



**Strategic Environmental Assessment**

# **ENVIRONMENTAL REPORT**

**SOUTH EAST EUROPE PROGRAMME**  
**2007-2013**

**Version 2-2**

**South East Europe includes: Albania, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Former Yugoslav Republic of Macedonia (FYROM), Greece, Hungary, Italy, Moldova, Montenegro, Romania, Serbia, Slovak Republic, Slovenia, (parts of) Ukraine and (parts of) Turkey**

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## 0 NON TECHNICAL SUMMARY

The Task Force of South East Europe Programme 2007-2013 developed a draft operational programme for transnational cooperation in line with Art. 6 of the ERDF Regulation<sup>1</sup>. 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.

### Current state of the environment

The environmental context in which the transnational programme for South East Europe is proposed for implementation is briefly described, on the basis of European status reports of the environmental situation. Efforts are still needed to improve general conditions for air quality, soil, water resources and protection of fauna, flora and biodiversity. The diversity of the natural heritage is one of the biggest assets of the programme area. Although the Natura 2000 network has been established in most member states during the last ten years, the loss of biodiversity did not come to a halt. South-East Europe has to face consequences that follow dispersal and sprawl of urban settlements. Future accessibility modes will influence changes to urban development and landscape.

### Programme objectives and priorities

In the light of the Community Strategic Guidelines (Lisbon/Gothenburg) the overall strategic goal of the programme is to develop transnational partnerships on matters of strategic importance to improve the territorial, economic and social integration process and to contribute to cohesion, stability and competitiveness:

- Priority axis 1 – *Facilitation of innovation and entrepreneurship* – will contribute specifically to the future development of SEE as a place of innovation and - as long term impact – lead to economic growth and enhance employment.
- Priority axis 2 – *Protection and improvement of the environment* – will promote resource efficient technologies, support efficient management of natural resources and enhance transnational risk management capacities.
- Priority axis 2 – *Improvement of the accessibility* – will improve the accessibility of local and regional actors to the European Networks.
- Priority axis 3 – *Promotion of sustainable development of metropolitan areas and regional systems of settlements* – will develop integrated strategies tackling economic, environmental, social and governmental problems affecting metropolitan areas and utilize polycentric structures and cultural values.

### Methodology of impact assessment

For each area of intervention possible effects on the relevant environmental issues were analysed, referring to “guiding questions” and environmental protection objectives based on

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<sup>1</sup> Council Regulation (EC) No 1083/2006 of 11 July 2006

legislation and strategic policies on international, community or state level. As none of the areas of intervention are described sufficiently detailed to perform a quantitative assessment, the assessment concentrates on a qualitative description of possible impacts (positive, neutral or negative) on relevant environmental issues referring to SEA directive (2001/42/EC).

### **Possible environmental impacts of the programme**

The programme integrates positive impacts on environmental issues into transnational cooperation and development activities. Priority axis 1 supports the creation or restructuring of technology & innovation-oriented networks, which will increase the implementation of best (or almost) best technologies and – in a mid-term perspective – will lead to more resource and energy efficiency in production and service sector. Priority axis 2 supports the protection of environment and natural resources, with positive impacts on most of the environmental issues including biodiversity and human health. Priority axis 3 aims to change transnational framework conditions for promoting, planning and operation for primary & secondary transportation networks and multimodal platforms. Priority axis 4 promotes activities to improve living conditions in urban areas, with positive impacts on water resources, soil, air and environmental related health risks.

An assessment of possible positive or negative effects cannot be performed for all areas of intervention, due to the lack of information on details about possible downstream activities. Some activities seem to have only limited impact on environmental issues (e.g. “Develop the enabling environment for innovative entrepreneurship”).

Negative impacts on environmental issues cannot be excluded, if the programme supports planning and preparation of transport infrastructure (road, rail, waterways) without taking into account environmental impacts. This could lead to an increase in land take, fragmentation of habitats and additional impact through air and noise pollution in sensitive areas. Ongoing implementation of risk technologies (like gen manipulated seeds) or the unbalanced exploitation of energy sources could have negative impacts on landscape, soil and biodiversity. These impacts should be taken into account by strict project selection criteria.

### **Main results and recommendations**

Most of the programme priorities and areas of intervention will have positive impacts on the relevant environmental issues. Significant negative impacts on the environment can be excluded, as project selection criteria will be elaborated in line with the specific objectives of the operational programme and the overall principle “promotion of sustainable development”.

Programme implementation should focus on key issues of long-term balanced development in a transnational context, like reducing negative impacts of climate change, air emission control, cooperative management of natural assets, sustainable transport systems and integrated risk management.

# 1 INTRODUCTION

According to the European directive 2001/42/EG on the assessment of the effects of certain plans and programmes on the environment (referred as SEA directive) an Strategic Environmental Assessment is performed for the South East Europe Programme 2007-2013.

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).

The **major elements for a SEA** required in the SEA directive are the **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 shall be defined. According to the directive the environmental authorities must be consulted on a scoping report.

Based on the **Environmental Assessment** (Art. 5 and 8 and Annex I) an environmental report shall be prepared which shall include information about:

- the contents and level of detail in the plan or programme
- the geographical scope of the plan or programme
- a description of the methods of assessment
- the 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
- its stage in the decision making process

The environmental report and the opinions expressed shall be taken into account during the preparation of the operational programme and before its adoption.

The draft programme and the environmental report prepared shall be made available in the course of **Consultations** (Art. 6 and 7) to the authorities, the public and neighbouring Member States, which are likely to be affected by the environmental impacts.

Member States shall monitor the significant environmental effects of the implementation of plans and programmes in order, inter alia, to identify at an early stage unforeseen adverse effects, and to be able to undertake appropriate remedial action (**Monitoring** (Art. 10)).

## 2 OUTLINE OF CONTENTS AND MAIN OBJECTIVES OF THE OPERATIONAL PROGRAMME

### 2.1 Programming framework

Referring to the “European Territorial Cooperative Objective” of the European Regional Development Fund (Art. 6 Regulation (EC) 1080/2006) the ERDF shall focus its assistance – among others - on the establishment and development of trans-national cooperation through the financing of networks and of actions conducive to integrated territorial development.

These shall be concentrated primarily on the following priorities:

- a) innovation: the creation and development of scientific and technological networks, and the enhancement of regional R&TD and innovation capacities, where these have a direct contribution to the balanced economic development of trans-national areas.
- b) environment: water management, energy efficiency, risk prevention and environmental protection activities with a clear trans-national dimension
- c) accessibility: activities to improve access to and quality of transport and telecommunications services where these have a clear trans-national dimension
- d) sustainable urban development: strengthening polycentric development at trans-national, national and regional level, with a clear trans-national impact

### 2.2 Objectives and Priorities of the Operational Programme

*The summary is based on the operational programme, draft 2-2 of 19 March 2007.*

The South-East-European Space is a heterogeneous European area: EU member states, potential pre-accession states in the Western Balkans, Turkey and neighbouring countries to the EU like Moldova and Ukraine. The programme area includes 17 countries with a total population of 269 million and presents one of the most diverse and complex transnational cooperation areas in Europe. This is the only transnational Programme area with such a large number of Non-EU countries participating (candidates, potential candidates and third countries).

The Programme adopts a common challenge approach, focusing primarily on matters of strategic importance. Key challenges in transnational policy are identified as follows:

- Reconstruction of co-operative relations between the countries, particularly in the field of transport, economy, culture, water management and environmental protection
- Prevention and management of environmental risks (e.g. flood protection)
- Preparation for the accession and neighbourhood programmes

#### **Global objective of the programme:**

The programme shall develop transnational partnerships on matters of strategic importance to improve the territorial, economic and social integration process and to contribute to cohesion, stability and competitiveness.

The global objective should be achieved by following specific objectives:

**Specific Objective 1:** The SEE cooperation programme shall facilitate innovation, entrepreneurship, knowledge economy and information society by trans-national action.

**Specific Objective 2:** The SEE cooperation programme shall improve the attractiveness of regions and cities taking into account sustainable development, physical and knowledge accessibility and environmental quality by integrated approaches and trans-national action.

**Specific Objective 3:** The SEE cooperation programme shall foster integration by supporting balanced capacities for transnational territorial cooperation on all levels.

### Implementation of programmes objectives

The cornerstones for the implementation of the programmes objectives are the generation of visible and concrete cooperation projects, the contingency for top down projects in addition to bottom up development, the outlining of possible activities and the guarantee of qualitative partnerships.

Horizontally the programme shall respect and implement the **EU principles** of Promotion of sustainable development, equal opportunities and non-discrimination and Subsidiarity.

### Priority axes

**Priority axis 1 “Facilitation of innovation and entrepreneurship”** shall contribute specifically to the future development of South East Europe as a place of innovation. The objective is to facilitate innovation, entrepreneurship, knowledge economy and to enhance integration and economic relations in the cooperation area.

**Priority axis 2 “Protection and improvement of the environment”** shall contribute to the improvement of the environmental conditions and to the better management of protected and other natural/semi natural areas. The objective is to override the constraints imposed by national barriers, to foresee future environmental threats and opportunities and to develop common transnational action for the protection of nature and human health.

**Priority axis 3 “Improvement of the accessibility”** shall contribute specifically to the improvement of the accessibility of local and regional actors to the European Networks. They include physical infrastructure as well as access to the Information Society. The objective is to promote coordinated preparation for the development of accessibility networks and the support of multi-modality.

**Priority axis 4 “Development of transnational synergies for sustainable growth areas”** shall contribute to the balanced and polycentric patterns of the programme area. The objective is to develop and apply integrated strategies tackling on one hand the high concentration of economic, environmental, social and governance problems affecting metropolitan areas. On the other hand it supports activities optimizing of the given polycentric structure and the utilization of cultural values.

**Priority axis 5 “Technical assistance to support implementation and capacity building”** shall contribute to the smooth implementation of the programme while enabling the programme bodies, stakeholders, project promoters and final beneficiaries to make full use of the opportunities offered by the European Territorial Cooperation Objective 3 and Transnational Cooperation in particular.

## 3 SCOPING AND METHOD OF ASSESSMENT

### 3.1 General approach

The Environmental Report as defined in the SEA Directive contains information to fit to following purposes:

- to focus on the analysis of the key environmental issues of the programme area
- to analyse relevant impacts on environmental issues adjusted to the level of programme strategies and outcomes
- to be useful for the programme developers to work on best alternatives
- to 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

Two factors are important in deciding the scope and level of detail of the Environmental Report:

- The geographical territory of the trans-national programme, its characteristics and special driving forces for future development.
- The nature of possible projects to be funded by programme and its likely effect on the environment.

Having in mind the general programming background it becomes obvious, that the programme will presumably not be connected with significant adverse effects on environmental issues. But it has to be analysed, if the programme will set the framework for development which could have negative impacts in indirect way on a long-term view. On the other hand it should be worked out, if there are long-term environmental benefits following the programme implementation.

### 3.2 Level of information

In the line with the SEA directive following framework of the SEA performed is identified:

#### 3.2.1 Geographical area of relevance

To define the current state of the environment (including trends) and to assess possible positive or negative effects of objectives, priorities and proposed measures the geographical area of relevance covers Albania, Austria, Bosnia Herzegovina, Bulgaria, Croatia, Former Yugoslav Republic of Macedonia (FYROM), Greece, Hungary, Italy<sup>2</sup>, Moldova, Montenegro, Romania, Serbia, Slovak Republic, Slovenia and the western provinces of Turkey<sup>3</sup> and Ukraine<sup>4</sup> (see map below). Some effects will be considered in a larger geographical context, for instance effects on global climate change.

