the environment and natural resources relevant to the programming document;
- outline the likely evolution of these trends without implementation of the programming document;

Because of its geographical configuration (peninsulas, islands, mountains, large coastal conurbations, peripheral areas) and its human and economic activities, the Mediterranean area is subject to high environmental pressures.

With regards to resources, Mediterranean sea, water and biodiversity, landscape and cultural heritage are directly threatened by the intensity of human activity and by pollution (domestic activities, industries, agriculture, tourism).

The Mediterranean space concentrates most of the major risks: fire, floods, draughts and reduction of water resources, seism, tsunami, and landslides. Those risks represent a danger for the population, for economic activities, for the environment and for cultural resources of territories.

Industrial and maritime risks in a fragile area, which will go on developing its activities, constitute a major concern as well.

In the following paragraphs an outline of the environmental state for the MED countries is given, using as a source the recent publication of the European Environmental Agency: “The European Environment – State and Outlook 2005”.

5.1 Air and Climate

Climate change is inevitable. Green House Gas emissions have grown overall since 2000. Many cost-effective strategies for improving energy efficiency remain heavily underused. The share of renewable electricity remains low in the MED region. While our air is generally cleaner, the trends are not good enough to meet air quality targets for 2010

The UN Intergovernmental Panel on Climate Change (IPCC), a global organisation of scientists, was set up by the World Meteorological Organization and the United Nations Environment Programme in 1988 to review the evidence. It concluded in 2001 that, while many of the fluctuations in temperature until the mid-20th century could be due to natural events such as volcanic eruptions and variations in solar activity, 'there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities, in particular to the emission of greenhouse gases'.

Growing water shortages and excessive temperatures in southern Europe are starting to shut off this trend, and climate models suggest that much of the continent may start to 'yellow' in future, as deserts advance. Higher temperatures and more intense droughts are producing a rising trend in the number and severity of forest fires in the Mediterranean.

Within Europe, temperature rise is expected to be marginally greater in Greece, Italy and Spain. During the 1999s southern Europe was 20 % drier.

People will try to adapt to these changes. In the droughts and higher temperatures in southern Europe, there will probably be lower yields and abandonment of farmland. High temperatures will mean that the effective period when some plants grow may actually shorten. Farmers will need more irrigation water (and to use it more efficiently) to survive in southern Europe. The expected decline in rainfall will often leave rivers running dry, and the impact of fewer water resources could be even more damaging for farmers than higher temperatures. Meanwhile, crops may be at greater risk from pests and diseases, including invaders against which the plants have no defense.

Adaptation will not only be necessary for agricultural activities. As climate zones shift, the flora and fauna associated with them will show different distribution trends as well.

Rising sea temperatures are also having direct effects on Europe's coastal ecosystems. Warming has so far been greatest in isolated basins like the western Mediterranean. Blooms of phytoplankton grow in the warmer waters, especially when fertilised by flows of nutrients from the land.

In 1992, at the Earth Summit in Rio de Janeiro, Brazil, most of the world's governments signed the UN Framework Convention on Climate Change (UNFCCC). It set as its long-term objective 'the stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

The first legally binding outcome of this declaration was the agreement in 1997 of a supplement to the climate convention, called the Kyoto Protocol.

The commitment of industrialised countries, as a whole, in the Kyoto Protocol was to reduce their emissions of a basket of six greenhouse gases to 5.2 % below their levels in a given base year (1990 in most cases) by the period 2008–2012. Since not all those countries have ratified the protocol, the total reduction target of those that did ratify is about 2.8 % below their 1990 emissions. Since 1990, reductions in emissions have been mostly from waste (largely methane) and industrial processes. There have also been more modest reductions in the energy sector and in agriculture, but emissions from transport have increased by more than a fifth. Within the transport sector, emissions from aviation and shipping rose the most.

CO2 emissions within the MED area have risen since 1990 (with the exception of Slovenia) and are expected to continue to rise.

EEA studies conclude that the key to switching from that trajectory to a low-emissions development pathway will ultimately lie primarily in reducing energy consumption and improving energy efficiency, and changing the way Europe generates and uses energy for all purposes, including transport.

Many cost-effective strategies for improving energy efficiency remain heavily underused.

Passenger cars, in addition to freight transport, have been the largest element of rising consumer demand.

Of renewable sources of electricity generation, wind and biomass are the most promising. At least until 2030, solar and geothermal power will make only modest contributions to energy production. Currently in the MED region countries like Slovenia and Portugal exhibit renewable energy percentages over 20%.

Significant cuts in greenhouse gas emissions can be achieved by tackling gases other than CO_2. Several of these gases have large projected emissions increases under the baseline scenario, and the first target would be to moderate those increases. Up to 2030, it may be cost effective to achieve about a quarter of the overall reductions in greenhouse gas emissions in this way. Methane is the most important man-made greenhouse gas after CO2. Methane is produced in large quantities as organic waste biodegrades.

Nitrous oxide is another significant greenhouse gas with a variety of sources. Fluorinated gases such as the hydrofluorocarbons (HFCs), which are used in refrigeration and air conditioning, currently amount to about 1 % of overall EU greenhouse gas emissions.

Figure 3.9 **Share of renewable electricity in gross electricity consumption in the EU-25 in 2002**

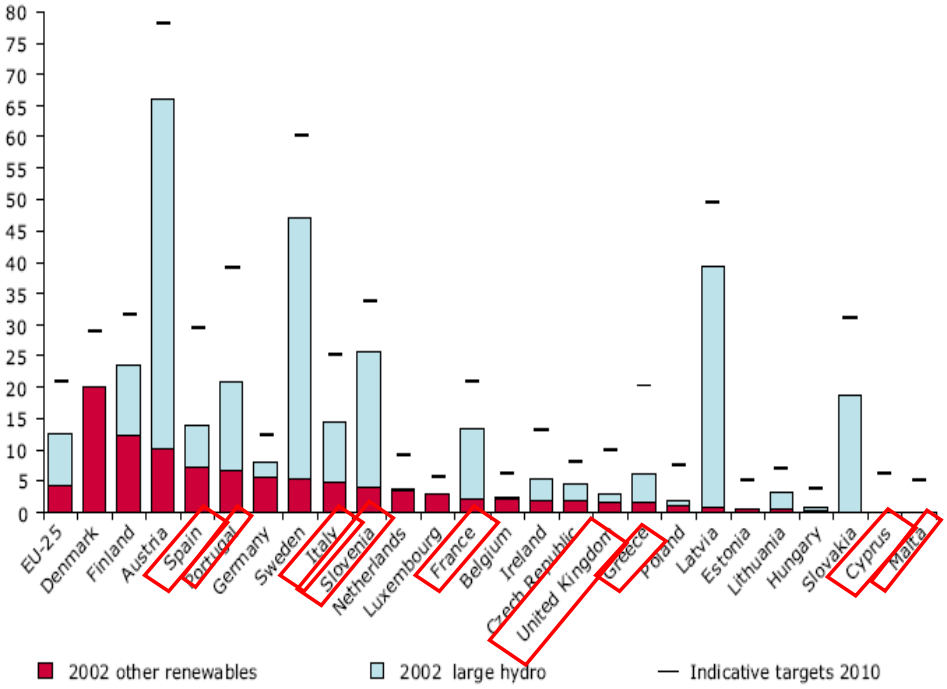


Figure 5.1 Share of renewable electricity in gross electricity consumption

The Kyoto Protocol also includes provisions for limiting the impacts of climate change. Considerable climate change is now inevitable because of time lags, partly in climate systems and partly in economic, political and technological systems. Considerable adaptation will be necessary to cope with changing climate zones, with the growing risk of extreme events and with the continuing rise in sea levels. The EU Environment Council has recognised the challenge and the need for actions to adapt both in developed and developing countries.

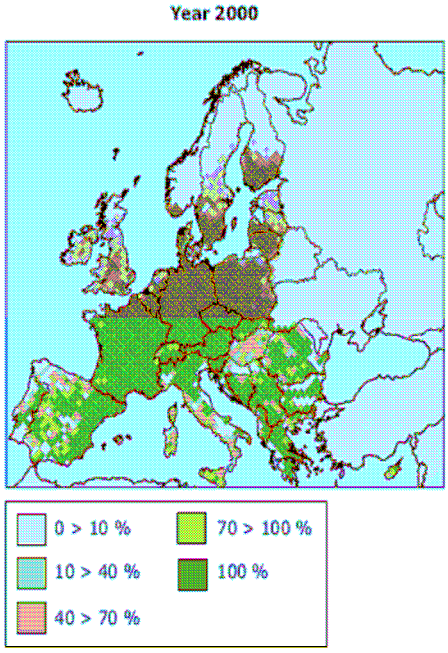
Burning fossil fuels remains the number one source of greenhouse gas emissions, and neither renewable energy nor nuclear energy is being developed fast enough to replace fossil fuels. In addition, increasing transport demands (road, aviation and shipping) now pose a serious threat. While emissions fell during the 1990s, they have grown overall since 2000. Air travel shows similar trends to other transport modes in terms of rising contributions to emissions, but to an exaggerated degree. Emissions have risen accordingly.

Longer-term EU targets for emissions (2020) and temperature reductions (2050) are not expected to be met. However, there is potential for a massive reduction (up to 40 % by 2020) in EU greenhouse gas emissions. This is technically feasible but requires amajor shift in the EU energy system towards alternative energy sources (including nuclear) and unprecedented efficiency improvements through the increased uptake of environment-friendly technologies, especially by households.

Climate change is inevitable and even if the correct measures are taken today, there will still be a time lag of two to three decades.

Reducing acid rain has been a major success story for collaborative European environment policy. Acid rain is caused by fallout from emissions of sulphur dioxide, nitrogen oxides and ammonia. If

maximum feasible reductions in emissions are attained, then fallout could be brought below critical loads and thus protecting forests and soil from further deterioration.



Map 5-1: % of ecosystems receiving nitrogen deposition above the critical loads

As it is evident from Map 5.1 the percentage of total ecosystems area receiving nitrogen deposition above the critical loads is in the area of 100% for most part of Greece, Spain and France. The burden on ecosystems is less for Italy, Portugal and the other MED countries.

Particulate pollution continues to take a heavy toll on Europe's health, and represents the biggest air pollution killer in Europe today being responsible for 348 000 premature deaths in year 2000. Clean-up measures have substantially reduced particulate emissions since 1990 in some MED countries. However Greece and Portugal are showing an increase in emission. Further cuts should follow, particularly with the introduction of filters in diesel cars. Nevertheless, it remains likely that, for some decades to come, many urban areas will continue to have unsafe concentrations of particulates resulting from road transport but also from other sources such as small combustion

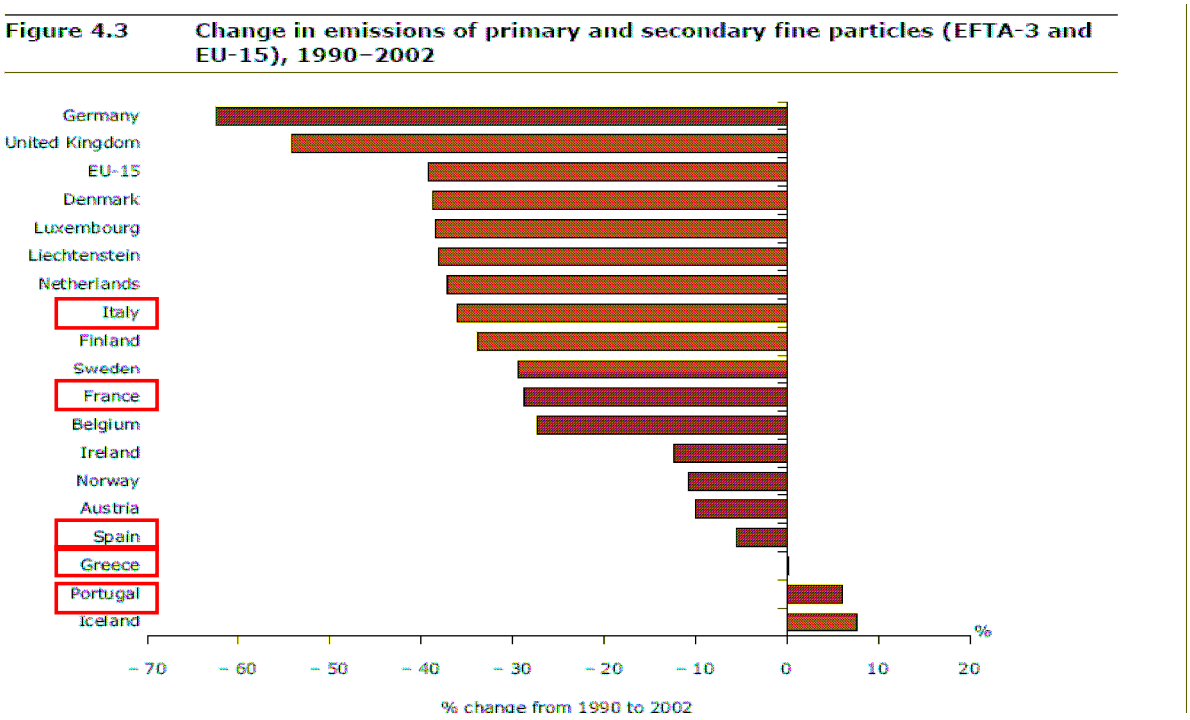


Figure 5.2 Change in emissions of primary and secondary fine particles

Transport is the major cause of the most intractable air pollution problems Europe faces today. The dramatic improvements made by technologies such as catalytic converters in cars are being overwhelmed by increases in demand. Without such converters, however, some emissions would be 10 times the level they are now.

While our air is generally cleaner, the trends are not good enough to meet air quality targets for 2010. End of- pipe technological innovation is not enough. Current social trends, ranging from growing suburbanisation and the declining availability and rising cost of public transport and growing demand for imported consumer goods increasing the volume of shipping in EU seas, emphasise the many dimensions of action required.

5.2 Biodiversity, Flora and Fauna

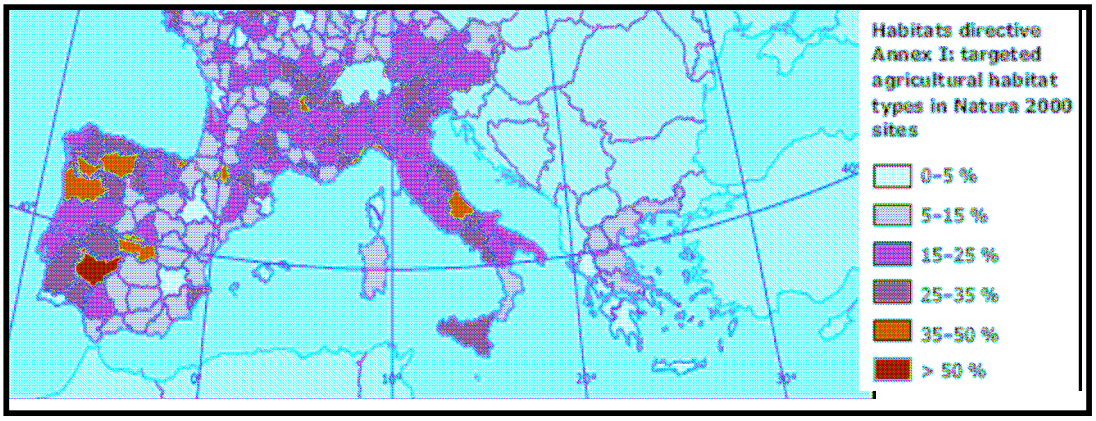
The Mediterranean basin has been identified as one of the world's 34 biodiversity hot spots. The coastal zones and islands of the Mediterranean, which are especially rich in species diversity, are under particular pressure. The Mediterranean region as a whole, is likely to face more droughts and fires, land degradation due to desertification and spreading salinity in newly irrigated areas, and loss of wetlands. Much of the region's biodiversity is already close to its climatic limit.

'Biological diversity' is defined by the United Nations Convention on Biological Diversity as the variability among living organisms from all sources including, among others, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems

The highest number of plant and animal species in Europe is hosted in the Mediterranean basin, which has been identified by Conservation International as one of the world's 34 biodiversity hot spots. Particularly rich are the mountains southern Greece, as well as 5000 or so Mediterranean islands. These last include the Greek island of Crete, and Cyprus where the Troodos Mountains are particularly rich, with 62 unique species of plants.

The most habitat-relevant changes in land during the 1990s were the increases in artificial habitats (5 %) and in inland surface water (some 2.5 %), due to the creation of dams. Many of the wetlands have been lost to coastal development, mountain reservoirs and river engineering works. These changes have in some cases caused dramatic changes in landscape character and biodiversity richness.

Europe's biodiversity has been shaped by agriculture since the last glaciations. In the MED region, one can see that this is mostly the case for Italy, Portugal and France.



Map 5.2: Agricultural Habitats

Coastal areas are being subject to especially intense development, partly as a result of mass tourism. The coastal zones and islands of the Mediterranean, which are especially rich in species diversity, are under particular pressure. Urban sprawl is growing in all countries but most intensively, northern Italy and Portugal.

It has been estimated that 50 % of all species in Europe depend on agricultural habitats. Consequently, some of the most critical conservation issues today relate to changes from traditional to modern farming practices on habitats such as hay meadows, lowland wet grasslands, heathlands, chalk and dry grasslands, blanket bogs, moorlands and arable land.

There are two key trends leading to the loss and fragmentation of semi-natural habitats in agriculture:

- One is the intensification of agriculture.
- The other is the abandonment of farmland.

Tourist resorts take over around the Mediterranean coast and islands. Often, however, the land is simply abandoned.

Data for some of the MED countries that a significant percent of livestock breeds have been categorised as extinct, or of endangered or critical status (Figure 5.3).

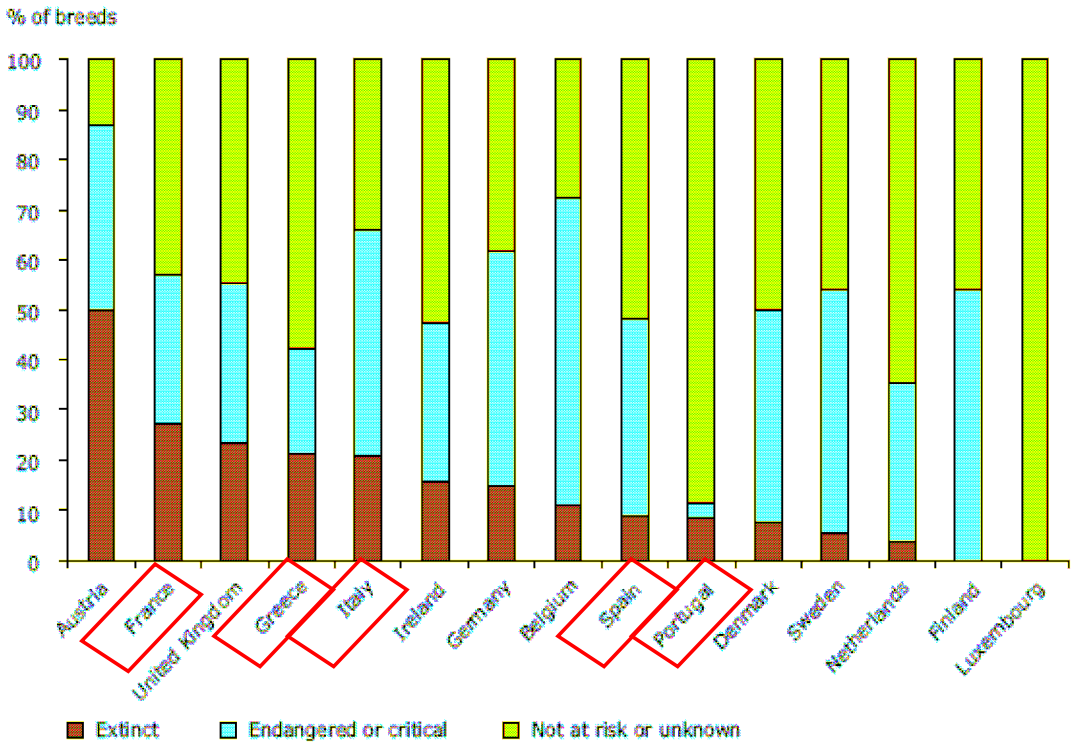
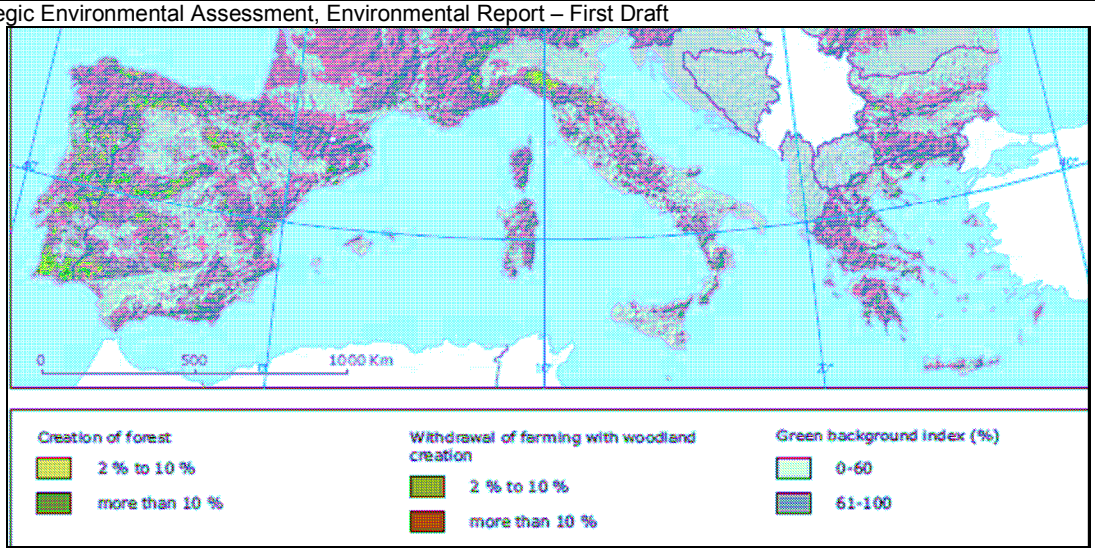


Figure 5.3 Distribution of endangered risk status of livestock breed

Afforestation has been highest in the Mediterranean countries, in particular Spain, France, Portugal, Greece and Italy.



Map 5.3: Afforestation

Forest fires, especially in the Mediterranean region, pose a threat to the productive potential of forests and to surrounding land. At the same time, they are also a natural feature of most forests and a vital part of their dynamics, creating clearings and new habitats. On the other hand, many fires are far from natural, since they are caused by people

Many rivers in the MED region have been subject to extensive damming for hydroelectric power, channelisation to facilitate transport and drainage of riparian habitats to provide agricultural land. Such modifications have led to widespread losses of aquatic habitats and biodiversity, with thousands of small lakes, ponds and streams lost entirely to drainage for agricultural land. Today, very few unregulated waters remain.

Among the most biologically productive freshwater areas are wetlands, including lagoons, estuaries, riparian forests, grazed wet meadows and farm ponds.

Mountain environments are among the most valuable natural areas, rich in biodiversity. Despite the increasing pressure, some successful measures have been taken to bolster biodiversity. There has been widespread designation of mountain areas for Natura 2000 protection. As an example, in the past 40 years, regulation of hunting has led to anincrease in numbers from a few thousand to 50 000 individuals in the Pyrenees, the Cantabrian Mountains and the Apennines.

Large uncertainties remain about the capacity of ecosystems to resist, accommodate or even sometimes benefit from climate change. Nevertheless, there is a strong probability that climate change will become the dominant force in changes to biodiversity, overwhelming the forces of habitat destruction, pollution and overharvesting, whether for good or ill. Coastal zones will suffer complex changes as rising sea waters invade freshwater ecosystems, storms become more intense, water quality changes in the warm. Some of the results of a study, following earlier Euromove surveys, of projected changes in the late 21st century distribution of plant species under seven climate change scenarios, are worth mentioning:

Different regions are expected to respond differently to climate change, with the greatest vulnerability in mountain regions (approximately 60 % species loss, including many endemic species) and the least in the southern Mediterranean and Pannonian regions.