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<sup>2</sup> Provinces: Lombardia, Provincia Autonoma Bolzano/Bozen, Provincia Autonoma Trento, Veneto, Friuli-Venezia Giulia, Emilia-Romagna, Marche, Umbria, Abruzzi, Molise, Puglia, Basilicata

<sup>3</sup> Regions: Bati Marmara, Istanbul

<sup>4</sup> Cjermovestka Oblast, Ivano-Frankiviska Oblast, Zakarpatska Oblast, Odessa Oblast

figure 3-1: Transnational cooperation area South East Europe Programme 2007-2013



### 3.2.2 Relevant period of time

Trends and possible positive or negative effects of priorities, objectives and areas of intervention have to be assessed over the programming period 2007-2013 and further on until the year, when all the possible projects which will be funded by the programme will have to be finally implemented, which will be 2015.

### 3.2.3 Environmental issues

The level of information has to fulfil the requirements of the SEA directive, which outlines that the environmental report has to describe the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the programme (Annex I lit. b). This information is necessary for understanding how the programme could affect the environment in the area. It identifies the key problems of environmental issues and their likely evolution in the future.

According to the SEA directive following environmental issues are considered:

- Water
- Soil
- Air, Climate
- Population, Human Health
- Fauna, Flora, Biodiversity
- Landscape, Cultural Heritage<sup>5</sup>

<sup>5</sup> including issues like Architectural and Archaeological Heritage and Material Assets referring the SEA Directive Annex I

Additionally, cross-cutting themes like **energy consumption, use of renewable energy sources, traffic & transport, waste and risk management** could be identified as “environmental policies and field of action” There exists some interrelationship between these themes and most of the issues listed above. Therefore, a description of their current state and their likely evolution has been integrated into one of the environmental issues, e.g. energy consumption and transport issues to Air / Climate; waste management to Soil, flood risk management to Landscape, etc.

### 3.3 Method of assessment

#### 3.3.1 Determination of SEA-objectives

Environmental protection objectives (“SEA-objectives”), which are based on legislation and strategic policies on international, community or state level have been identified to be relevant for the operational programme (see Chapter 4).

Following key questions related to environmental issues have been derived from the general SEA objectives and are used as “guiding questions” for the environmental assessment:

Environmental issues		Guiding Questions
(1)	Water	Will the OP influence the surface and/or ground water quality in the sense of the Water Framework Directive (“good ecological and chemical status”)? Will the OP affect the hydro-morphology of river systems? Will the OP create impact on the sustainable use of water resources?
(2)	Soil	Will the OP help to protect soil attributes? Will the OP have effects on the state of contaminated sites? Will the OP promote sustainable waste management with focus on avoiding waste dumping and reducing land filling?
(3)	Air, Climate	Will the OP lead to reduction of air pollutants? Will the OP lead to reduction of Green house gases (GHG)? Will the OP increase energy efficiency? Will the OP change the role of renewable energy sources? Will the OP lead to reduction of transport related emissions?
(4)	Population, Human Health	Will the OP catalyse the reduction of the share of population exposed to noise? Will the OP support endeavours to reduce environmental related health risks?
(5)	Fauna, Flora, Biodiversity	Does the OP support the EU objective to stop the loss of biodiversity? Will the OP improve the quality and/or quantity of protected areas, especially the natura 2000 network ?
(6)	Landscape, Cultural Heritage	Will the OP influence the demand of land take for urban development? Will the OP support conservation or reconstruction of valuable cultural landscape? Will the OP facilitate protection of cultural heritage? Will the OP support sustainable urban and regional development? Will the OP enhance protection against natural hazards?

#### 3.3.2 Identifying significant effects on the environment

The assessment consists of a qualitative description of possible positive or negative effects which are induced by priorities and areas of intervention as part of the operational programme.

The methodical approach follows the general question:

**“Is there any significant positive and/or negative effect on environmental issues in the programme area due to possible actions related to programme priorities and areas of intervention pointed out in the OP?”**

For each area of intervention possible effects on the relevant environmental issues were analysed, following the “guiding questions” (see chapter 6.2).

Cumulative effects, also interrelationships between the environmental issues and themes of environmental interest (like energy efficiency, risk management, urban development), which are integrated into specific objectives and priorities of the programme, were analysed. The results of the analyses were illustrated by means of an assessment matrix and summarizing conclusions (see chapter 6.3).

### **3.4 Discussion of alternatives and measures to minimize negative impacts**

The first draft of environmental report was elaborated on the draft version 1.0 of the OP (dated November 3<sup>rd</sup>, 2006). The results of assessment were complemented by suggestions for reformulations or supplements to proposed priority axes / areas of intervention.

These suggestions for adjusting some of the priority axes / areas of intervention were discussed by the Task Force of the South East Europe Programme during two meetings (Thessaloniki, Dec 6.-7., 2006; Ljubljana, Jan. 6.-7., 2007). The implementation of most of the adjustments suggested by the first draft of environmental report finally lead to an optimized version of operational programme (version 2-2, March 19, 2007), reducing possible negative impacts and enhancing positive effects on environmental issues.

The description of the current state of the environment and the likely evolution thereof without implementation of the programme (zero-option) can be found in chap. 5 of the environmental report. There is not any alternative for a fundamental change of the overall structure of the programme, as possible strategies and priorities have to refer to Art. 6 of the 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”<sup>6</sup>

The remaining suggestions for adjustments of the final draft of the programme including possible activities to be additionally implemented into the OP indicate how to optimize the impacts on environmental issues in a positive way during programme implementation and by which means some of the remaining risks of negative impacts can be reduced.

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<sup>6</sup> Annex I lit. h SEA directive

## 4 ENVIRONMENTAL PROTECTION OBJECTIVES

The following chapter gives a review of international environmental objectives, laws and regulations with relevance to the transnational programme for South-East Europe. The selection concentrates on environmental issues which were identified in accordance with the SEA directive in the scoping document. Main SEA objectives which build the baseline for assessment were derived from those international objective frameworks.

Generally, the overall objectives for all environmental aspects rely on the **6<sup>th</sup> Environment Action Programme of the European Community 2002-2012** (6<sup>th</sup> EAP), which identifies four environmental areas for priority actions: 'Climate Change', 'Nature and Biodiversity', 'Environment, Health and Quality of Life' and 'Natural Resources and Waste' (EP 2002).

The European Council was engaged by the EAP to prepare seven Thematic Strategies which represent the next generation of environment policy:

- Air Pollution (adopted 21/09/2005)
- Prevention and Recycling of Waste (adopted 21/12/2005)
- Protection and Conservation of the Marine Environment (proposed 24/10/2005)
- Soil (adopted 22/09/2006)
- Sustainable Use of Pesticides (adopted 12/07/2006)
- Sustainable Use of Resources (adopted 21/12/2005)
- Urban Environment (adopted 11/01/2006)

The target was to create positive synergies between the seven strategies, as well as to integrate them with existing sectoral policies, the Lisbon Strategy and the Sustainable Development Strategy.

### 4.1 Water

The international main objective is the protection of water bodies also ground- and surface water according to the **EU Water Framework Directive** and national regulations. Rational use of water resources and the improvement of the chemical and ecological state of contaminated water bodies by 2015 are target of the European water protection policy.

The **Water Framework Directive** (2000/60/EC) requires a rational, balanced use of water resources, the protection of ground water as a source for drinking water and the systematic improvement of the chemical and ecological state of European water bodies by 2015. Member states had to adopt management plans in order to achieve the "good state" demanded by the EU.

Other European regulations which have an indirect impact on water bodies are 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 the pollution of water by industry, the **Drinking Water Directive** (98/83/EC) and the **Groundwater Directive** (2006/118/EC).

The **Thematic Strategy on the Protection and Conservation of the Marine Environment** aims to achieve good environmental status of the EU's marine waters by 2021 and to protect

the resource base upon which marine-related economic and social activities depend on (COM 2005 505).

The Parties of the **Carpathian Convention** (Article 6) shall take appropriate measures to promote policies integrating sustainable use of water resources, with land-use planning, and aim at pursuing policies and plans based on an integrated river basin management approach, recognizing the importance of pollution and flood management, prevention and control, and reducing water habitats fragmentation.

**Main SEA Objectives (Resume):**

- Protection of water bodies, ground- and surface water by rational, balanced use of water resources
- Improvement of the chemical and ecological state of European water bodies
- Reduction of pollution from agriculture, sewage treatment and certain industries

**Derived guiding questions for the assessment:**

- Will the OP influence the surface and/or ground water quality in the sense of the Water Framework Directive (“good ecological and chemical status”)?
- Will the OP affect the hydro-morphology of river systems?
- Will the OP create impact on the sustainable use of water resources?

## 4.2 Soil

The protection of soils against pollution and erosion is one of the objectives of the **6<sup>th</sup> EAP** and the **Thematic Strategy for Soil Protection**. The Strategy consists a Communication from the EC to the other European Institutions, a proposal for a framework Directive (a European law), and an Impact Assessment (COM 2006 231).

The **EU waste policy** has the potential to contribute to reducing the overall negative environmental impact of resource use. Preventing waste generation and promoting recycling and recovery of waste will increase the resource efficiency of the European economy and reduce negative environmental impacts of use of natural resources. The basic objectives of EU waste policy are to prevent waste and promote re-use, recycling and recovery so as to reduce the negative environmental impact. For the EU the long-term goal is to become a recycling society, that seeks to avoid waste and uses waste as a resource (COM 2005 666).

The **Protocol on Soil Protection to the Alpine Convention** includes measures for the designation of protected areas, areas at risk or threatened by erosion, the economic and prudent use of soils and raw materials, as well as certain activities such as agriculture, forestry and tourism (COUNCIL 2005 923).

The general objectives and principles of the **Convention on the protection and sustainable development of the Carpathians** are a comprehensive policy and cooperation for the protection and sustainable development of the Carpathians with a view to inter alia improving quality of life, strengthening local economies and communities, and conservation of natural values and cultural heritage. In order to achieve the objectives, the Parties shall take appropriate measures like precaution and prevention principles, the 'polluter pays' principle, public participation and stakeholder involvement, trans-boundary cooperation, integrated planning and management of land and water resources, a programmatic approach, and the ecosystem approach (UNEP 2003).

The **UN Convention to Combat Desertification** (UNCCD) includes a reporting obligation and the preparation of national, sub-regional or regional action programmes for its implementation. As of December 2002, 185 countries worldwide had ratified the convention<sup>7</sup>.

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 in a growing economy (COM 2005 670).

**Main SEA Objectives (Resume):**

- Protection against erosion and pollution
- Reduction of the negative environmental impacts (e.g. land filling) generated by the use of natural resources in a growing economy

**Derived Guiding questions for the assessment:**

- Will the OP help to protect soil attributes?
- Will the OP have effects on the state of contaminated sites?
- Will the OP promote sustainable waste management with focus on avoiding waste dumping and reducing land filling?