The greatest changes, with both loss of species and a large turnover of species, are expected in the transition between the Mediterranean and Euro-Siberian region

Wetlands, already under grave threat from development, will suffer further damage from climate change. The Mediterranean Sea is virtually tideless and thus has no coping strategies for sea inundation. Several predictions put the likely loss of coastal wetland habitat, under a 2–3 °C warming, at greater than 50 %. Several large river deltas in the Mediterranean, such as those of the Ebro and Po rivers and the lagoons within them, are thought to be particularly at risk.

The Mediterranean region as a whole, while prone to coastal changes, is also likely to face more droughts and fires, land degradation due to desertification and spreading salinity in newly irrigated areas, and loss of wetlands. Several studies have concluded that the Mediterranean is probably the part of Europe most vulnerable to climate change. Much of the region's biodiversity is already close to its climatic limit, and particularly vulnerable to the droughts that climate models suggest will become ever more frequent. Even small changes in temperatures and rainfall could have severe consequences for some tree species most typical of the Mediterranean landscape. In practice, increased fire risk may become the most serious threat. Fire is already the crucial survival determinant for a number of tree and shrub species in the region as, each year, an area the size of Corsica is scorched.

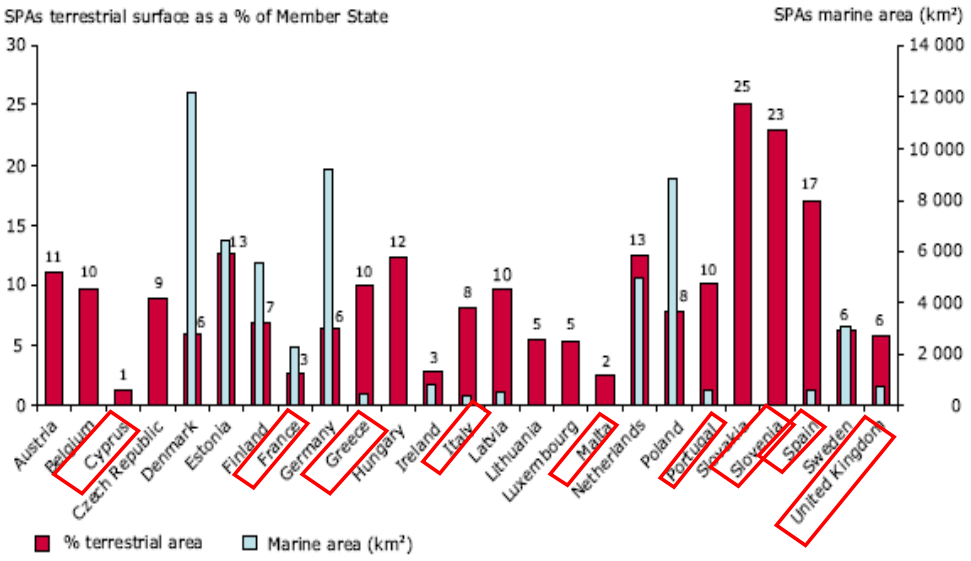


Figure 5.4 SPA marine areas

Marine Ecosystems

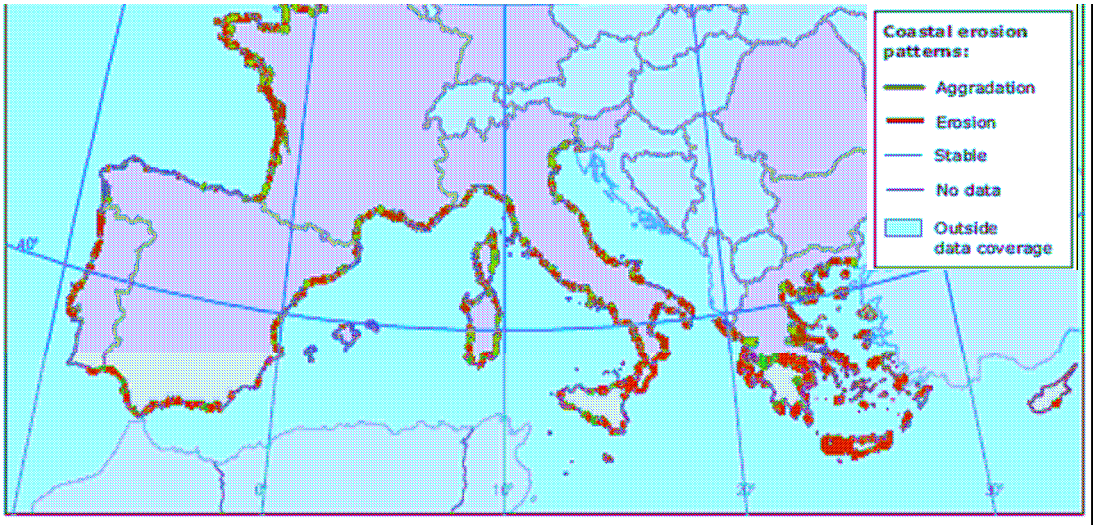
During long periods of summer calm, when the sea becomes stratified and surface water temperatures soar, toxic algal blooms are formed in the Mediterranean. In the Adriatic in particular, pollution has damaged fisheries.

Fish catches in the Mediterranean have been fairly stable at around 1 million tonnes for a decade and more, though catches per boat have declined significantly, demonstrating that stocks are under stress. Efforts to maintain catches with high-intensity fishing equipment such as drift nets and long-lines have caused serious problems with by-catches of marine animals such as dolphins and endangered species of turtles. Worsening nutrient pollution in the Mediterranean is apparently causing deterioration in the sea grass beds that once fringed almost the entire sea.

Another major threat to turtles and other marine wildlife is tourism and development activities on nesting beaches. The Mediterranean sea and its shores are the biggest tourist destination on Earth. Human activity and invasions of alien species have also damaged coastal ecosystems on which fisheries depend.

A form of algae native to the Red Sea, *Caulerpa taxifolia*, has spread round the Mediterranean from the French Riviera, where it first emerged in the 1980s, obliterating sea grasses and replacing them with largely sterile algal beds.

Another critical pressure arising from the build-up of socio-economic activities in the coastal zone is the extraction of near-shore sand and gravel for construction purposes, leading in turn to accelerated erosion of the Med coastline (see Map 5.4)



Map 5.4 Coastal Erosion Patterns

The challenges facing the Mediterranean ecosystem are associated with coastal erosion, eutrophication hot spots and toxic algal blooms, low nutrient levels leading to low productivity in the south-east, fisheries by-catches of marine wildlife and invasion of alien species.

5.3 Water

Control of point sources of pollution is showing some good results, while diffuse sources will continue to be a challenge for environmental management. The quality of river water is showing a degrading trend. Water availability and providing drinking water in sufficient quality and quantity, considering the influence of climatic change will be a challenge.
Key pressures, drivers and impacts affecting the Mediterranean marine environment derive from a variety of land and marine-based activities and the two key global processes of climate change and ocean dynamics.

Since 2000 the water framework directive (WFD) has been in place as the main European legislation to protect our water resources. With its two main principles focusing on the 'good status' of all water bodies, and assessing them in relation to activities in the river basin, the WFD follows an integrated approach to water resource management (2005).

Water quality in general is most severely affected by organic and inorganic pollutants (pesticides, heavy metals etc.) from households, industry and agriculture. In the last two decades, the main focus has been on point sources of water pollution, such as households and factories, with good results.

As point sources impact on water quality decline, diffuse sources, particularly from agriculture, will dominate in future

The quality of river water across the programme area shows degrading general trend

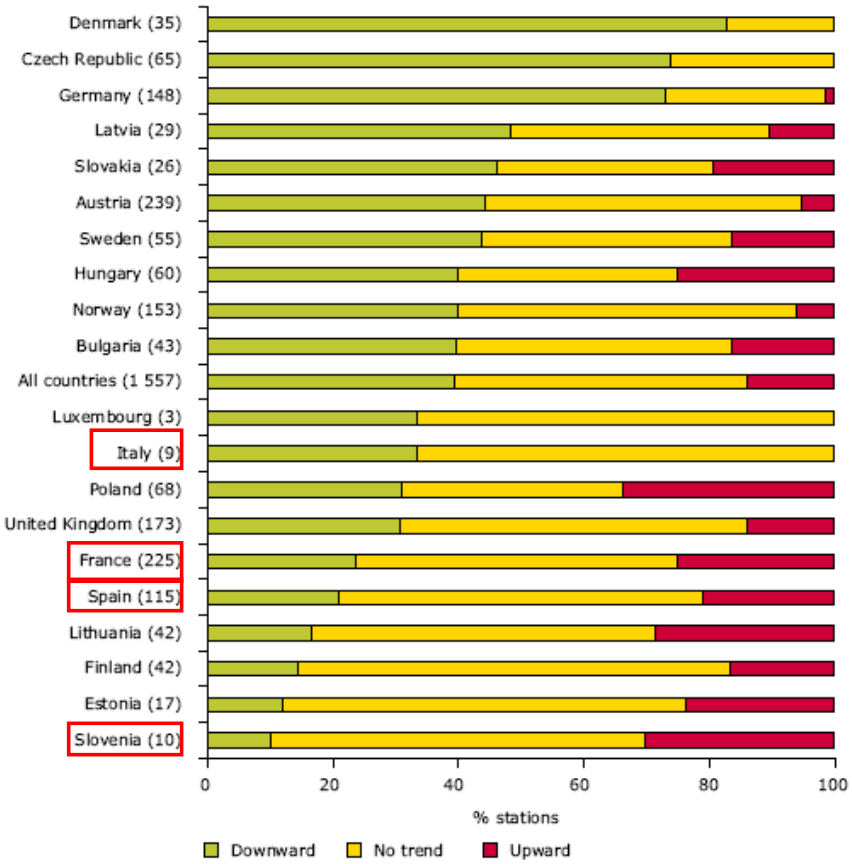


Figure 5.4 Trends in Nitrate Concentrations

MED countries meet their freshwater needs from surface water such as rivers, lakes and reservoirs, and from groundwater. There is growing use of desalinated seawater, notably on Mediterranean islands where there is heavy seasonal water demand from tourists. Furthermore, several countries, including Spain, plan to greatly increase their desalination capacity as an alternative to bulk transfer of water between river basins. Regional demand and regional availability often do not match. Precipitation is around 500 millimetres a year in much of eastern Europe and around 250 millimetres in southern and central Spain. In hotter areas water never reaches water bodies where it can be tapped for human use, particularly. Annual potential evaporation around the Mediterranean reaches nearly 2 000 millimetres a year, eight times the rainfall. Evaporation is also a major drain on water storage in reservoirs in the region (2005).

Annual freshwater availability per head varies from less than 1000 cubic meters in Cyprus and Malta, through around 8000 cubic meters in Slovenia. Countries where withdrawals are greater than 20 % of total available supplies are generally regarded as water stressed. Four countries — Cyprus, Italy, Malta and Spain — already fall in that category. Others are likely to join them as climate change is expected to influence both the supply and demand for water

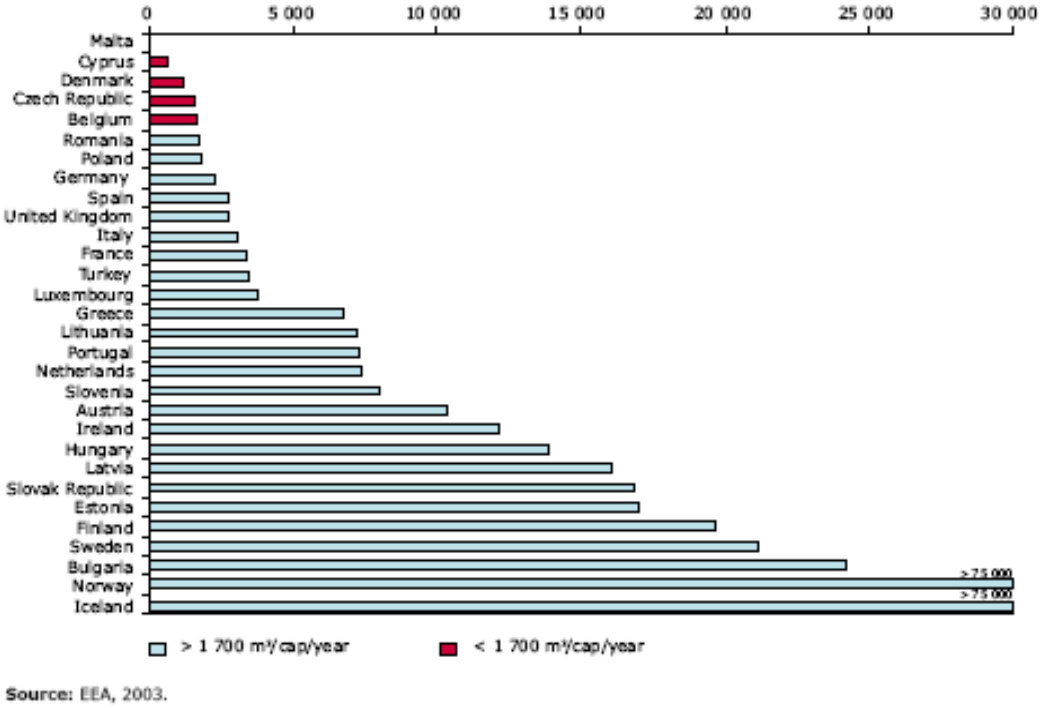
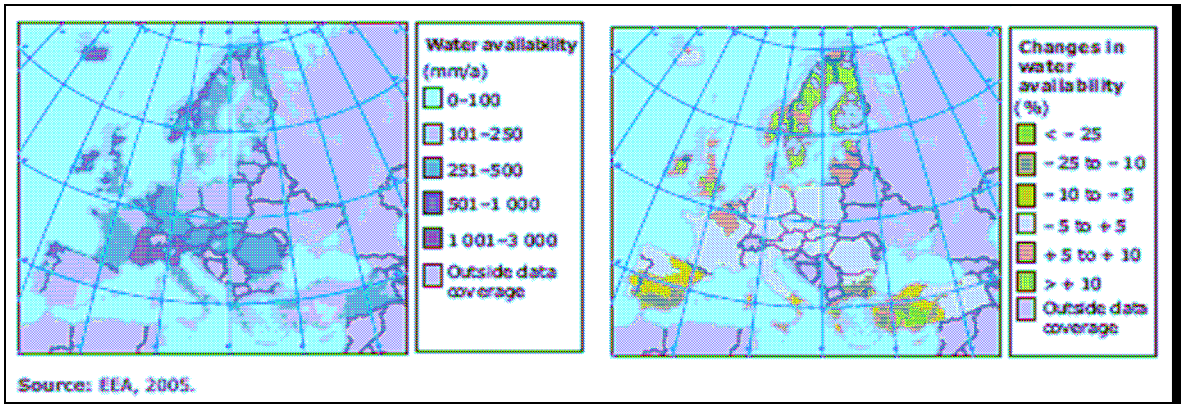


Figure 5.5 Annual Water Availability

Irrigation, in southern Europe, in countries such as Cyprus, Greece and Malta and parts of Italy, Portugal and Spain, irrigation accounts for more than 60 % of water use.

Higher temperatures are likely to have an even bigger impact on water demand in southern Europe, where the need for irrigation of crops will undoubtedly increase. Baseline assumptions foresee a 20 % increase in the area of southern Europe under irrigation by 2030. In many places, there is simply not the water to meet this demand, so there will be strong pressure for significant improvements in the efficiency of irrigation systems (Map 5.5).



Map 5.5 Water Availability Scenarios

As it is evident Cyprus, Malta, Southern Italy, Spain and Portugal will be significantly influenced.

Total fresh water abstractions increased in some countries in the MED region. However population in the programming area lives in water stressed countries, which means a water exploitation index significantly above 20 %, particularly during droughts or periods of low river flow (see figure 5.6).

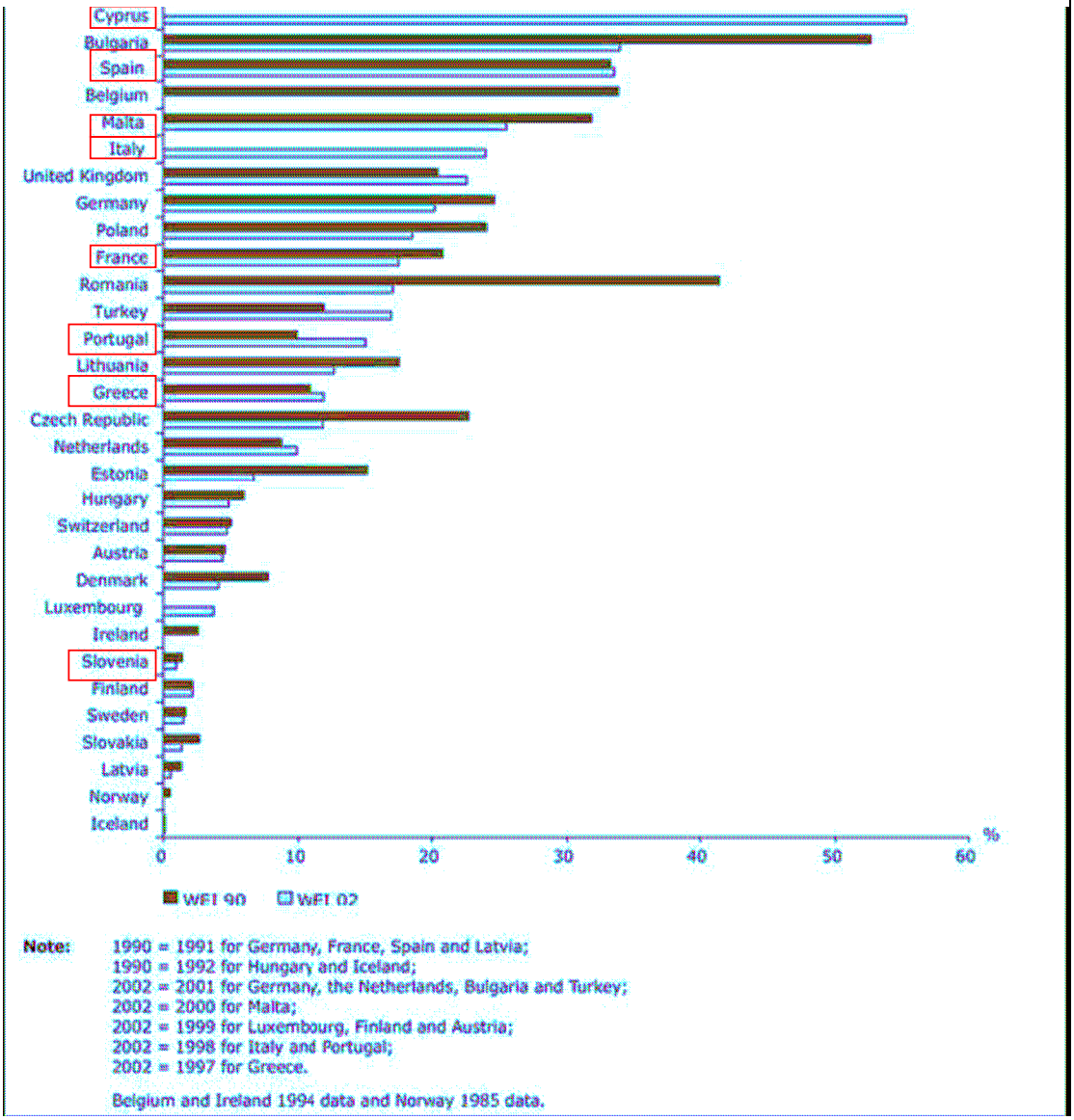
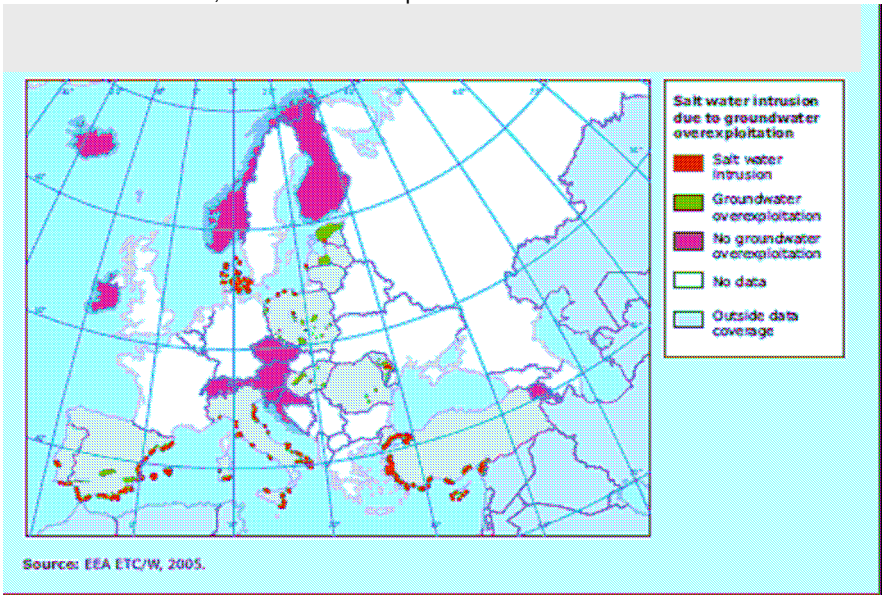


Figure 5.6 Water Exploitation Index

In general, southern Europe is likely to become more drought prone as the extra energy in the climate system increases the probability of extremes and pressures from agriculture, urbanisation, and tourism will lead to increased water consumption.

Saline intrusion, due to groundwater overexploitation, is widespread along the Mediterranean coastlines of Italy, Spain and Greece, where the demands of tourist resorts are the major cause of over-abstraction. In Malta, most groundwater can no longer be used for domestic consumption or irrigation because of saline intrusion, and the country has resorted to desalination.



Map 5.6 Salt Water intrusion

Marine waters

Despite covering more than 2.5 million square kilometres, is largely landlocked. It has a narrow upstream connection through the Bosporus to the Black Sea and almost as narrow an outflow into the Atlantic Ocean through the Straits of Gibraltar. Well-oxygenated Atlantic water flows in at the surface and flows out at depth.

The Mediterranean is a dynamic sea with wind-driven currents; big seasonal fluctuations in sea temperatures and significant local areas of upwelling that bring nutrients to the surface, especially in the Adriatic.

It also has strong sources of man-made nutrients and other pollutants delivered down rivers such as the Rhône, Po, and Ebro, as well as directly from the numerous large settlements and from the fallout of air pollution over the sea. The combination of nutrient pollution from the Po and local upwelling causes serious eutrophication problems in the north Adriatic in some summers.

There are other hot spots where nutrients accumulate and cause eutrophication, mostly in estuaries and around coastal population centres. There are long-standing eutrophication hot spots in the Mediterranean, for instance in the Venice area at the head of the Adriatic Sea, and the Gulf of Lion.

The coastal Mediterranean region, in particular, is now one of the most densely populated regions on Earth, with more than 13 million people from the EU living near the coast. Permanent populations exceed 1 000 people per square kilometre along the French and Italian Riviera.

Rivers are also important transporters of nutrients and suspended solids since they drain basins with agricultural activities (fertilisers) and urban centres. It has been estimated that 605 000 tonnes of N-NO3 and 14 000 tonnes of P-PO4 are entering annually (1995) into the Mediterranean Sea from the rivers Po, Rhône and Ebro (UNEP/MAP, 2003a). The average nutrient concentrations in various Mediterranean rivers are shown in Table 5.1.