## 4.3 Air, Climate

The United Nations Economic Commission for Europe (UNECE) has addressed via the **Convention on Long-range Trans-boundary Air Pollution** (CLRTAP) some of the major environmental problems of the region through scientific collaboration and policy negotiation. The aim of the Convention is that Parties shall endeavour to limit, gradually reduce and prevent air pollution including long-range trans-boundary air pollution (acidification, eutrophication and ground-level ozone). It has been extended by eight protocols that identify specific measures to be taken by Parties to cut their emissions of air pollutants. Parties develop policies and strategies to combat the discharge of air pollutants through exchanges of information, consultation, research and monitoring. The protocols furthermore 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).

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<sub>2</sub>, NO<sub>x</sub>, VOCs and NH<sub>4</sub>), but leaves it largely to the Member States to decide which measures to take in order to comply (2001/81/EC).

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). The **Air Quality Framework Directive** (COM 1996/62/EC) and its four Daughter Directives define an overall frame on ambient air quality assessment and management.

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 following emissions reductions from 1990 levels in Europe: 8 % (EU-15, Bulgaria, Romania, Slovakia, Slovenia), 6 % (Hungary), and 5 % (Croatia). (DECISION 280/2004/EC).

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<sup>7</sup> <http://www.unccd.int/>

Due to the **directive on the promotion of electricity produced from renewable energy sources (RES) in the internal electricity market**, the member states shall take appropriate steps to encourage greater consumptions of electricity from RES up to 22 % for EU-25 in the year 2010. The directive also includes national indicative targets (2001/77/EC).

The **Action Plan for Energy Efficiency** outlines a framework of policies and measures with a view to intensify the process of realising the over 20% estimated savings potential, equivalent to EUR 60 billion per year, in EU annual primary energy consumption by 2020 (COM 2006 545). The **Directive on the energy performance of buildings** builds on the target to improve energy efficiency as laid down in earlier directives and focuses to increase the energy performance of public, commercial and private buildings in all Member States (2002/91/EC).

Due to the **White Paper European transport policy 2010** a modern transport system must be sustainable from an economic and social as well as an environmental viewpoint. One of the results of the **Mid-term review of the EC's 2001 Transport White Paper** was that mobility must be disconnected from its negative side effects using a broad range of policy tools. The potential for technology to make transport more environmentally friendly must be enhanced, in particular in relation to greenhouse gas emissions. Furthermore, shifts to more environmentally friendly modes must be achieved where appropriate, especially on long distance, in urban areas and on congested corridors (COM 2001 370 and COM 2006 314).

The Parties, meanwhile all Carpathian Nations (Czech Republic, Hungary Poland, Romania, Serbia, Slovak Republic, Ukraine), of the **Carpathian Convention**<sup>8</sup> shall pursue a comprehensive policy and cooperate for the protection and sustainable development of the Carpathians (UNEP 2003). The parties shall promote cleaner production technologies, in order to adequately prevent, respond to and remediate industrial accidents and their consequences, as well as to preserve human health and mountain ecosystems. The Parties shall pursue policies aiming at introducing environmentally sound methods for the production, distribution and use of energy, which minimize adverse effects on the biodiversity and landscapes, including wider use of renewable energy sources and energy-saving measures, as appropriate.

**Main SEA Objectives (Resume):**

- Reduction of emission of GHG and emissions responsible for acidification, eutrophication and ground-level ozone
- Strengthening of renewable energy sources
- Improving energy efficiency and realising estimated energy saving potentials
- Force to sustainable mobility and transport systems

**Derived Guiding questions for the assessment:**

- Will the OP lead to reduction of air pollutants?
- Will the OP lead to reduction of GHG?
- Will the OP increase energy efficiency?
- Will the OP change the role of renewable energy sources?
- Will the OP lead to reduction of transport related emissions?

<sup>8</sup> also <http://www.carpathianconvention.org/status.htm>

## 4.4 Population, Human Health

The European Commission adopted in 2003 an **Strategy on Environment and Health**, with the overall aim to reduce diseases caused by environmental factors in Europe. This was followed up by the **Environment and Health Action Plan 2004-2010** which proposes an Integrated Information System on Environment and Health as well as an coordinated approach to Human Bio-monitoring between Member States to render the assessment of the environmental impact on human health more efficient. (COM 2003 338).

One major target of the **6<sup>th</sup> 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 the purpose of the **Directive on Environmental Noise** (2002/49/EC), in matters of the assessment and management of environmental noise. But also Emissions caused by traffic and industries have a high impact on human health. Based on harmonised indicators “strategic noise maps” major roads, railways, airports and agglomerations shall be drawn and action plans to reduce noise developed<sup>9</sup>.

### **Main SEA Objectives (Resume):**

- Reduction of diseases caused by environmental factors
- Reduction of the quantity of people exposed to permanent noise

### **Derived Guiding questions for the assessment:**

- Will the OP support endeavours to reduce environmental related health risks?
- Will the OP catalyse the reduction of the share of population exposed to noise?

## 4.5 Fauna, Flora, Biodiversity

The **UN-Convention on Biological Diversity** has set targets to be achieved by 2010 at the global level. In the mission statement (COBD VI/26), Parties committed themselves to a more effective and coherent implementation of the three objectives of the Convention, to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on earth. One target of the **European strategy for sustainable development** (Kiev resolution on biodiversity) is to decrease the loss of biodiversity by 2010 (COM 2001 264), also included in the Communication from the Commission “Halting Biodiversity Loss - and beyond. Sustaining ecosystem services for human well-being” (COM 2006 216). The protection and reconstitution of natural systems to maintain the variety of species is also an objective of the **6<sup>th</sup> EAP** as well as the **European Community biodiversity strategy** (COM 1998 42).

After the enlargement of the EU the nature conservation legislation - the "**Birds Directive**" (79/409/EEC) and the "**Habitats Directive**" (92/43/EEC) - have to be applied to a much larger territory. These directives are the legislative framework for protecting and conserving the wildlife and habitats in the EU, because member states are forced to designate protected areas within the **Natura 2000** network. With regard to time management objectives for all sites should be agreed and instigated by 2010 (EEA 2005).

<sup>9</sup> <http://ec.europa.eu/environment/noise/home.htm>

The European Union is a signatory party to the **Cartagena Protocol on Biosafety**<sup>10</sup>, which seeks to protect biological diversity from the potential risks posed by living modified organisms resulting from modern biotechnology.

The Parties of the **Carpathian Convention**<sup>11</sup> (Art. 4) shall pursue policies aiming at conservation, sustainable use and restoration of biological and landscape diversity throughout the Carpathians. The Parties of the Carpathian Convention (Art. 8) shall pursue policies of sustainable transport and infrastructure planning and development, which take into account the specificities of the mountain environment, by taking into consideration the protection of sensitive areas, in particular biodiversity-rich areas, migration routes or areas of international importance, the protection of biodiversity and landscapes, and of areas of particular importance for tourism. The Parties shall take appropriate measures to ensure a high level of protection and sustainable use of natural and semi-natural habitats, their continuity and connectivity, and species of flora and fauna being characteristic to the Carpathians, in particular the protection of endangered species, endemic species and large carnivores. The Parties shall cooperate in establishing and supporting a Carpathian Network of Protected Areas, as well as enhance conservation and sustainable management in the areas outside of protected areas.

**Main SEA Objectives (Resume):**

- Halting the loss of biodiversity by 2010
- Protection and reconstitution of natural habitats and ecologically important areas to maintain the variety of species

**Derived Guiding questions for the assessment:**

- Does the OP support the EU objective to stop the loss of biodiversity?
- Will the OP improve the quality and/or quantity of protected areas, especially the Natura 2000 network ?

## 4.6 Landscape and Cultural Heritage<sup>12</sup>

The **European Landscape Convention**<sup>13</sup> (ECL) is part of the Council of Europe's work on natural and cultural heritage, spatial planning, environment and local self-government. The aims of the Convention are to promote European landscape protection, management and planning, and to organise European cooperation on landscape issues.

A limitation of rural-urban land conversion is one of the aims of the **6th EAP** and the thematic documents related to it, such as the **Thematic Strategy on the Urban Environment** (COM 2005 718), **European Union Strategy for Sustainable Development** (COM 2001 264) and the **Review of the EU Sustainable Development Strategy** (COUNCIL 10117/06).

The United Nations Educational, Scientific and Cultural Organization (UNESCO) encourage countries to sign the **World Heritage Convention** and to ensure the protection of their natural and cultural heritage and to nominate sites within their national territory for inclusion on the World Heritage List (UNESCO 1972). Other relevant conventions of the UNESCO aimed at the protection of cultural heritage are the **Convention on the Protection and**

<sup>10</sup> <http://www.biodiv.org/biosafety/default.aspx>

<sup>11</sup> <http://www.carpathianconvention.org/status.htm>

<sup>12</sup> incl. Architectural and Archaeological Heritage and Material Assets

<sup>13</sup> [www.coe.int/t/e/cultural\\_co%2Doperation/environment/landscape/presentation/3\\_Aims/index.asp#TopOfPage](http://www.coe.int/t/e/cultural_co%2Doperation/environment/landscape/presentation/3_Aims/index.asp#TopOfPage)

**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).**

On 18/01/2006 the European Commission **proposed a directive on the assessment and management of floods**. Its aim is to reduce and manage the risks that floods pose to human health, the environment, infrastructure and property. Under the proposed directive member states would first need to carry out a preliminary assessment to identify the river basins and associated coastal areas at risk of flooding. For such zones they would then need to draw up flood risk maps and then flood risk management plans focused on prevention, protection and preparedness (COM 2006 15).

The Parties of the **Carpathian Convention** (Art. 3) shall apply the approach of the integrated land resources management, by developing and implementing appropriate tools, such as integrated management plans, relating to the areas of this Convention. Moreover (Art. 11) they shall pursue policies aiming at preservation and promotion of the cultural heritage and of traditional knowledge of the local people, crafting and marketing of local goods, arts and handicrafts. The Parties shall aim at preserving the traditional architecture, land-use patterns, local breeds of domestic animals and cultivated plant varieties, and sustainable use of wild plants in the Carpathians (UNEP 2003).

The **Alpine Convention**<sup>14</sup> is a framework agreement for the protection and sustainable development of the Alpine region and signed by Austria, France, Germany, Italy, Switzerland, Liechtenstein, Slovenia and the EU. The Contracting Parties shall pursue a comprehensive policy for the preservation and protection of the Alps by applying the principles of prevention, the 'polluter pays' principle and cooperation, after careful consideration of the interests of all the Alpine States, their Alpine regions and the EU, and through the prudent and sustained use of resources. The thematic protocols include binding guidelines for Spatial Planning, Conservation of Nature and the Countryside, Mountain Farming, Mountain Forests, Soil conservation, Tourism, Energy, Transport.

**Main SEA Objectives (Resume):**

- Protection of natural and cultural heritage
- Conservation of variety, uniqueness of landscape as a source of biodiversity and recreation
- Support sustainable urban and regional development and limitation of rural-urban land conversion
- Protection against natural hazards (e.g. flood risk)

**Derived Guiding questions for the assessment:**

- Will the OP facilitate protection of cultural heritage?
- Will the OP support conservation or reconstruction of valuable cultural landscape?
- Will the OP support sustainable urban and regional development?
- Will the OP influence the demand of land take for urban development?
- Will the OP enhance protection against natural hazards?