Table 5.1 Average nutrient concentrations in various Mediterranean rivers, sampling periods are not identical (1985–1996)

River	Country	N-NO_3 mg/l	N-NH_4mg/l	P-PO mg/l	Total P mg/l
Adige	Italy	1.248	0.111	0.033	0.113
Acheloos	Greece	0.350	0.020	0.020	
Aliakmon	Greece	2.350	0.110	0.140	
Argens	France	0.740	0.090	0.110	0.220
Arno	Italy	3.620	1.347	0.406	
Aude	France	1.420	0.090	0.090	0.490
Axios	Greece	2.590	0.150	0.880	
Besos	Spain	1.900	31.000	12.700	
Buyuk	Menderes	Turkey	1.440	0.550	
Ceyhan	Turkey	8.680			
Ebro	Spain	2.323	0.167	0.115	0.243
Evros/Meric	Greece/Turkey	1.900	0.050	0.280	
Gediz	Turkey	1.650	0.050	0.190	
Goksu	Turkey	8.870			
Herault	France	0.610	0.060	0.045	0.220
Kishon	Israel	20.000			
Krka	Croatia	0.526	0.093	0.046	
Llobregat	Spain	1.900	3.200	1.200	1.530
Neretva	Croatia	0.269	0.029	0.050	
Nestos	Greece	0.780	0.040	0.120	
Nile	Egypt	3.000			
Orb	France	0.670	0.440	0.140	0.450
Pinios	Greece	1.890	0.090	0.140	
Po	Italy	2.192	0.261	0.084	0.239
Rhône	France	1.320	0.091	0.044	0.124
Seyhan	Turkey	0.590	0.310	0.010	
Strymon	Greece	1.100	0.030	0.110	
Tet	France	1.800	1.500	0.470	0.800
Tiber	Italy	1.370	1.038	0.260	0.355
Var	France	0.180	0.031	0.006	0.130

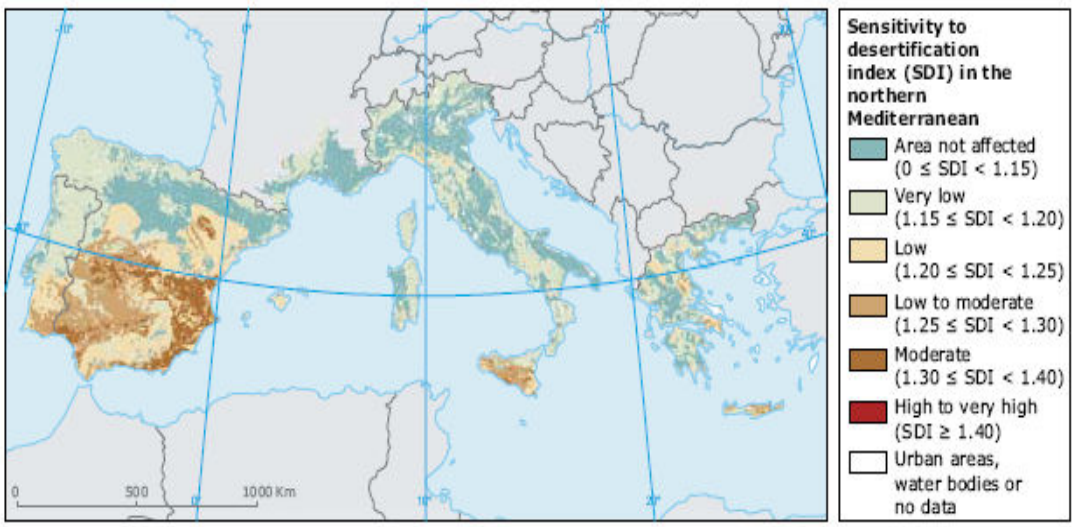
5.4 Soil

There are many threats to soil — erosion, sealing, contamination, salinisation. These have proven difficult to tackle up to now and are expected to continue to be a challenge in line with expected future developments in the MED area on urbanisation, intensive agriculture and industrialisation/deindustrialisation.

Erosion of topsoil is one of the most widespread threats to the continent's soils, but there is only sparse quantitative information on actual rates and the extent of soil erosion at the Mediterranean scale. Soil erosion in the Mediterranean is primarily caused by water.

Erosion is often seen as a process confined largely to the dry lands of southern Europe, where in extreme cases, in combination with other factors such as climate, the unsustainable use of water and a lack of vegetation, it can lead to 'desertification'. It is reminded that coastal erosion was assessed in paragraph 5.2

However, in the areas of the northern Mediterranean for which quantitative data are available, one-third of the territory, approximately 37 million hectares, currently shows a moderate or low sensitivity (Map 5.7). The affected areas increase to more than 70 million hectares if very low sensitivities are taken into account. Southern Portugal, southern Spain, Sicily, and parts of Greece are most seriously affected, where areas with moderate or low sensitivities range from approximately 65 % to more than 85 % of the region concerned.



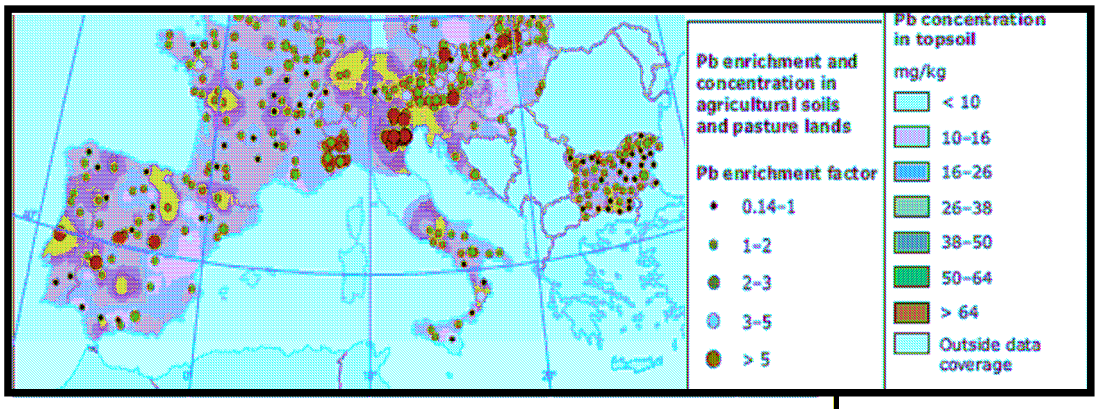
Map 5.7 Sensitivity to Desertification

Erosion right across the MED area is expected to worsen, partly as a result of climate change, which will intensify both droughts and rainstorms. The water erosion risk is expected to increase as a result of climate change in four-fifths of Europe's agricultural areas by 2050, with the deterioration generally greatest in places that already have serious erosion problems.

Soil contamination is widespread across Europe. It occurs both through localised sources of pollution, such as industrial sites, and through 'diffuse' pollution from atmospheric fallout such as acid rain, leaching of farm chemicals and even soil erosion which, as already mentioned, can liberate nutrients. However the largest concentrations of sites are estimated to be outside the MED region around the old industrialised heartlands of north-west Europe, from southern United Kingdom through northeast France, Belgium and the Netherlands to the Rhine- Ruhr region of Germany. Other places with serious hot spots include the Po valley around Milan in Italy..

Diffuse pollution of soils, although probably not as critically widespread as local contamination, presents an even larger problem of accountability and clean up. Acid deposition is not expected to reach critical loads in the southern region of Europe.

Soil contamination from aerial spraying of farm chemicals such as pesticides is a problem for the MED area as well. Heavy metals from industrial plants are sometimes applied to soils in sewage sludge taken from wastewater treatment works handling effluent from factories. The nutrients in this sludge can improve soil fertility in the short term where nutrients are in short supply, but the heavy metals may accumulate, potentially damaging long-term fertility (Map 5.8). Less than 5 % of EU farmland is currently treated with sewage sludge, and most sludge contains only tiny amounts of heavy metals. However, the requirements of EU legislation such as the urban waste water treatment directive and the landfill directive, which limit other disposal options for sewage sludge, may tend to increase their application to land. Currently the heavy metal content of sewage sludge tends to be higher in southern Europe (MED area).



Map 5.8 Soil Contamination by heavy metals

Soil sealing (by compacting and other relevant earthworks) is also a problem. Rates of urbanisation have been greatest in recent times around the Mediterranean coast, including France, Italy, Spain and the islands. Often this is linked to expansion of tourism. High rates of future urbanisation are also expected in Portugal.

Urbanisation and transport infrastructure are not the only causes of the sealing of soils. Others include reservoirs, which flood land, and even mechanised agriculture, which can so compact the soil surface that it becomes impermeable, effectively sealing off what lies beneath.

Salinisation of soils is another common diffuse contamination problem. Estimates of the extent and severity of salinisation are not easy to make due to the progressive nature of the process and the difficulty of detecting it in its early stages. However, as much as 16 million hectares or 25 % of irrigated cropland in the Mediterranean may be affected.

5.5 Population and Human Health

Several diseases are linked directly or indirectly to environmental issues. Especially air pollutants and noise are identified as important factors influencing human health. Extreme heat waves, .related to climatic change are also a factor

Ozone smogs are thought to hasten the deaths of 20 000 people in the EU each year. Emissions of the precursors of ozone have declined by a third since 1990 and most countries should meet EU emissions ceilings set to come into force in 2010. Unfortunately the complex chemical environment of urban smog means that, despite declining emissions of ozone precursors, annual ozone concentrations have increased slightly. It is evident that Southern Europe reports moste of the exceedaces in ozone concentration.

Lead is another pollutant most closely linked to damage to children. The largest source of exposure used to be lead in car exhausts, but Europe has been in the forefront of removing lead from petrol in the past 20 years. As a result, lead levels in the blood of most European children have fallen dramatically.

Persistent organic pollutants (POPs) such as polychlorinated biphenyls (PCBs), are produced during waste incineration and are known to be toxic. In Europe a great number of POPs have been banned for some years. They form part of a wider group of chemicals found in the environment known as endocrine disrupters. They disrupt the orderly release of hormones in the body. Endocrine disrupters have been linked to a reported 50 % decline in sperm counts in the last 60 years.

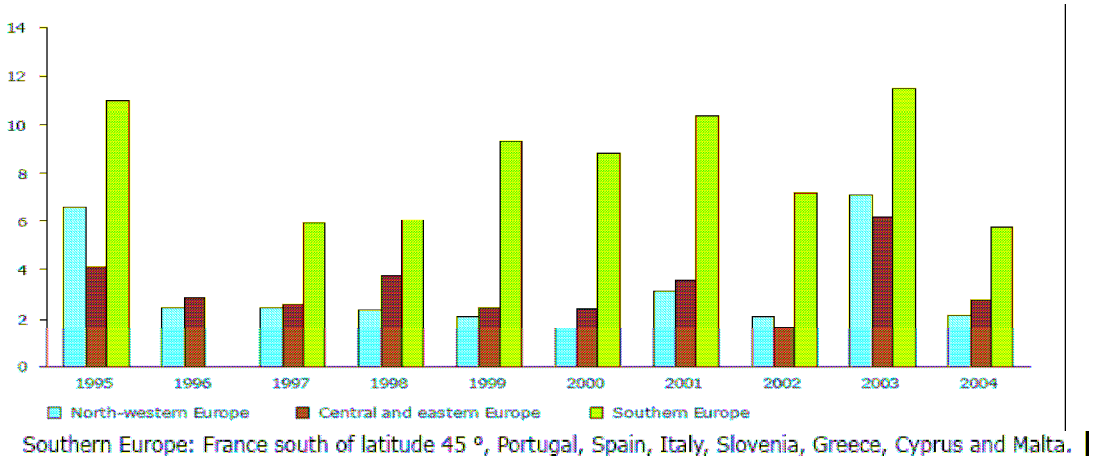


Figure 5.7 Average Occurrence in Ozone Exceedances for stations that reported at least one exceedance

Road traffic is the predominant source of human exposure to noise, except for people living near airports and railway lines. As a result over 120 million people in the EU are exposed to notably noise levels on the front facade of their houses and flats

High temperatures are a threat to human health. The 2003 heat wave saw 20 000 more people die in Europe than in the same period in other years, some 14 000 of them in France. Most people died from heat stroke, and heart and respiratory ailments, as daily maximum temperatures rose to 40 °C and, perhaps of equal importance, night-time minimum temperatures stayed above 25 °C on the warmest nights

5.6 Cultural Heritage and Landscape

Urban sprawl is a growing problem. Cultural heritage sites represent part of Mediterranean identity, the integration of these values into economic activities has already begun

Culture and particularly cultural heritage is the MED areas main asset. The Mediterranean is the region that gave the birth to western civilization. It hosts numerous cultural heritage sites, which are subjects of tourists' interest. The cultural industry is one of the fastest developing industries in the world, and the sustainable conservation of cultural sites could also contribute to the furthering of the cultural industry in the Mediterranean..

The Mediterranena regions possess some rather strong metropolitan and port cities (Athens-Pireus, Barcelona, Marseille) as well as some smaller urban port centres, that do possess a potential to position the Mediterranean stronger in the international competitive economy (Malta, Larnaca, for example). Additionally there exist a network of small and medium sized cities and rural regions. This is complemented by a net of dynamic urban agglomerations, that host modern services (Rhone-Alpes, Province-Alpes-Cote d'Azur, Athens, Barcelona). Such groups of cities can function a centres for future development.

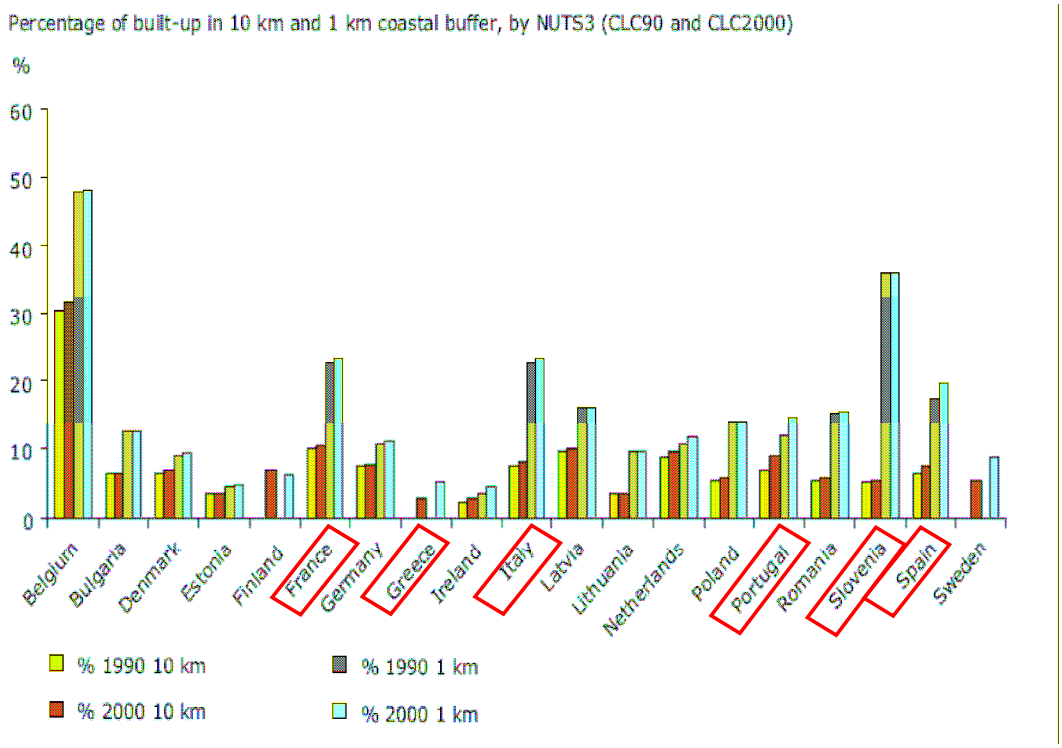


Figure 5.8 **Coastal Build up**

On the other hand, urban development is un-controlled particularly in the urban zones, leading to increased pressure on the coastal environment, but also on the citizens' daily lives as traffic congestion, pollution and lack of green space become ever more intense. The urban infrastructures and / or technologies are not at a satisfactory level, which leads to badly consolidated urban functions (fragmentation and dysfunctional urban services).

The coastal Mediterranean region, is now one of the most densely populated regions on Earth, with more than 13 million people from the EU living near the coast. Permanent populations exceed 1 000 people per square kilometre along the French and Italian Riviera. The significant urban built up for some Mediterranean Countries is indicatively given in figure 5.8

6. Integration of Environmental Objectives into the OP

6.1 Level one Assessment: Development objectives

According to the Handbook on SEA for Cohesion Policy 2007-2013[5] (the Handbook) the SEA must include as a first step the Assessment: Development objectives

An assessment of the relevance and the consistency of the Priority Axis and Objectives to the defined Environmental Issues (chapter 4) is given in table 6.1. by summarizing the Integration of the aforementioned Environmental Objectives in the Draft Operational Program

MED Program	**Relationship to Considered Environmental Objective**					
Priority Axis 1: Strengthening innovation capacities	**1**	**2**	**3**	**4**	**5**	**6**
Objective 1: Dissemination of innovative technologies and know-how	**O**	**O** **X**	**O** **X**	**X**	**O**	**X**
Objective 1.2 Strengthening of territorial economic cooperation						
Priority Axis2: Environmental protection and promotion of a sustainable territorial development						
Objective 2.1: Protection and enhancement of natural and cultural resources, risks prevention		**+**	**+**	**+**	**+**	**+**
Objective 2.2 Promotion of renewable energies and improvement of energy efficiency	**+**				**+**	
Objective 2.3 Prevention of maritime risks and strengthening of maritime safety	**O**	**O**	**O**		**+**	
Priority Axis 3 : Improve mobility and territorial accessibility						
Objective 3.1 Improvement of transport and transit capacities and promotion of multimodality	**O** **X**	**X**	**X**	**X**	**O** **X**	**X**
Objective 3.2 Support to the use of information technologies for a better accessibility and territorial cooperation	**O**				**O**	
Priority Axis 4 : Promotion of a polycentric and integrated development of the Med space						
Objective 4.1 To stimulate cooperation and improve territorial governance	**O**	**O**	**O**	**O**	**O**	**O**
Objective 4.2 Promotion of identity and enhancement of cultural resources for a better integration of Med space						**+**

Direct relationship: **+ (positive), – (negative)**

Indirect relationship: **O (positive), X (negative)**

[5] Greening Regional Development Programmes Network: "Handbook on SEA for Cohesion Policy 2007-2013" February 2006

6.2 Likely Significant Environmental Effects

According to the Handbook on SEA for Cohesion Policy 2007-2013[6] (the Handbook) the SEA must include the following two steps of the programme:

- Level two: Measures and eligible activities The Draft Operational Programme specifies possible actions. By considering them, the expected environmental effects will be estimated.
- Level three: Selection criteria for the proposed activities Specific selection criteria for proposed activities are now included in the Draft Operational Programme.

6.2.1 Measures and eligible activities

This step aims to:

- assess the positive and/or negative effects of specific proposals contained in the programming document on the relevant environmental objectives
- consider alternative options at the level possible actions;
- make suggestions to prevent, reduce and as fully as possible offset any significant adverse effects of implementing the programming document on the environment or sustainable development.

The impact character is assessed by use of the following:

- Probability: Very probable **(VP)**, Probable **(P)**
- Scale: Large-Scale Negative (**LSN**), Negative (**N**), Large-Scale Positive (**LSP**), Positive (**P**)
- Frequency/duration: Frequent to Constant (**FC**) / Long-Term to Permanent **(LTP)**, Occasional **(O)** / Short-Term **(ST)**
- Reversibility: Irreversible **(I)**, Reversible **(R)**
- Transboundary dimension: Possible Transboundary Effect (**PTE**)
- Uncertainty **(U)**: Possible impact totally depends on the implementation arrangements described in our accompanying comments.

[6] Greening Regional Development Programmes Network: "Handbook on SEA for Cohesion Policy 2007-2013" February 2006

Priority Axis1: Strengthening innovation capacities

Objective 1.1: Dissemination of innovative technologies and know-how

Assessment:

	P or VP	LSN, N, LSP or P	FC, LTP, O or ST	IR or REV	PTE	U
Air, Climate	P	P	LTP		PTE	
Water	P	P	LTP		PTE	
	P	N	LTP	REV		U
Biodiversity	P	P	LTP		PTE	
	P	N	LTP	REV		U
Soil	P	N	LTP	REV		U
Population, Human health	P	P	LTP		PTE	
Landscape and Cultural Heritage	P	N	LTP	REV		U

Possible Actions

Favor innovation and technological transfer within SMEs:

- Strengthening institutions helping enterprises for technological and know-how transfer;
- Creation of partnerships between structures helping enterprises, economic actors, chamber of commerce … to disseminate good practices and innovative technologies;
- Creation of transnational partnerships to promote innovations on products, services, production processes, organisation modes so as to raise businesses' competitiveness
- Transnational cooperation and exchange of experiences to support projects of innovative enterprises in strategic fields (environment protection, tourism, agriculture, information technologies…)
- Support to the development of technological and non technological innovations for services having a transnational dimension (tourism, communications);
- Transnational actions of exchange of competences and know-how for the implementation of new processes, new technologies
- Transnational diffusion of innovations concerning corporate finance; networking of financing tools for SMEs; development of specific financing means for innovative SMEs…

Favor links between businesses and applied research

- Develop transnational partnership between businesses and applied research to devise and disseminate new technologies, products or processes;
- Create innovative "knowledge and service communities" for SMEs;
- Develop projects between research institutions aiming to support economic development projects and strategies;

Priority Axis1: Strengthening innovation capacities
Objective 1.1: Dissemination of innovative technologies and know-how
• Mobilise transnational partnerships to develop ways of implementing research results in the field of energy, of environment, of agriculture (better productivity, fighting pollution, energy savings, water saving and management); • Improve access of economic actors to scientific knowledge, to innovative process, to good practices (capitalisation, dissemination)
Comments:
Technological and know-how transfer between SME;s, dissemination of good practices, innovative enterprises for environmental protection and research applications in the field of energy, of environment, of agriculture (better productivity, fighting pollution, energy savings, water saving and management) will have a positive effect in the areas of air/climate, water, biodiversity and human health. Impacts on landscape can not be excluded as a result of business site development. Impacts on water, soil and biodiversity cannot be excluded as a result of innovative enterprises in the areas of tourism and agriculture.
Suggestions: More details on special sector demands for the diffusion of innovation and technology transfer could be incorporated. In order to diminish any possible negative impacts on landscape reuse of existing facilities should be promoted In order to diminish any possible negative impacts on water soil and biodiversity agro environmental and low intensity tourist innovative enterprises should be promoted.

Priority Axis1: Strengthening innovation capacities

Objective 1.2 Strengthening of territorial economic cooperation

Assessment:

	P or VP	LSN, N, LSP or P	FC, LTP, O or ST	IR or REV	PTE	U
Air, Climate						
Water						
Fauna, Flora, Biodiversity						
Soil						
Population, Human health						
Landscape and Cultural Heritage						

Possible Actions:

Develop strategic relations between clusters, economic development poles, innovation networks

- Support transnational cooperation actions between clusters, poles of competitiveness, innovation networks, scientific networks and industrial poles in the context of common development strategies (development of new technologies, new products, new processes, new marketing strategies) ;
- To support cooperation between clusters, research centres and training centres for mid-term and long-term development strategies;
- To develop cooperation and exchanges to improve the capacity to apply for European calls for proposal (framework programme, CIP7)
- To support the setup of scientific and technological poles (regional, national, transnational) able to compete at an international level;

Strengthen territorial integration of economic development poles

- Develop projects between economic actors and public authorities (coordination, capitalisation, dissemination) in the context of medium and long term integrated territorial development strategies;
- To ensure a better use and valorisation of territorial resources (technological, human resources, natural resources…) in economic development strategies

Comments:

The OP does not strongly address any specific thematic approach. An assessment of possible positive or negative effects cannot be performed.