<sup>14</sup> <http://www.convenzionedellealpi.org/>

## 5 CURRENT SITUATION AND THE LIKELY EVOLUTION OF ENVIRONMENTAL CHARACTERISTICS

The evaluation of the current situation and the likely evolution of environmental characteristics reflects a consolidated overview and main topics for the programme area. Following elaborations base on two publications of the European Environmental Agency: “3<sup>rd</sup> Environmental Assessment 2003” (EEA 2003) and “European Environment — State and Outlook 2005” (EEA 2005), which were supplemented by further literature with trans-national approach (reports of UN-ECE, OECD, World Bank, etc.).

The qualitative compilation points out the relevant environmental problems with relevance to objectives, priorities and areas of intervention of the OP and provides a clear overview of the main issues<sup>15</sup>. The outline of the likely evolution of the trends without implementation of the programme (“zero-option”) represents the baseline for the overall assessment of the operational programme.

### 5.1 Water

#### **Water - State of the environment and trends (summary):**

Problems in water quality still persist particularly in East European countries. The pollution tends to be localised in hot spots downstream of cities, industrialised and agricultural areas and mining regions. There has been no substantial improvement in the nitrate situation in European groundwater. To provide drinking water in sufficient quality and quantity efforts are still needed. In the CEE<sup>16</sup> countries only 25 % of the population (on average) is connected to wastewater treatment plants.

Water quality in general is most severely affected by organic and inorganic pollutants (pesticides, heavy metals etc.) from households, industry and agriculture. As point sources decline their impact on water quality, diffuse sources, particularly from agriculture, will dominate in future. In general, there has been no substantial improvement in the nitrate situation in European **groundwater** and hence nitrate pollution of groundwater remains a significant problem. Pesticides are causing groundwater quality problems in many European countries.

The **quality of river water** across the programme area shows improving general trend. Nevertheless pressures from agriculture, urbanisation, and tourism will lead to increasing water consumption. Canalised or regulated river areas enhance actual problems in the field of water management. Sustainable management will continue to be the dominant theme regarding water resources. Furthermore many member-states have not yet complied fully with the urban waste water directive. In CEE countries only 25 % of the population (on average) is connected to **wastewater treatment** plants. There are still many large cities that

<sup>15</sup> Description of state and trend of cross-cutting themes like transport, energy consumption, use of renewable energy sources, waste management and risk management are allocated to linked environmental issues (e.g. Energy to Air / Climate; Waste Management to Soil).

<sup>16</sup> Central and eastern Europe (CEE): Albania, Bosnia-Herzegovina, Bulgaria, Czech Republic, Croatia, Estonia, the Former Yugoslav Republic of Macedonia, Hungary, Latvia, Lithuania, Poland, Romania, Serbia and Montenegro, Slovak Republic, Slovenia, Cyprus, Malta and Turkey

discharge their wastewater nearly untreated. In general, it seems that countries that had significant industrial bases in the pre-1989 period still operate plants with technologies that cause high emissions. High emissions of organic pollutants into water are still registered in countries like Hungary, Slovenia, Bulgaria, Romania and Serbia.

Although discharges to **coastal areas** have decreased due to regulation like the urban waste water directive or the bathing waters directive, concentrations of nutrients particularly near river mouths or big cities are much higher than natural or background levels (Eutrophication). Data for the Black Sea indicate that riverine discharges are the largest sources of nitrogen and phosphorus. Around the Mediterranean Sea all coastal cities discharge their (treated or untreated) sewage to the sea and only 4 % have tertiary treatment, indicating that the nutrient input from this source may be high.

In southern and eastern countries of the programme area **water abstraction for agriculture** is the dominant water use. Abstraction for urban use and industry was relatively constant. Among new EU Member States and candidate countries, water use is expected to increase. Water shortages also continue to occur in some parts of southern Europe where there is a combination of low water availability during droughts or periods of low river flow and high demand, particularly from agriculture.

## 5.2 Soil

### **Soil- State of the environment and trends (summary):**

The major problems and important risks to soil and its capabilities are irreversible losses due to soil sealing and erosion, continuing contamination from local and diffuse sources, acidification, salinisation and compaction. Soil contamination from local sources, mainly waste disposal from municipal and industrial sources and industrial activities, is widespread in some parts of the programme area.

**Soil contamination** from local sources, mainly waste disposal from municipal and industrial sources and industrial activities, is widespread in the programme area. Hot spots can be identified in the Po valley (Italy), the Black triangle (Slovakia) and at a great number of military sites that stem from past activities and poor management practices in Eastern Europe. In Bosnia and Herzegovina 25 % of the ploughed, arable land has been damaged due to warfare and land mining.

Land filling is still the predominant **waste treatment** option in most countries throughout Central and Eastern Europe. In the new Member States, where major efforts and investments have been made to align with the EU acquis, the situation is evolving rapidly but still dominated by landfill. There are wide discrepancies between Member States, ranging from those with low recycling rates (90% landfill, 10 % recycling and energy recovery) to those which act in line with sustainable waste management principles (10 % landfill, 25 % energy recovery and 65 % recycling) (COM 2005 666).

**Municipal waste**, to be handled as an indicator for describing the material intensity of economies in Europe, continues to increase. The collection of municipal waste varied in 2003 considerably between 612 kg/capita and 319 kg/capita. Municipal waste accounts for approximately 14 % of total waste arising in Western Europe and 5 % in CEE. The EU target to reduce municipal waste generation to 300 kg/capita/year by 2000 was not achieved.

Particularly in some of the East Europe Countries **sealing due to compaction** by the use of heavy weight land machines leads to loss of fertile soil. Sealing and soil degradation through tourism activities (site development, transport infrastructure, etc.) is a further cause along the coasts of the Mediterranean sea.

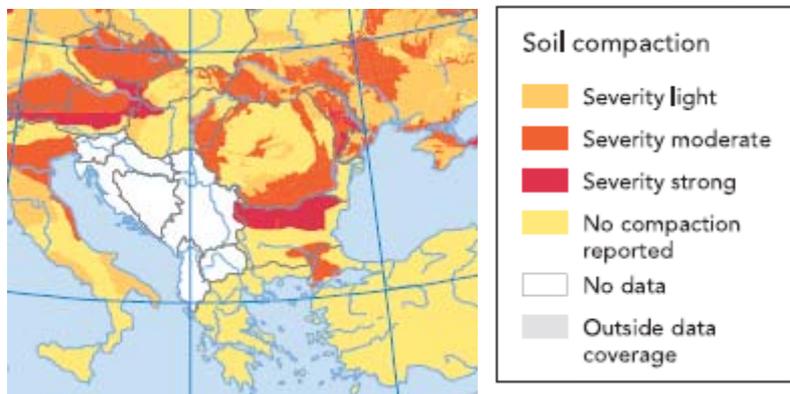


figure 5-2: Degree and extent of soil compaction in Europe (EEA 2003)

Moderate to high **salinisation** is affecting agricultural soils in the Mediterranean region and in eastern Europe, mainly as a result of inappropriate irrigation systems. For example, salinisation affects 16 million ha or 25 % of irrigated cropland in the Mediterranean.

About 25 % of Europe's land is thought to be at some risk of **erosion**, with the greatest problems occurring around the Mediterranean and Black Sea, and in the Balkan Peninsula. Countries with the largest areas at risk include Greece, Hungary, Italy, and Moldova. In more arid climates erosion also increases risk of **desertification**. Droughts are often broken by intense storms that can wash away large amounts of soil. Damage due to acidification bases on the loss of geochemical structure of the soil will show its effects in a long term view.

## 5.3 Air, Climate

### **Air, Climate- State of the environment and trends (summary):**

Development of the emissions of several air pollutants (incl. GHG) are closely linked to activities in the economic sectors of energy production, industry, housing and transport. Technological improvements to reduce emissions are overridden by increasing energy and transport demand. Although energy intensity decreased in the last ten years, final energy demand is still growing. Final energy consumption in the programme area increased by about 4 % d the period 1990 to 2002.

In central and eastern Europe emissions of **air pollutants** (acidifying and eutrophying substances and ground-level ozone precursors) have fallen substantially since 1990 as a result of economic change.

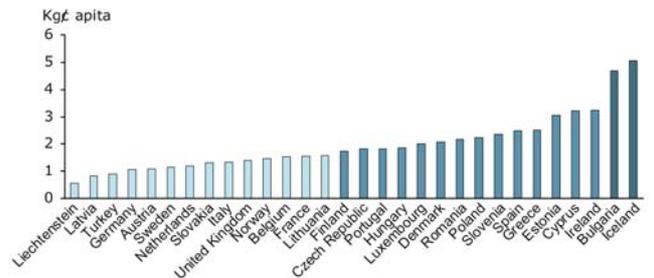
Nevertheless air pollution remains a serious problem in most cities and for their population. Although short-term peak concentrations are falling long-term average ground-level ozone concentrations continue to increase and exposure to particulate matter (PM10) may become the largest potential health problem. Transport is the major cause of air pollution problems in

Western Europe. Technology progress opposes a rapid increase in demand of road transport.

Reductions in western Europe have resulted mainly from fuel switching, flue-gas treatment and the introduction of three way catalysts for cars. In values per capita the western part of the programme area features lower and the eastern part features higher emissions (see figure beside, EEA 2005).

Urban areas will also have to face pollution due to **particulate matter**. Even though further measures (e.g. filters in diesel cars) will follow, many urban areas in the EU-25 will continue to have unsafe concentrations of particulates resulting from increasing road transport but also from other sources such as small combustion.

**Figure 1 Emission of acidifying substances per capita, 2002**



**Note:** SO<sub>2</sub>, NH<sub>3</sub> and NO<sub>x</sub> (expressed as NO<sub>2</sub>); The factors are NO<sub>x</sub> 0.021, SO<sub>2</sub> 0.031 and NH<sub>3</sub> 0.058. Results are expressed in acidification equivalents.

Emissions of the **precursors of ozone** have declined by a third since 1990 and most countries should meet EU emissions ceilings. Main reason is the closing of old facilities in the eastern region due to the economic change. Unfortunately the complex chemical environment of urban smog means that, despite declining emissions of ozone precursors, annual ozone concentrations have increased slightly. Particularly regions in southern Europe like Albania, Macedonia and Greek islands have to face the appearance of summer ozone.

It is a fact that European **climate** is changing. Over the past 100 years the mean temperature has increased by about 1,2°C, the 1990s have been the warmest decade for 150 years. Global and European mean temperatures are projected to increase by 1,4–5,8°C between 1990 and 2100, with larger increases in eastern and southern Europe in most projections (inter alia Italy, Greece and Ukraine). The proposed EU target to limit temperature increase to a maximum of 2°C above pre-industrial levels will be exceeded during this century. During the last century sea level rose by 0,1–0,2 meters. In southern Europe and most of the countries of the Caucasus and Central Asia, precipitation in summer is projected to decrease by up to 5 % per decade, while the winters may become wetter.