Suggestions:

Possible action specifications can be supplemented with an environmental approach, eg support the setup of environmental scientific and

[7] CIP: Competitiveness and innovation framework programme

technological poles

Priority Axis2: Environmental protection and promotion of a sustainable territorial development

Objective 2.1: Protection and enhancement of natural and cultural resources, risks prevention

Assessment:

	P or VP	LSN, N, LSP or P	FC, LTP, O or ST	IR or REV	PTE	U
Air, Climate	**VP**	**P**	**LTP**		**PTE**	
Water	**VP**	**P**	**LTP**		**PTE**	
Fauna, Flora, Biodiversity	**VP**	**P**	**LTP**		**PTE**	
Soil	**VP**	**P**	**LTP**		**PTE**	
Population, Human health	**VP**	**P**	**LTP**		**PTE**	
Landscape and Cultural Heritage	**VP**	**P**	**LTP**		**PTE**	

Possible Actions

Prevention and fight against pollution

- Support transnational initiatives to ensure that atmospheric pollution in urban areas and territorial metropolitan systems is monitored and encourage its reduction;
- Support transnational initiatives aiming to improve information systems and information of the population;
- Disseminate and implement good practices concerning transports and waste management
- Disseminate innovation and good practices concerning the impact of agricultural activities on water resources;
- Promote the integration of European and international norms in public policies (reducing green house gas…)

Enhancement of fragile areas

- Disseminate good practices at transnational level concerning management of protected areas (reserves and natural parks, Natura 2000, wetland);
- Promote conservation of the built heritage, landscape and every cultural resource (material and immaterial) within the context of an integrated territorial development approach;
- Elaborate common strategies connecting cultural and natural resource protection in link with the promotion of sustainable tourism;
- Disseminate good practices and elaborate common strategies for protection of biodiversity and landscapes;
- Transnational initiatives to promote sustainable economic development activities (sustainable fishing, aquaculture ; agriculture ; green tourism);

Management and planning

Priority Axis2: Environmental protection and promotion of a sustainable territorial development

Objective 2.1: Protection and enhancement of natural and cultural resources, risks prevention

Assessment:

	P or VP	LSN, N, LSP or P	FC, LTP, O or ST	IR or REV	PTE	U
Air, Climate	**VP**	**P**	**LTP**		**PTE**	
Water	**VP**	**P**	**LTP**		**PTE**	
Fauna, Flora, Biodiversity	**VP**	**P**	**LTP**		**PTE**	
Soil	**VP**	**P**	**LTP**		**PTE**	
Population, Human health	**VP**	**P**	**LTP**		**PTE**	
Landscape and Cultural Heritage	**VP**	**P**	**LTP**		**PTE**	

- Develop and disseminate at transnational level innovative strategies for an integrated management of sensitive areas (coasts, mountains, small islands);
- Sharing and/or disseminate at transnational level observation, evaluation and management systems for the protection of natural and cultural heritage;
- Develop common norms and regulation, harmonise data and information systems at transnational level; coordinate alert and intervention systems;
- Promote setting up and implementation of local agenda 21 and Habitat agenda;
- Harmonise control and certification norms; improve the dissemination and implementation of certification systems;
- To disseminate good practices concerning sustainable development for public administrations;
- To inform and raise public awareness concerning environmental Mediterranean heritage and on the existing threats;

Coordination of prevention and fighting against natural risks (fires, drought, desertification, floods…)

- Structure and integrate tools of observation of the risks, of evaluation and diffusion of information at a transnational level: definition of risk areas and fragile areas, evaluation of the consequences of climate changes, monitoring of floods, fires, tsunamis, sea level rise, assessment of vulnerability of landscapes and natural resources ...
- Develop network of operative systems; develop common standards of equipment, of processes, of information diffusion; develop applications from the Galileo system;
- Set up and disseminate common norms, technologies; processes and information systems; to support norms harmonisation;
- Improve transnational communication systems and intervention means to deal with crisis; support mutualisation of intervention means; support a better transnational coordination of operational structures; elaborate and implement assistance plans at regional, national and transnational level;

Priority Axis2: Environmental protection and promotion of a sustainable territorial development

Objective 2.1: Protection and enhancement of natural and cultural resources, risks prevention

Assessment:

	P or VP	LSN, N, LSP or P	FC, LTP, O or ST	IR or REV	PTE	U
Air, Climate	**VP**	**P**	**LTP**		**PTE**	
Water	**VP**	**P**	**LTP**		**PTE**	
Fauna, Flora, Biodiversity	**VP**	**P**	**LTP**		**PTE**	
Soil	**VP**	**P**	**LTP**		**PTE**	
Population, Human health	**VP**	**P**	**LTP**		**PTE**	
Landscape and Cultural Heritage	**VP**	**P**	**LTP**		**PTE**	

- Improve integration of sectoral and territorial policies to prevent risks and make intervention easier;
- Develop at transnational level risks and natural disasters management plans;

Protection and enhancement of water resources

Mobilization and enhancement

- Promote transnational innovative approaches that combine resource management and mobilisation;
- Ensure that resources are secured; favour water saving and recycling (home, industry, tourism, agriculture) ; promote alternative storage means;
- Use scientific research results to promote a better use of water;

Raise awareness and inform populations

- Develop transnational information, education and awareness raising systems with regards to water and to its management and saving amongst targeted audiences;
- Promote eco-responsible behaviour and solidarity;

Comments:

Positive effects are expected in all areas considering the description and the possible relevant actions defined in the OP:

- Prevention and fight against pollution (air, water, human health and soil affected)
- Enhancement of fragile areas (biodiversity, landscape and cultural heritage affected)
- Management and planning (soil, landscape and cultural heritage affected)
- Coordination of prevention and fighting against natural risks (water and population affected)
- Protection and enhancement of water resources (water affected)

Priority Axis2: Environmental protection and promotion of a sustainable territorial development

Objective 2.1: Protection and enhancement of natural and cultural resources, risks prevention

Assessment:

	P or VP	LSN, N, LSP or P	FC, LTP, O or ST	IR or REV	PTE	U
Air, Climate	**VP**	**P**	**LTP**		**PTE**	
Water	**VP**	**P**	**LTP**		**PTE**	
Fauna, Flora, Biodiversity	**VP**	**P**	**LTP**		**PTE**	
Soil	**VP**	**P**	**LTP**		**PTE**	
Population, Human health	**VP**	**P**	**LTP**		**PTE**	
Landscape and Cultural Heritage	**VP**	**P**	**LTP**		**PTE**	

Suggestions:
A stronger focus on actions promoting long term reduction of greenhouse gas emissions even beyond the time frame of Kyoto-protocol (2012+). Actions related to climate change adaptation could be incorporated

Priority Axis2: Environmental protection and promotion of a sustainable territorial development

Objective 2.2 Promotion of renewable energies and improvement of energy efficiency

Assessment:

	P or VP	LSN, N, LSP or P	FC, LTP, O or ST	IR or REV	PTE	U
Air, Climate	**P**	**P**	**LTP**		**PTE**	
Water						
Fauna, Flora, Biodiversity						
Soil						
Population, Human health	**P**	**P**	**LTP**		**PTE**	
Landscape and Cultural Heritage						

Possible Actions

Support technological innovation for the promotion of renewable energy:

- To support transnational networks in favour of development and transfer of innovative technologies for the production and use of renewable energy. Support to energy systems contributing to reduce green house gas;
- Use research results to develop process aiming at reducing energy consumption and improving energy efficiency;

Priority Axis2: Environmental protection and promotion of a sustainable territorial development

Objective 2.2 Promotion of renewable energies and improvement of energy efficiency

Assessment:

	P or VP	LSN, N, LSP or P	FC, LTP, O or ST	IR or REV	PTE	U
Air, Climate	**P**	**P**	**LTP**		**PTE**	
Water						
Fauna, Flora, Biodiversity						
Soil						
Population, Human health	**P**	**P**	**LTP**		**PTE**	

- Develop networks of sustainable energy technologies around applied projects; support the development of common technological instruments;
- Favour the exchange of information and management mode around applied projects;

Manage energy consumption and better use of renewable energy

- To develop transnational partnerships in favour of the use of innovative construction materials and processes (High environmental quality, technology transfer);
- Promote pilot projects concerning the production of renewable energy and energy savings (solar energy, wind energy, biomass, heat pumps);
- Develop production and/or use of renewable energy in public policies (solar energy, biomass, biogas, biofuel, biodiesel);
- Disseminate innovations and good practices in the field of public transports;
- Develop sustainable energy schemes ;
- Support harmonisation of norms and promote implementation of international orientations concerning energy savings, energy efficiency, energy consumption…
- Innovate concerning standardisation and adapt norms in key sectors like construction, housing, transport;
- Develop clean energy applied to sustainable tourism;
- Develop partnerships with large energy business to promote alternative production processes and alternative uses;
- To inform the civil society and raise awareness

Comments:

Priority Axis2: Environmental protection and promotion of a sustainable territorial development

Objective 2.2 Promotion of renewable energies and improvement of energy efficiency

Assessment:

	P or VP	LSN, N, LSP or P	FC, LTP, O or ST	IR or REV	PTE	U
Air, Climate	**P**	**P**	**LTP**		**PTE**	
Water						
Fauna, Flora, Biodiversity						
Soil						
Population, Human health	**P**	**P**	**LTP**		**PTE**	

Actions for :

- the support of technological innovation for the promotion of renewable energy
- the management of energy consumption and better use of renewable energy

are expected to contribute to the reduction of air pollution and greenhouse gas emissions and consequently climate change

Projects should follow a “balanced strategies for the use and exploitation of renewable energy resources”, preventing possible negative impacts to Water, Biodiversity and Landscape/Cultural Heritage.

Suggestions:
Innovate concerning standardisation and adapt norms could include in the key renovation of buildings (residential and non-residential) including facility management and energy efficiency

Priority Axis2: Environmental protection and promotion of a sustainable territorial development

Objective 2.3 Prevention of maritime risks and strengthening of maritime safety

Assessment:

	P or VP	LSN, N, LSP or P	FC, LTP, O or ST	IR or REV	PTE	U
Air, Climate						
Water	**P**	**P**	**O**		**PTE**	**U**
Fauna, Flora, Biodiversity	**P**	**P**	**O**		**PTE**	**U**
Soil						
Population, Human health	**P**	**P**	**O**		**PTE**	**U**
Landscape and Cultural Heritage						

Possible Actions:

Adaptation and coordination of prevention and intervention systems

- Improve knowledge of traffics and risks on the whole Mediterranean area with the implementation of common observation, analyse and communication systems;
- Use of new observation means with new technologies and the Galileo system;
- Coordinate traffic monitoring and observation systems in dangerous areas for navigation security and environmental protection; coordinate pollution monitoring;
- Support transnational joint actions concerning prevention, alert, control, management, and risk monitoring in maritime transport and industrial activity ;
- Transnational initiatives to pool and share resources (technical means, exchange of competences, use of innovative technologies…) ;
- Implementation of coordinated prevention system at sea and on the mainland in coastal areas

Comments:

The improvement of maritime safety is expected to have a positive effect in diminishing risks in the coastal and marine environment (by reducing accident risks and the capacity to react after accidents with the proper mitigation measures) and human health and safety.

Suggestions: -

Priority Axis 3 : Improve mobility and territorial accessibility

Objective 3.1 Improvement of transport and transit capacities and promotion of multimodality

Assessment:

	P or VP	LSN, N, LSP or P	FC, LTP, O or ST	IR or REV	PTE	U
Air, Climate	**P** **P**	**N** **P**	**LTP** **LTP**	**IR**	**PTE** **PTE**	**U** **U**
Water	**P**	**N**	**LTP**	**REV**	**PTE**	**U**
Fauna, Flora, Biodiversity	**P**	**N**	**LTP**	**REV**		**U**
Soil	**P**	**N**	**LTP**	**REV**		**U**
Population, Human health	**P** **P**	**N** **P**	**LTP** **LTP**	**IR**	**PTE** **PTE**	**U** **U**
Landscape and Cultural Heritage	**P**	**N**	**LTP**	**REV**		**U**

Possible Actions:

Improvement of transnational mobility and of territorial accessibility

- Strengthen transnational joint actions related to European transport corridors in the Mediterranean area;
- Support public policies aiming to improve and develop Med priority corridors;
- Promote transnational initiatives to enhance sea/land interfaces ;
- Support initiatives aiming to improve connections with north-Africa;
- Promote coordinated development strategies between ports to strengthen their capacities against international competition (transhipment, access of goods to European countries,
- Improve maritime traffic management;
- Promote sea highways, short sea shipping;
- Improve connexions between islands and islands accessibility;

Enhancement of multimodality and of sustainable transport systems

- Promote transnational initiatives for the use of multimodal platforms;
- Promote inter-operability, road-rail transport and links with high speed transport (of goods and passengers);
- To use new technologies for better traffic management;
- Develop innovative transport systems and the use of public transports in urban, rural and sensitive areas;

Comments:

Actions aiming to strengthen European Transport Corridors and maritime traffic can be expected to have indirect impacts to air emissions (due

Priority Axis 3 : Improve mobility and territorial accessibility

Objective 3.1 Improvement of transport and transit capacities and promotion of multimodality

Assessment:

	P or VP	LSN, N, LSP or P	FC, LTP, O or ST	IR or REV	PTE	U
Air, Climate	**P** **P**	**N** **P**	**LTP** **LTP**	**IR**	**PTE** **PTE**	**U** **U**
Water	**P**	**N**	**LTP**	**REV**	**PTE**	**U**
Fauna, Flora, Biodiversity	**P**	**N**	**LTP**	**REV**		**U**
Soil	**P**	**N**	**LTP**	**REV**		**U**
Population, Human health	**P** **P**	**N** **P**	**LTP** **LTP**	**IR**	**PTE** **PTE**	**U** **U**
Landscape and Cultural Heritage	**P**	**N**	**LTP**	**REV**		**U**

to traffic), soil and landscape (development of corridors that affect them) and water (highway runoff).