Between 1990 and 2004, the **Greenhouse gas emissions** of member states being part of programme area (Austria, Greece, Hungary, Italy, Slovak Rep., Slovenia) decreased in total by -4 % (EU-15: -0,9 %). In 2002 GHG emissions of Bulgaria and Romania were far below their Kyoto-targets (reduction 8 %). Also Croatia has reduced GHG emissions since 1990.<sup>17</sup> The latest projections by Member States show that with only existing policies and measures – those already implemented – future EU-15 emissions are expected to be just 0.6% below base year levels by 2010. Emissions aggregated from all new member states (excluding

<sup>17</sup> [http://unfccc.int/files/essential\\_background/kyoto\\_protocol/status\\_of\\_ratification/application/pdf/kpstats.pdf](http://unfccc.int/files/essential_background/kyoto_protocol/status_of_ratification/application/pdf/kpstats.pdf). As non member states of the programme area Albania, Bulgaria, Romania have ratified the Kyoto-protocol, also Croatia has signed the Protocol. The other non-EU countries of the programme area (Bosnia and Herzegovina, Macedonia, Moldova, Serbia and Montenegro) haven't signed the Kyoto-protocol until the end of October 2006.

Cyprus and Malta for which data were not available) are projected to increase after 2004 but will still be 12% below 1990 by 2010 (COM 2006 658).

Burning fossil fuels remains the number one source of GHG emissions. Decreases from energy industries, the industry sector, agriculture and waste were partly offset by increases from transport. In some states the forestry sector acts as a sink for CO<sub>2</sub> and can help to full fill Kyoto-targets.

One key priority connected to climate change is the role of **renewable energy sources**. In 2005, the share of renewable energies in primary energy consumption in the EU-25 was 6,4% (in 2002: 5,7% - see figure below). The share of **renewable energies in gross electric consumption** in EU-25 has reached 14,0 % by 2005<sup>18</sup>. However, the extrapolation scenarios propose that, although progress towards meeting the targets has begun, the 2010 target for EU-25 of 21 %<sup>19</sup> will not be achieved under current policies and measures. Instead, currently implemented policies will probably result in a share of between 18% and 19% in 2010 (COM 2004 366).

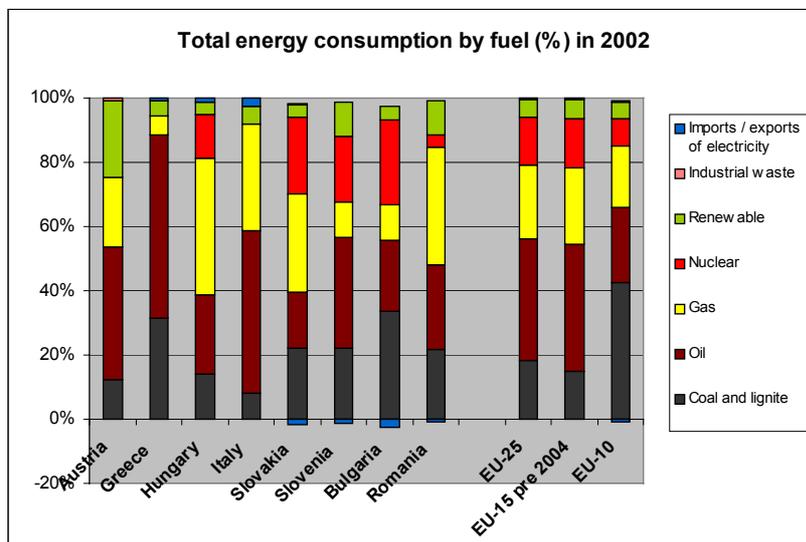


figure 5-1: Total energy consumption by fuel (%) in 2002 (EEA, 2005)

**Final energy consumption** in the programme area increased by about 4 % over the period 1990 to 2002 (EU-25: increase about 7,4 %). In all member states of the programme area the energy intensity (total energy consumption per GDP) showed decreasing trends, as result of economic change (EEA 2005). Transport, industry and household contribute comparable shares, but **Transport** has been the fastest-growing sector within final energy consumption since 1990.

In most of the countries in the programme area freight and passenger transport demand has increased (see figure below). Data show **increasing air emissions** arising from freight and passenger transport.

<sup>18</sup> Observ'ER, 2006 European Barometer of Renewable Energies, 6<sup>th</sup> Report, 2006

<sup>19</sup> [http://ec.europa.eu/energy/green-paper-energy/doc/2006\\_03\\_08\\_gp\\_factsheet\\_en.pdf](http://ec.europa.eu/energy/green-paper-energy/doc/2006_03_08_gp_factsheet_en.pdf)

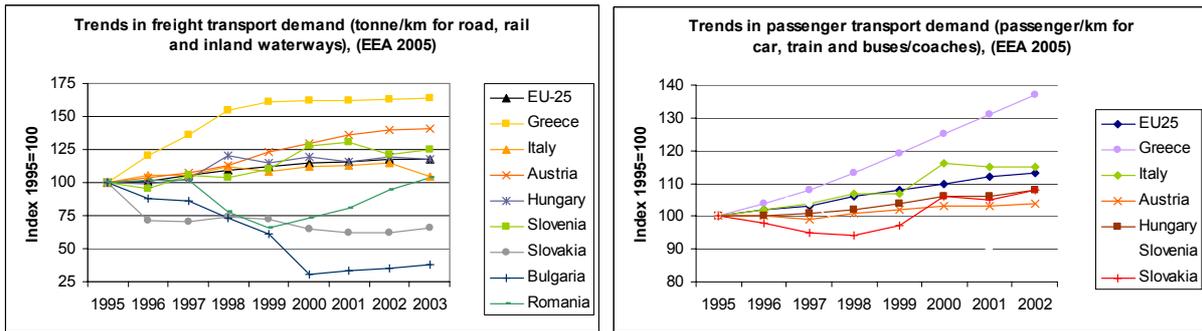
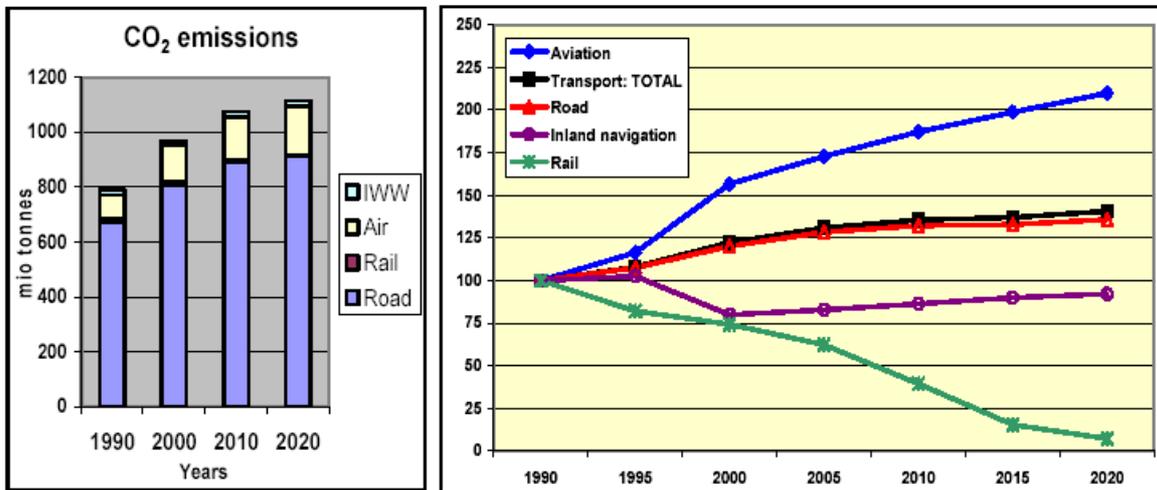


figure 5-3: Trends in freight transport demand (tonne/km for road, rail and inland waterways) and passenger transport demand (passenger/km for car, train and buses/coaches); index 1995 = 100 (EEA, 2005)

Across the programme area most important transport mode is the road. In the western parts it is still more dominant than in the eastern parts. Transport volumes in Eastern European Countries shifted dramatically from rail (common transport) to road and air during the 1990ies. The mid term review of the Transport White Paper proposed increasing CO<sub>2</sub>-emissions of total transport demand (see figure below). While emissions via aviation and road will increase, CO<sub>2</sub>-emissions of transport by rail will decrease (COM 2006 314).

figure 5-4: Expected evolution of CO<sub>2</sub> emissions from transport mode in EU-25 (1990=100) (COM 2006 314)



## 5.4 Population, Human Health

### **Population, Human Health - State of the environment and trends (summary):**

Several diseases are linked directly or indirectly to environmental issues. Particularly air pollutants and noise were identified as important factors influencing human health. Disturbance by noise is mainly effected by increased transport activities.

Human health is connected to the state of environment. Environmental factors cause for one quarter to one third of the burden of disease appears. Exposure to environmental hazards varies markedly between different groups and areas, with children and the elderly being particularly at risk.

Development in protecting environment brought improvements in European levels of air and water pollution. Transport continues to be a significant contributor to health effects in Europe from accidents, air pollution and noise.

Road traffic is the predominant source of human exposure to noise, except for people living near airports and railway lines. As a result more than 120 million people in the EU are exposed to notably noise levels on the front facade of their houses and flats<sup>20</sup>.

Impacts on the state of health from other environmental factors and exposures (e.g. those resulting from climate change and chemicals in the environment) are a result of interactions between the environment and humans. Allergies, Asthma and other respiratory diseases cause hospitalization throughout Europe. Asthma effects app. 14 % of particularly Western European children. Long-term exposure to air pollution in large European cities is estimated to cause around 60.000 deaths per year.<sup>21</sup>

## 5.5 Fauna, Flora, Biodiversity

### **Fauna, Flora, Biodiversity - State of the environment and trends (summary):**

The diversity of the natural heritage is one of the biggest assets of the programme area. To protect biodiversity the Natura 2000 network has been established in EU member states in the last ten years. 16,5 % of the land are covered by sites of Community interest. But still the loss of biodiversity did not come to a halt, as much of the threatened wildlife is found outside protected areas.

The programme area has been under human influence for long time, nevertheless semi natural areas can be found. Many species still remain threatened on European territory, including 42 % of native mammals, 15 % of birds, 45 % of butterflies, 30 % of amphibians, 45 % of reptiles and 52 % of freshwater fish. Eastern European countries have wildlife resources and biological diversity of global significance that have nearly vanished from Western Europe but are confronted with enormous problems in monitoring and controlling the exploitation of their wild fauna and flora.

The diversity of the natural heritage is one of the biggest assets of the programme area with a view to sustainable development. Most valuable natural ecosystems are found in border

<sup>20</sup> [http://themes.eea.europa.eu/Environmental\\_issues/noise](http://themes.eea.europa.eu/Environmental_issues/noise)

<sup>21</sup> [http://ec.europa.eu/environment/health/pdf/facts\\_and\\_figures.pdf](http://ec.europa.eu/environment/health/pdf/facts_and_figures.pdf)

areas (e.g. between former COMECON-states and western countries), where pressure for economic development has been limited over a long period of time.

To halt the loss of biodiversity by 2010 in an appropriate manner EU member states are establishing a system of protection under the **Natura 2000** network. It is building on special protection areas (SPAs), designated on the “birds directive” and proposed sites of Community interest (pSCIs), that safeguard habitats under the “flora-fauna-habitat directive”. 16,5 % of the programme countries (Austria, Greece, Hungary, Italy, Slovenia, Slovak Republic) area has been designated under Natura 2000 network so far (Update of June 2006) with different situation in the member states.

figure 5-5: Natura 2000 protected Areas in EU-member states of South East Europe<sup>22</sup>

State	pSCI (under FFH directive)				SPA (under birds directive)			
	No.	Land [km <sup>2</sup> ]	[%]	Marine [km <sup>2</sup> ]	No.	Land [km <sup>2</sup> ]	[%]	Marine [km <sup>2</sup> ]
Austria	164	8.884	10,6%		94	9.275	11,1%	
Greece	239	21.643	16,4%	5.998	151	13.136	10,0%	567
Hungary	467	13.929	15,0%		55	13.519	14,5%	
Italy	2.255	41.750	13,9%	2.227	503	24.469	8,1%	396
Slovenia	259	6.359	31,4%	1	27	4.653	23,0%	3
Slov. Rep.	382	5.739	11,8%		38	12.295	25,2%	
SUMME	3.766	98.304	16,5%	8.226	868	77.347	15,3%	966
EU	20.789	481.298	12,2%	77.784	4.540	444.368	9,6 %	64.754

Biodiversity and natural heritage are affected by adverse impacts from industrialisation, intensive agriculture, transport infrastructure, urbanisation and growing tourism activities. Many species still remain threatened, due to the low implementation of the Natura 2000 network and to the fact that much of Europe's wildlife is to be found outside protected areas. 35 % of the areas listed as pSCIs are agricultural habitats. Therefore development of agriculture (e.g. intensification, abandonment, new biotechnologies etc.) as well as possible extension of transport networks will threaten and influence biodiversity in these areas.

After the political changes in some parts of the programme area, increasing urbanisation will most adversely affect the coastal and littoral ecosystems, which are more ecologically fragile. Some locations are severely impacted by human activities which are negatively affecting both human health and degrading the environment.

## 5.6 Landscape and Cultural Heritage

### Landscape and Cultural Heritage - State of the environment and trends (summary):

South-East Europe has to face consequences that follow dispersal and sprawl of urban settlements. Future accessibility patterns will influence changes to urban development and landscape. Flood events and coastal development are challenges for spatial planning and risk management, which directly impacts material assets as well. Cultural landscape and heritage sites represent part of Europe's identity, the integration of these values into economic activities is just at the beginning.

<sup>22</sup> [http://ec.europa.eu/environment/nature/nature\\_conservation/useful\\_info/barometer/barometer.htm](http://ec.europa.eu/environment/nature/nature_conservation/useful_info/barometer/barometer.htm)

In South East Europe the share of population that lives in urban areas (64%) is relatively low compared to that of the EU-25 (76%). This is partly due to low level of urbanization in the Bulgaria, Romania and Western Balkan countries, where a large segment of the population lives in rural and semi-urban areas. But there is a clear trend of suburbanisation in all urban regions from the beginning of the 1990ies. The adverse effects of suburbanisation are increasingly apparent, segregation is growing.

The Alps and Carpathians in particular, but also some border regions show a potential of valuable natural landscape, which has been transformed to cultural landscape by means of traditional agriculture methods and small scale settlement structures. In South East European countries the number of cultural and natural heritage with mixed properties is 111 and so more than 13 % of the actual UNESCO World Heritage List<sup>23</sup>.

Future changes to landscape patterns - as a result of urban areas extension - will highly depend on the development of agriculture and on accessibility potential of economic centres. The concept of accessibility is based on the assumption that the attraction of a destination increases with size (expressed via population or GDP) and declines with distance, travel time or cost. Following this concept the Eastern part of SEE Countries show lower accessibility compared to more western or southern areas (see figure below, EPSON 2004). The density of motorways and expressways by population is very low in the Eastern Europe area compared with the European average.

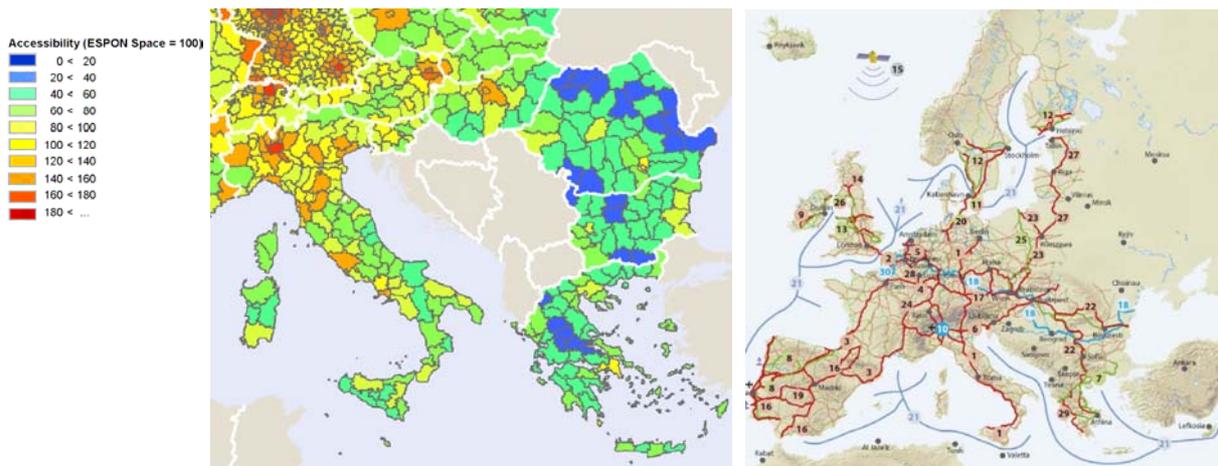


figure 5-6: Potential multimodal accessibility 2001 (ESPON 2004); Map of the 30 Priority Axis and Projects (DG of Energy and Transport, 2006)<sup>24</sup>

**Pressure on land take, urban sprawl and loss of traditional landscape** will effect particularly those areas in South East Europe, which will gain higher accessibility potential in near future. The extension of high-speed transport infrastructure, but also extensions of airports and sea ports will have crucial influence on urban development. Some of the European corridors related to the trans European network including the 30 priority projects will affect the programme area's landscape (see figure above).

As one result of changing land use patterns and high percentage of sealed surfaces, increasing **number of flood events** were registered in the last decade: Between 1998 and 2004, Europe suffered from damaging floods, including the catastrophic floods along the

<sup>23</sup> <http://whc.unesco.org/en/list/>

<sup>24</sup> [http://ec.europa.eu/ten/transport/priority\\_projects\\_minisite/map\\_en.htm](http://ec.europa.eu/ten/transport/priority_projects_minisite/map_en.htm)

rivers Danube in summer 2002. Since 1998 all floods registered in Europe caused about 700 fatalities, the displacement of about half a million people and insured economic losses totalling at least € 25 billion. Flood events during summer 2005, in Austria, Bulgaria and Romania and elsewhere, has pushed these figures even higher (COM 2006 15). Scale and frequency of floods are likely to increase in the future as a result of climate change, inappropriate river management and construction activities in flood risk areas.

The flow of Danube river and other major river systems has become more extreme in Central und East Europe, with **higher floods and worse fluvial droughts**. The straightening and dredging of the river bed has increased channel erosion, deepening river beds, lowering water levels and breaking the river's contact with its backwaters. The results led to falling water tables in surrounding aquifers and extensive siltation of surviving water bodies on the floodplain.

The potential of other **natural or man-made hazards** is rising as well. While in central or northern areas of Europe more rainfall had been observed in the past few years the Mediterranean region will have to face less snow- and rainfalls in the future which will lead to higher risk of drought and forest fire. More extreme weather events will cause a real threat to human health, economic well-being and material assets.

## 6 ENVIRONMENTAL ASSESSMENT AND MEASURES TO MITIGATE ADVERSE EFFECTS ON THE ENVIRONMENT

### 6.1 Introduction

The methodical approach follows the general question:

**“Is there any significant positive and/or negative effect on environmental issues in the programme area due to possible actions related to programme priorities and areas of intervention pointed out in the OP?”**

For each area of intervention possible effects on the relevant environmental issues were analysed, following the “guiding questions” (see chapter 4.2.3).

- If the area of intervention will probably contribute in a positive way to improve environmental trends in the programme area as identified in chapter 5, the result of the assessment is positive (+).
- If a negative environmental trend, as identified in chapter 5 could be enhanced by possible outcomes of the area of intervention or existing environmental assets of the programme area are effected in a negative way, the result of the assessment is negative (-).
- If a area of intervention effects an environmental issue in a positive as well as in a negative way, the overall assessment will be neutral (+/-).
- In some cases, the assessment of possible effects on environmental issues could not be performed due to the abstract character of information in the operational programme (signed with “/”).

Legend for the assessment:

+	possible positive effects
-	possible negative effects
+/-	possible positive and negative effects
o	Minor effects or Not applicable (no relevant impact)
/	assessment is not possible due to lack of information in the OP

Additionally, measures to prevent, reduce and as fully as possible offset any significant adverse effects of implementing the operational programme on the environment are proposed. Furthermore suggestions for reformulations of priorities / areas of intervention or other measures of programme implementation (e.g. project selection criteria) have been complemented.

## 6.2 Assessment of Environmental Effects<sup>25</sup>

### 6.2.1 Priority axis (1): Facilitation of innovation and entrepreneurship

<b>P (1): Facilitation of innovation and entrepreneurship</b>			
<b>Area of intervention (1.1): Develop technology &amp; innovation networks in specific fields</b>			
<b>Assessment:</b>			
Water +	Air, Climate +	Fauna, Flora, Biodiversity +/-	
Soil +	Population, Human health +/-	Landscape and Cultural Heritage 0	
<b>Comments:</b>			
<p>Creation or restructuring of technology &amp; innovation-oriented networks will enhance regional knowledge about how to implement best available technologies to improve environmental conditions. This area of intervention will therefore have positive impacts on issues like water, air, climate and soil in a mid-term view, especially if the development of skills and competences in fields of “environmental technologies” including application of results will be successful in the productive sector.</p> <p>Negative impacts have to be determined if innovation processes will support application of “high risk technologies” (e.g. nuclear energy production, biotechnologies including gen manipulated seeds to be used in agriculture) without reflecting indirect impacts on biodiversity and human health.</p>			
<b>Suggestions for reformulations, possible measures to be implemented into the OP:</b>			
<p>The area of intervention should integrate activities in the field of “risk research &amp; assessment” to identify possible negative effects on environmental issues as result of technological innovation.</p> <p>Moreover, the area of intervention should include the issue of “green procurement systems” for public and private sector</p>			
<b>P (1): Facilitation of innovation and entrepreneurship</b>			
<b>Area of intervention (1.2): Develop the enabling environment for innovative entrepreneurship</b>			
<b>Assessment:</b>			
Water 0	Air, Climate 0	Fauna, Flora, Biodiversity 0	
Soil 0	Population, Human health 0	Landscape and Cultural Heritage 0	
<b>Comments:</b>			
<p>Preparation, creation or restructuring of innovation networks and promotion activities could probably support the implementation of best (or almost best) available technologies in public and private sector. But it is still not clear if there are some noticeable effects on environmental issues as result of improved framework conditions for innovative entrepreneurship in SEE.</p>			
<b>Suggestions for reformulations, possible measures to be implemented into the OP:</b>			
<p>More details on special sector demands for the transnational diffusion of innovation and other appropriate “soft measures” for SME should be implemented, maybe as one of the possible activities to be supported by the programme.</p>			

<sup>25</sup> This assessment is based on the operational programme, version 2-1, 30 January 2007.