On the other hand actions related to road –rail transport and other public transport can have a positive effect to air and more in particular greenhouse gas emissions (air and climate change, human health affected) The cumulative effect (positive or negative) will depend on the emphasis given to actions promoting massive transport other than road vehicles.

Suggestions:

All projects supporting the increase of transport capacities should be accompanied with impact assessments, addressing impacts to air, climate, water, biodiversity, soil, human health, landscape and cultural heritage.
Multimodal transport solutions should be linked with a sustainable strategy for settlement development. The funded projects should haeve a clear focus on strengthening environmentally friendly modes of transport.

Priority Axis 3 : Improve mobility and territorial accessibility

Objective 3.2 Support to the use of information technologies for a better accessibility and territorial cooperation

Assessment:

	P or VP	LSN, N, LSP or P	FC, LTP, O or ST	IR or REV	PTE	U
Air, Climate	**P**	**P**	**LTP**		**PTE**	**U**
Water						
Fauna, Flora, Biodiversity						
Soil						
Population, Human health	**P**	**P**	**LTP**		**PTE**	**U**
Landscape and Cultural Heritage						

Possible Actions:

Support innovative digital services and improve the access of the population to information technologies in isolated territories

- To disseminate innovative experiences allowing an easier access to digital services;
- To facilitate the development of innovating on line services on the scale of Med space;
- To promote the use of information technologies to the civil society, to administrations, economic actors;
- Promote the use of information technologies and develop innovative digital services for isolated territories;

Support the use of information technologies to improve governance and strengthen transnational cooperation on strategic issues

- Improve transnational observation, analyse and communication means on sensitive issues like maritime co-operation, goods and passenger transports, management of water, prevention of risks…;
- Develop schemes of electronic communication networks on a transnational scale;
- Support the transnational initiatives allowing a more effective use of ICT for the population, the administrations and the economic actors;
- Develop interoperability and security of electronic platforms; to increase the reliability and security of electronic transactions…
- Disseminate good practices and support with the use of information technologies a better performance of public policies in major agglomerations;

Comments:

The use ICT for access to public services by other means than physical transport (e.g. e-learning,). Even if the potential to substitute physical transport with ICT is limited, the objective of intervention will reduce traffic volume, influencing air quality and human health.

Suggestions: -

Priority Axis 4 : Promotion of a polycentric and integrated development of the Med space

Objective 4.1 To stimulate cooperation and improve territorial governance

Assessment:

	P or VP	LSN, N, LSP or P	FC, LTP, O or ST	IR or REV	PTE	U
Air, Climate	**P**	**P**	**LTP**			**U**
Water	**P**	**P**	**LTP**			**U**
Fauna, Flora, Biodiversity						
Soil	**P**	**P**	**LTP**			**U**
Population, Human health	**P**	**P**	**LTP**			**U**
Landscape and Cultural Heritage	**P**	**P**	**LTP**			**U**

Possible Actions:

Promotion of coordinated development strategies between local, regional and national authorities

- Strengthening roles and potentialities of territories through concerted territorial development strategies between large Mediterranean urban areas (for example between metropolis, between ports);
- Strengthening town networks on common development issues (economic development, transports, energy, environment…);
- Develop cooperation to improve social cohesion and territorial attractiveness;
- Promote collaboration between urban and rural territories in order to improve networking between institutions and services (innovation, culture, tourism…):
  - Networking between small size structures and integration of transnational systems able to deal with common issues related to the promotion of cultural and natural heritage;
  - To develop identity and strengthen the relation between citizens and their territory;
  - To promote strategic integration of peripheral zones in transnational development.
- Promote a polycentric system in the Med area by strengthening cooperation between territorial systems (relations between urban areas, between urban and rural areas).

Improvement of governance systems

- Disseminate good practices at transnational level and promote the use of new and better territorial planning instruments and better development models;
- Disseminate good practices and promote initiatives for decentralization of services for middle size towns and less populated territories;
- To strengthen transnational dimension of local governance systems which use approaches and operational tools related to strategic planning (urban environment);

Priority Axis 4 : Promotion of a polycentric and integrated development of the Med space

Objective 4.1 To stimulate cooperation and improve territorial governance

Assessment:

	P or VP	LSN, N, LSP or P	FC, LTP, O or ST	IR or REV	PTE	U
Air, Climate	**P**	**P**	**LTP**			**U**
Water	**P**	**P**	**LTP**			**U**
Fauna, Flora, Biodiversity						
Soil	**P**	**P**	**LTP**			**U**
Population, Human health	**P**	**P**	**LTP**			**U**
Landscape and Cultural Heritage	**P**	**P**	**LTP**			**U**

- Improve governance systems and improve relations and cooperation between territories in order to reach a more balanced economic development;
- Promote concerted and innovative institutional actions between public administrations of different territories (regions, towns, rural areas) to rationalise their actions and support the setting up of common strategies;

Comments:

Strengthening urban and regional networks will help to reduce urban sprawl, decrease new land take and consequently long-distance traffic demand.

The improvement of urban structures in terms of innovative solutions will have a positive effect on environmental issues like Water, Soil and Air and will improve overall conditions of urban living, addressing the environmental objectives for Population and Human Health

Suggestions: -

Priority Axis 4 : Promotion of a polycentric and integrated development of the Med space

Objective 4.2 Promotion of identity and enhancement of cultural resources for a better integration of Med space

Assessment:

	P or VP	LSN, N, LSP or P	FC, LTP, O or ST	IR or REV	PTE	U
Air, Climate						
Water						
Fauna, Flora, Biodiversity						
Soil						
Population, Human health						
Landscape and Cultural Heritage	**P**	**P**	**LTP**			**U**

Possible Actions:

Strengthening of transnational networks for the valorisation of Mediterranean heritage

- Implement transnational networks and support common transnational management of poles and complex cultural territorial systems (urban areas, historical centres, cultural districts etc.), mainly those with specific common cultural value (world heritage, UNESCO, etc);
- Support transnational initiatives to promote cultural identity;
- Protect historical heritage, landscapes and every cultural resource (material and immaterial) in a perspective of integrated territorial development;

Develop activities and services for economic and cultural enhancement

- To support exchanges of good practices and develop common strategies for the implementation of innovative cultural services;
- Promote cultural initiatives aiming to increase territorial economic attractiveness;
- To promote exchanges and experiences for a better economic valorisation of cultural innovations;

Comments:

Capitalising of cultural heritage will help to protect cultural monuments including cultural landscape and to develop innovative management strategies for sustainable exploitation. It will improve the state of preservation and will help to re-develop disadvantaged areas. Particular attention to natural and social capacity issues will avoid tourist exploitation which could imply negative impacts (traffic, construction activities, seasonal overload).

Suggestions:-

6.2.2 Selection criteria for the proposed activities

The Programming Document includes the following Selection Process:

Selection criteria:

- Coherence with the general objectives of the Med programme
- Community added value
- Projects can only be selected for which the EU support represents a strong condition for its implementation
- Transnationality
- General strategy of the project
- Innovation and competitiveness (Lisbon agenda)
  - Particular attention should be paid to projects with a significant innovative dimension (technological innovation, organisational innovation, governance systems, cooperation, communication…)
  - Projects which contribute to improving the economic performances and the competitiveness of the Mediterranean area (job creation, new markets, better efficiency when facing competition…) will be favoured
- Sustainable development (Gothenburg agenda)
  - Particular attention should be paid to projects that deal with resource use and the promotion of sustainable development (water saving, renewable energy, developing technologies to fight marine, urban, industrial and agricultural pollution…)
  - Projects should assist the promotion of natural areas' attractiveness through diversification and revitalisation of economies, particularly in peripheral areas, whilst ensuring they have no negative impact on the natural and built environments.
- Governance and partnership
- Concentration – snowball effects
  - A particular attention will be paid to the lever effect of projects, to their capacity to attract other financial resources. Collective actions must have the priority for their capacity to associate smaller projects and avoid dispersion of financial means;
  - Projects must have significant effects beyond the project implementation period (results and impacts)
- Capitalisation and perenniality
- Field impacts
- Territorial integration

Within the above context the proposed process aims to:

- Enable adequate evaluation of the positive or negative effects during the selection of specific projects
- Facilitate environmentally suitable implementation of the programming document.

On project level a preliminary impact assessment on environmental issues is recommended. The applicants could make a self assessment about the environmental aspects of the proposed projects following the list of "assessment questions" as a scoring sheet:

Air & Climate	Will the realization of the project lead to pollutant (within member states and transboundary), GHG emission reduction?
	Will the realization of the project favor the use of Renewable Energy Sources
	Will the realization of the project lead to improved energy efficiency and savings?
	Will the realization of the project promote environmentally friendly transportation
Biodiversity, Flora and Fauna	Will the realization of the project support the protection and reconstruction of habitats
	Will the realization of the project contribute to the decrease of loss of biodiversity
Water	Will the realization of the project promote water status improvement
	Will the realization of the project promote marine waters good environmental status
Soil	Will the realization of the project contribute in waste minimization, sustainable waste management and the reduction of contaminated sites
	Will the realization of the project contribute to the preservation of soil attributes and the reduction of impacts by the use of natural resources
Population and Human Health	Will the realization of the projectcontribute to the control of environmental related health risks and hazards
	Will the realization of the project contribute the reduction of the population exposed to noise
Cultural Heritage and Landscape	Will the realization of the project limit the demand on urban land for urban development?
	Will the realization of the project contribute to the protection of natural heritage?

6.3 Conclusions, Selection of Alternatives and Suggestions

Most of the programme priorities and possible actions will have positive impacts on the relevant environmental issues. Negative indirect effects are mainly expected in the implementation of Objective 3.1. Possible negative impacts on the environment can be anticipated through projects selection criteria (chapter 6.2.2) and proper environmental assessments.

The suggestions (chapter 6.2.1) are consolidated in the following matrix:

Priority Axis1: Strengthening innovation capacities
Objective 1.1: Dissemination of innovative technologies and know-how
Suggestions: More details on special sector demands for the diffusion of innovation and technology transfer could be incorporated. In order to diminish any possible negative impacts on landscape reuse of existing facilities should be promoted In order to diminish any possible negative impacts on water soil and biodiversity agro environmental and low intensity tourist innovative enterprises should be promoted.
Objective 1.2 Strengthening of territorial economic cooperation
Suggestions:

Possible action specifications can be supplemented with an environmental approach, eg support the setup of environmental scientific and technological poles
Priority Axis2: Environmental protection and promotion of a sustainable territorial development
Objective 2.1: Protection and enhancement of natural and cultural resources, risks prevention
Suggestions: A stronger focus on actions promoting long term reduction of greenhouse gas emissions even beyond the time frame of Kyoto-protocol (2012+). Actions related to climate change adaptation could be incorporated
Objective 2.2 Promotion of renewable energies and improvement of energy efficiency
Suggestions: Innovate concerning standardisation and adapt norms could include in the key renovation of buildings (residential and non-residential) including facility management and energy efficiency
Objective 2.3 Prevention of maritime risks and strengthening of maritime safety
Suggestions: -
Priority Axis 3 : Improve mobility and territorial accessibility
Objective 3.1 Improvement of transport and transit capacities and promotion of multimodality
Suggestions: All projects supporting the increase of transport capacities should be accompanied with impact assessments, addressing impacts to air, climate, water, biodiversity, soil, human health, landscape and cultural heritage. Multimodal transport solutions should be linked with a sustainable strategy for settlement development. The funded projects should haeve a clear focus on strengthening environmentally friendly modes of transport.
Objective 3.2 Support to the use of information technologies for a better accessibility and territorial cooperation
Suggestions: -
Priority Axis 4 : Promotion of a polycentric and integrated development of the Med space
Objective 4.1 To stimulate cooperation and improve territorial governance
Suggestions: -
Objective 4.2 Promotion of identity and enhancement of cultural resources for a better integration of Med space
Suggestions: -

7. Monitoring

This step will insure that:

- information on the significant effects of activities and projects on the relevant environmental objectives and indicators for the programming document is recorded;
- any unforeseen adverse effects are identified in order to be able to undertake appropriate remedial actions.

Considering the proposal for an Environmental Self Assessment, during project selection, it is suggested that the results are systematically compiled and used for the environmental monitoring during programme implementation.

An explicit requirement should be made, providing for corrective measures if the monitoring system shows unexpected adverse environmental effects of programme implementation.

ANNEXES : LEGISLATION AND POLICY

SOURCE: European Environmental Agency