<b>P (1): Facilitation of innovation and entrepreneurship</b>		
<b>Area of intervention (1.3): Enhance the framework conditions and pave the way for innovation</b>		
<b>Assessment:</b>		
Water ○	Air, Climate ○	Fauna, Flora, Biodiversity ○
Soil ○	Population, Human health ○	Landscape and Cultural Heritage ○
<b>Comments:</b>		
<p>The overall conditions to improve environmental issues will be – on a long-term perspective - positively influenced by support of public awareness activities, which open the general social climate for new developments and tackle information lacks in the area of technology and innovation (including ICT application).</p>		
<b>Suggestions for reformulations, possible measures to be implemented into the OP:</b>		
<p>Information campaigns or activities to support the image of technological innovation should be accompanied by awareness rising activities and open-minded public discussion about possible environmental risks / social impacts of new technologies.</p>		

## 6.2.2 Priority axis (2): Protection and improvement of the environment

<b>Priority axis (2): Environment</b>		
<b>Area of intervention (2.1): Improve Integrated Water Management and Transnational Flood Risk Prevention</b>		
<b>Assessment</b>		
Water +	Air, Climate ○	Fauna, Flora, Biodiversity ○
Soil ○	Population, Human health +	Landscape and Cultural Heritage +
<b>Comments:</b>		
<p>Integrated development programmes of river basins, catchments areas and coastal areas will have positive impact on the main European rivers like Danube, Po and Tisza as well as on areas along the coast of Adriatic, Aegean and Black Sea.</p> <p>The transnational cooperation should generate concrete projects, which will address the need for common actions in the management of river basins coastal areas, seas, lakes and fresh-water resources. The implementation of alternative methods of water quality protection and wastewater treatment systems (e.g. small scale sewage treatment plants, based on vegetation systems) is needed and will effect the situation positively.</p>		
<b>Suggestions for reformulations, possible measures to be implemented into the OP:</b>		
<p>Integrated development plans of river basins and coastal areas should only be supported, if they include interdisciplinary strategies, e.g. land use policies (zoning), avoidance of compaction or sealing of land surface, taking into account the hydrological impacts of climate change.</p> <p>Know how transfer and awareness rising about efficient water use strategies &amp; technologies should be supported, particularly addressing water management enterprises / public equivalent bodies and economic sectors like agriculture, tourism, industrial processing, housing &amp; construction.</p>		

<b>Priority axis (2): Environment</b>		
<b>Area of intervention (2.2): Improve prevention of environmental risks</b>		
<b>Assessment</b>		
Water +	Air, Climate +	Fauna, Flora, Biodiversity +
Soil +	Population, Human health +	Landscape and Cultural Heritage +
<b>Comments:</b>		
<p>The implementation of transnational monitoring and alert systems on potential hazards like floods, forest fires, chemical and biological contamination of water, soil and air, industrial accidents, together with identification, assessment and mapping sources of contamination and of potential hazardous outflow, will reduce potential impacts on human health, biodiversity and other related issues.</p> <p>Transnational cooperation in the fields of risk prevention and action plans to manage cases of emergency will improve the framework conditions to reduce risk potentials.</p>		
<b>Suggestions for reformulations, possible measures to be implemented into the OP:</b>		
<p>This area of intervention should also address activities to strengthen transnational cooperation in awareness rising. It should support transnational policies to avoid new risk technologies including spatial development issues.</p> <p>Most of the valuable and sensitive ecosystems across the programme area are protected by various legal frameworks. However, some areas are still exposed to several risks due to intensive or irresponsible use. Sources of existing contamination and possible hazards should be identified, reflecting existing potentials and future projects (e.g. transport corridors, industrial facilities for energy production and/or waste treatment). Assessments for possible negative impacts on protected areas as well as on environmental issues in areas outside of protection regimes and human health should be supported.</p>		

<b>Priority axis (2): Protection and improvement of the environment</b>		
<b>Area of intervention (2.3): Promote co-operation in management of natural assets and protected areas</b>		
<b>Assessment</b>		
Water +	Air, Climate 0	Fauna, Flora, Biodiversity +
Soil +	Population, Human health +	Landscape and Cultural Heritage +
<b>Comments:</b>		
<p>Positive effects on all environmental issues are expected, because activities will support and increase awareness for environment protection, also enhancing administrative capacities and management structures for co-operative management of environmental assets.</p> <p>Transnational co-operative management of sensitive natural resources will have positive effects on environmental issues Water, Fauna, Flora and Biodiversity and Landscape. These activities will help to establish improved protection regimes and support capacity building among management structures. By the same way they will create opportunities for regional economic development (e.g. sustainable rural / maritime tourism) without jeopardizing environmental assets.</p>		

**Suggestions for reformulations, possible measures to be implemented into the OP:**

Networking activities and transnational information platforms for public administration, NGOs and private sector enterprises working in protection and sustainable development of sensitive areas should be supported by this area of intervention.

Protected areas like Natura 2000 networks or national parks should be integrated into strategies for sustainable tourism development, including activities for transnational know how transfer, marketing and implementation of management tools.

Development of sustainable transport modes (e.g. energy efficient and low emission transport alternatives for visitors) should be integrated into this area of intervention, as they could be an integral part of co-operative transnational management of protected areas.

**Priority axis (2): Protection and improvement of the environment**

**Area of intervention (2.4): Promote energy & resource efficiency**

**Assessment:**

Water +/-	Air, Climate +	Fauna, Flora, Biodiversity +/-
Soil +/-	Population, Human health +	Landscape and Cultural Heritage -

**Comments:**

Promotion of renewable energy sources and increasing energy efficiency will reduce fossil energy demand and will have positive effects on environment issues like Air, Climate and Population / Human Health. On the other hand there are clear indications for negative impacts on Water and Landscape as a result of possible extended exploitation of hydroelectric power resources in the programme area. River basins may be effected negatively by new hydropower schemes. The assessment of positive / negative impacts on Fauna, Flora and Biodiversity depends on energy production projects on detail and can not be assessed on programme level, as effects on habitats can be very locally.

Agriculture is still an important economic sector in most parts of the programme area. Intensive cultivation of renewable energy plants, e.g. for the production of bio fuel, will possibly lead to negative side effects on Soil and Biodiversity. On the other hand, positive effects on Air, Water and Soil can be determined because this area of intervention could support the implementation of advanced emission control technologies in energy production, which will reduce direct emissions to Air, indirect emissions to Water and Soil.

**Suggestions for reformulations, possible measures to be implemented into the OP:**

Policy development for sustainable energy supply & technology is necessary to achieve further reduction of emissions and avoid rising emission trends beyond the time frame of Kyoto-protocol (2012+). Implementation of long term strategies to manage effects of climate changes in agriculture, forestry systems as well as awareness rising activities to integrate environmental aspects into decision making procedures should be supported.

Know how transfer concerning possible impacts of different energy supply strategies (renovation of existing energy sources, installation of new systems like co-generation, biomass, wind, solar, geothermal, hydropower) should be part of this area of intervention.

Activities supporting the extended exploitation of hydropower resources should take into account the comprehensive approach of river basin development including ecological objectives, with basic conditions stipulated by the WF directive.

Know how transfer and capacity building in sustainable construction and renovation of buildings (residential, non-residential, public buildings) should be explicitly addressed by this area of intervention, including district heating systems, facility management and additional energy efficiency activities.

### 6.2.3 Priority axis (3): Improvement of the accessibility

<b>P 3: Improvement of the accessibility</b>			
<b>Area of intervention (3.1): Improve coordination in promoting, planning and operation for primary &amp; secondary transportation networks</b>			
<b>Assessment:</b>			
Water	+/-	Air, Climate	+/-
		Fauna, Flora, Biodiversity	-
Soil	○	Population, Human health	+/-
		Landscape and Cultural Heritage	-
<b>Comments:</b>			
<p>On the one hand, an improved coordination in promoting, planning and operation for primary and secondary transportation networks can lead to an extension of the physical infrastructure and consequently cause environmental impacts. Negative impacts on landscape (land take), biodiversity (fragmentation of habitats) and on the ecological systems of river systems (by the extension of waterways) have to be expected. Moreover, transportation networks on primary and secondary level will probably be developed in sparsely populated, set aside areas, which are usually of high value for flora, fauna and biodiversity.</p> <p>On the other hand, supporting the conduction of transnational environmental assessments (EIA-SEA) and transnational territorial impact assessments (TIA) will reduce negative impacts of future transport infrastructure networks. Generating viable alternatives to road transport on a transnational scale contributes to lower negative effects of road transport on the environment (e.g. air pollutants and CO<sub>2</sub>) and consequently minimizes environmental related health risks.</p> <p>As the programme does not clearly set any priority for the mode of transport infrastructure, the area of intervention can lead to negative as well as positive environmental effects.</p>			
<b>Suggestions for reformulations, possible measures to be implemented into the OP:</b>			
<p>Generally, environmental-friendly modes of transport (rail, ship) should preferably be supported. All projects which will support the enhancement of trans-European transport capacities should be accompanied by impact assessments, reflecting long-term effects on urban development, land take, air pollution and climate change.</p>			
<b>P 3: Improvement of the accessibility</b>			
<b>Area of intervention (3.2): Develop strategies to tackle the “digital divide”</b>			
<b>Assessment:</b>			
Water	○	Air, Climate	+
		Fauna, Flora, Biodiversity	○
Soil	○	Population, Human health	+
		Landscape and Cultural Heritage	○
<b>Comments:</b>			
<p>The area of intervention aims to enhance the accessibility to ICT (information and communication infrastructure), particularly in states and regions where market failure is evident or expected. Even if the potential to substitute physical transport by enhanced application of ICT is limited, to some extent the area of intervention can contribute to reduce the traffic volume, influencing air quality and human health positively.</p>			
<b>Suggestions for reformulations, possible measures to be implemented into the OP:</b>			
<p>In order to strengthen the possibility to reduce potential traffic by virtual communication the area of intervention should also support actions aiming at enabling access to public services and service of general economic interest (SGEI) by other means than physical transport (e.g. e-learning, video-conferencing etc.).</p>			

<b>P 3: Improvement of the accessibility</b>		
<b>Area of intervention (3.3): Improve framework conditions for multi modal platforms</b>		
<b>Assessment:</b>		
Water +/-	Air, Climate +	Fauna, Flora, Biodiversity +/-
Soil +	Population, Human health +	Landscape and Cultural Heritage +/-
<b>Comments:</b>		
<p>The area of intervention clearly aims at stimulating the shift to environmentally friendly transport systems and to a more efficient use of existing infrastructure. Promoting multimodality of transport systems and alternative transportation means (e.g. rail / sea compared to road) will reduce air pollutants and CO2 emissions as well as minimize environmental related health risks. They will reduce the demand for additional transnational land transport infrastructure and will therefore promote the protection of Soil, Fauna, Flora, Biodiversity and Landscape in an indirect way.</p> <p>On the other hand, inland waterway facilities, multi-modal terminals and “hinterland connections” will require some extension of physical infrastructure and will consequently cause environmental impacts. Negative impacts on landscape (land take), biodiversity (fragmentation of habitats) and on the ecological systems of river systems (by the extension of waterways) can not be excluded.</p>		
<b>Suggestions for reformulations, possible measures to be implemented into the OP:</b>		
<p>Transnational environmental assessments (EIA-SEA) and transnational territorial impact assessments (TIA) should also be conducted for concepts and action plans for the development of inland waterways, multi-modal terminals as well as secondary infrastructure (“hinterland connections”).</p> <p>In terms of promoting waterways the supported activities should take into account the comprehensive approach of river basin development including ecological objectives, with basic conditions stipulated by the WF directive.</p>		

## 6.2.4 Priority axis (4): Development of transnational synergies for sustainable growth

<b>P 4: Development of transnational synergies for sustainable growth</b>		
<b>Area of intervention (4.1): Tackling crucial problems affecting metropolitan areas and regional systems of settlements</b>		
<b>Assessment:</b>		
Water +	Air, Climate +	Fauna, Flora, Biodiversity ○
Soil +	Population, Human health +	Landscape and Cultural Heritage +
<b>Comments:</b>		
<p>This area of intervention will support public institutions of metropolitan areas to tackle economic, environmental, social and governmental problems to move towards sustainable urban development, particularly addressing (public) urban infrastructure, housing restructuring, urban revitalisation, rehabilitation of urban brown fields, etc, but also social issues like inclusion of disadvantaged people and business development in crisis areas..</p> <p>Positive effects on environmental issues like air, soil, landscape as well as on cultural heritage can be expected. As it contributes to reduce poor living conditions this area of intervention particularly supports the overall frame of the living conditions and human health in urban areas.</p>		
<b>Suggestions for reformulations, possible measures to be implemented into the OP:</b>		
<p>Activities to support management know how and strategies for tackling “urban environment challenges“ like air quality, noise exposure, improvements to public transport systems and re-organisation of urban public space should additionally be addressed by this area of intervention.</p> <p>Positive impacts on environment and human health / population could be expected, if participation of urban citizens, NGOs or local stakeholders is enhanced, e.g. by establishing Local Agenda 21 structures.</p>		
<b>P 4: Development of transnational synergies for sustainable growth</b>		
<b>Area of intervention (4.2): Promote a balanced pattern of attractive and accessible growth areas</b>		
<b>Assessment:</b>		
Water ○	Air, Climate ○	Fauna, Flora, Biodiversity +/-
Soil +/-	Population, Human health +/-	Landscape and Cultural Heritage -
<b>Comments:</b>		
<p>Cooperative marketing and development activities to support economic growth and attracting investments in a transnational network of regions, including procedures for business location development could lead to an extensive growth of land take for economic purpose, including increasing demand for transport infrastructure and other related facilities.</p> <p>The assessment of positive / negative impacts on Soil, Fauna, Flora and Biodiversity, Landscape as well as on Population and Human Health depends on details on project level (e.g. business parks, urban development projects, etc.) and can not be assessed on programme level. Existing cultural landscape in and around metropolitan growth areas will be affected negatively.</p>		

**Suggestions for reformulations, possible measures to be implemented into the OP:**

All projects which aim at creating new development areas should be accompanied by impact assessments, reflecting long-term effects on urban development, land take, air pollution and biodiversity.

Science- and Technology park networks should emphasis on strategies for re-use of existing facilities and brown fields, e.g. by addressing productive sector (large scale and SMEs), science, local or regional administration, real estate & financial institutions to conduct transnational know-how transfer activities, field studies or pilot projects.

**P 4: Development of transnational synergies for sustainable growth**

**Area of intervention (4.3): Promote the use of cultural values for development**

**Assessment:**

Water ○	Air, Climate ○	Fauna, Flora, Biodiversity ○
Soil ○	Population, Human health ○	Landscape and Cultural Heritage +/-

**Comments:**

The area of intervention will support the protection as well as the use of cultural heritage in the programme area to mobilise cultural values, to provide business opportunities and to make the cities an attractive place to live and work. On the one hand this strategy will support the preservation and maintenance of existing cultural heritage (including cultural landscapes and outstanding natural sites), promoting their role and function for regional cultural identity.

On the other hand conflicts between heritage conservation's concerns and economic development can arise from adopting cultural assets to the need of tourism, probably generating an "overuse" of cultural sites and landscapes.

**Suggestions for reformulations, possible measures to be implemented into the OP:**

The measures supported by this area of intervention shall reflect the natural and social capacity and possible side effects which may be a result of comprehensive "economical exploitation" of cultural heritage.

## 6.3 Conclusions out of the assessment

Reflecting the priorities and areas of intervention of the operational programme, positive impacts on environmental issues can be expected, but also some negative effects (see chap. 6.2 / assessment).

**Positive impacts could be extended and negative impacts minimized, if the operational programme will integrate following issues:**

### **Priority axis (1): Facilitation of innovation and entrepreneurship**

- Diffusion and application of innovation should influence economic development, which leads to more resource and energy efficiency, especially by establishing regional knowledge capabilities and technology transfer institutions which work on these issues.
- Transnational technology & innovation networks should integrate “risk assessments” to identify possible environmental risks and social impacts of new technologies.

### **Priority axis (2): Protection and improvement of the environment**

- The operational programme should explicitly address transnational activities, which support long-term reduction of air emissions, including greenhouse gas emissions beyond the target time frame of Kyoto-protocol (2012+).
- Know-how transfer should be supported in the field of integrated waste management, air emission control, cleaner production and consumption as well as energy efficiency.
- Projects which aim to increase the exploitation of renewable energy sources should be accompanied by impact assessments, analysing possible negative impacts on agriculture, forestry, biodiversity, soil, water, air and landscape development.

### **Priority axis (3): Improvement of the accessibility**

- The transnational programme should concentrate on developing sustainable and energy efficient transportation systems including multi-modal logistics and alternative modes to improve accessibility without significant environmental impacts (esp. reducing air emissions, noise, land take).
- All projects which will support the development of physical transport infrastructure and / or extension of transport networks should be accompanied by impact assessments (EIA-SEA), reflecting long-term effects on urban development, land take, biodiversity, air pollution and climate change.
- The operational programme shall not support transnational projects which may be in conflict with existing European legal framework (like Water Frame Directive, Natura 2000 network).

### **Priority axis (4): Development of transnational synergies for sustainable growth**

- Sustainable urban networks should optimize material flows, energy efficiency, low emission transport systems (including up-grading of public transport). It is suggested to add these principles to the overall objectives of programme implementation.
- Strategies for regeneration of high-rising housing estates with low construction standards, decayed urban districts and polluted industrial areas should be addressed by transnational activities, including pilot projects, technical assistance and new governance methods.
- Sustainable tourism development should be integrated into the operational programme as one additional area of intervention, which supports the objective of priority axis 3 “promotion of sustainable development of metropolitan areas and regional systems of settlements”, particularly in coastal areas and mountainous regions.

**Priority axis (5): Technical assistance to support implementation and capacity building**

- Assistance to project generation and implementation of project selection criteria should include the recommendations listed in chap. 6.2.
- The implementation manual should comprise a set “environmental impact indicators” which make the programme achievements in terms of “sustainability principles” visible to the programme partners and the broader public.

figure 6-7: Assessment matrix of the strategic environmental assessment of the South East Europe Programme

Priority axis Environmental Issues		Priority axis 1			Priority axis 2				Priority axis 3			Priority axis 4			Priority axis 5
		1-1	1-2	1-3	2-1	2-2	2-3	2-4	3-1	3-2	3-3	4-1	4-2	4-3	
(1)	Water	+	0	0	+	+	+	+/-	+/-	0	+/-	+	0	0	0
(2)	Soil	+	0	0	0	+	+	+/-	0	0	+	+	+/-	0	0
(3)	Air, Climate	+	0	0	0	+	0	+	+/-	+	+	+	0	0	0
(4)	Population, Human Health	+/-	0	0	+	+	+	+	+/-	+	+	+	+/-	0	0
(5)	Fauna, Flora, Biodiversity	+/-	0	0	0	+	+	+/-	-	0	+/-	0	+/-	0	0
(6)	Landscape, Cultural Heritage	0	0	0	+	+	+	-	-	0	+/-	+	-	+/-	0

figure 6-8: Legend for the assessment matrix

<b>P 1: Facilitation of innovation and entrepreneurship</b>	
1.1 Develop technology & innovation networks in specific fields	1.2 Develop the enabling environment for innovative entrepreneurship
1.3 Develop public awareness for innovation	
<b>P 2: Protection and improvement of the environment</b>	
2.1 Integrated water management and transnational flood risk prevention	2.2 Improve prevention of environmental risks
2.3 Promote co-operation in management of natural assets and protected areas	2.4 Promote energy & resource efficiency
<b>P 3: Improvement of the accessibility</b>	
3.1 Improve coordination in promoting, planning and operation for primary & secondary transportation networks	3.2 Develop strategies to tackle the “digital divide”
3.3 Improve framework conditions for multi modal platforms	
<b>P 4: Development of transnational synergies for sustainable growth</b>	
4.1 Tackling crucial problems affecting metropolitan areas and regional systems of settlements	4.2 Promote a balanced pattern of attractive and accessible growth areas
4.3 Promote the use of cultural values for development	
<b>P 5: Technical assistance to support implementation and capacity building</b>	
5.1 Secure the core management for the implementation of the programme	5.2 Accompanying activities to support the generation and implementation of high quality transnational projects and partnerships

## 7 MONITORING SYSTEM

The monitoring of the environmental impacts of programme implementation should be an integrated part of the ongoing evaluation of the South East Europe Programme 2007-2013, which has still to be defined by the future Monitoring Committee (see OP, chap. 7.6.1). The Monitoring System has to fulfil the SEA Directive requirements on environmental monitoring system.

Analysis of impacts of programme implementation on the respective environmental issues should be one of the goals of the evaluation system. The implementation manual should comprise a set “environmental impact indicators” which make the programme achievements in terms of “sustainability principles” visible to the programme partners and the broader public. This monitoring shall enable the programme authorities to take remedial action if the evaluation shows unexpected adverse environmental effects.

The monitoring has to fulfil the task as follows:

- To evaluate the results of the environmental assessment documented in this report, referring to chap. 6 of environmental report;
- To reveal of unforeseen significant environmental effects
- To measure the effectiveness of project selection procedures in terms of mitigation and avoidance of significant adverse effects on environmental issues, particularly on Natura 2000 sites, which were established according to Habitat and Bird Directive.

It will be important - when preparing the on-going evaluation - to include an explicit requirement on assessing the significant effects of activities and projects on the relevant environmental issues.

On project level a preliminary impact assessment on environmental issues is recommended, probably on the basis of “guiding questions” (see chap. 3.3.1). Any project likely to have a significant impact on Natura 2000 sites has to be subject to appropriate assessments of its implications for the site in view of the site's conservation objectives (art. 6 and 7 Habitat Directive).

The applicants shall make a self assessment about the environmental impacts of the proposed projects following the list of “guiding questions” (including positive effects to fulfil environmental targets of the OP). The results of the data collection could be feed into an impact assessment summarizing the results of project evaluation during programme implementation.

An explicit requirement should also be included in order to propose corrective measures if the monitoring system shows unexpected adverse environmental effects of programme implementation.

## 8 ANNEX

### 8.1 Bibliography

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## 8.3 List of abbreviations

AoI	Area of Intervention
CEE	Central and Eastern Europe
OP	Operational Programme
SEA	Strategic Environmental Assessment
SPA	Special Protection Area
pSCI	proposed Site of Community Interest