



Strategic Environmental Assessment

ENVIRONMENTAL REPORT

Central Europe Programme 2007-2013

Version 2-1

**Central Europe includes: Austria, Czech Republic, Germany, Hungary,
Italy, Poland, Slovak Republic, Slovenia and Ukraine**

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Austrian Institute of Ecology

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NON TECHNICAL SUMMARY

The Task Force of Central Europe Programme developed a draft operational programme for transnational cooperation in line with Art. 6 of the ERDF Regulation¹. 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 Central 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 soil, water resources, air quality, fauna, flora and biodiversity. Technological improvements to reduce emissions are overridden by increasing energy and transport demand. The diversity of the natural heritage is one of the biggest assets of the programming 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. Cultural landscape and heritage sites represent a part of Central Europe's identity, the integration of these values into economic activities is just at the beginning.

Programme objectives and priorities

In the light of the Community Strategic Guidelines (Lisbon/Gothenburg) the overall strategic goal of the programme is to strengthen territorial cohesion, to promote internal integration and to enhance the competitiveness of Central Europe:

- Priority 1 – *Facilitating Innovation across Central Europe* – will improve the framework for innovation and build up the capabilities to transfer innovation systems and to apply them.
- Priority 2 – *Improving Accessibility of and within Central Europe* – will improve the interconnectivity and intermodality on transport across the cooperation area.
- Priority 3 – *Using our environment responsibly* – develops a high quality environment by managing natural resources and heritage, by reducing risks and impacts of natural and man-made hazards.
- Priority 4 – *Enhancing competitiveness and attractiveness of cities and regions* – will promote polycentric settlement structures and will address the effects of demographic and social change on urban and regional development.

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 legislation and strategic policies on international, community or state level. As none of the

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

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 addresses the most important environmental issues of Central Europe in a positive way. Priority 1 supports the implementation of best available (or at least advanced) technologies, which – in a mid-term perspective - will lead to an increase of resource and energy efficiency in production and service sector. Priority 2 aims to change transnational framework conditions in the direction of sustainable and energy efficient mobility systems, by implementing multimodal logistics and cooperation networks. Priority 3 supports the overall improvement of environmental conditions in the programming area, with positive impacts on most of the environmental issues including biodiversity and human health. Priority 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. “Capitalizing on cultural resources for more attractive cities and regions”).

Negative impacts on environmental issues cannot be excluded, if the programme supports the preparation of additional physical infrastructure (road, rail, waterways) to be part of Trans-European transport corridors. 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 enhanced exploitation of energy sources could have indirect negative impacts on landscape, soil and biodiversity, but these impacts will 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 overall objectives of the programme and the objectives of the priorities.

Programme implementation should focus on key issues of long-term balanced development in a transnational context, like reducing negative impacts of climate change, natural resource management, sustainable transport systems and decrease of emissions, in line with the general principle of “sustainability” as defined in the operational programme.

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 Central European Space 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, that 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 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 (EC 1080/2006).

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 RTD 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 Goals and Priorities of the Operational Programme

This summary is based on the draft OP 3-0, dated with December 21th, 2006.

Overall strategic goal

In the light of the Community Strategic Guidelines (Lisbon/Gothenburg) the overall strategic goal of the programme is to **strengthen competitiveness, innovation and attractiveness of Central Europe**.

Related to the national strategic reference frameworks and programmes in neighbouring co-operation areas the strategic orientation is specified via the **programme objectives**:

- Improving competitiveness of Central Europe by strengthening innovation and accessibility structures.
- Improving a balanced and sustainable territorial development by enhancing the quality of the environment and developing attractive cities and regions in Central Europe

General Principles

Sustainability: The principle of sustainability aims at providing relevant development conditions to the living generation, without decreasing the development possibilities for future generations.

Innovation oriented approach: Projects implemented in the framework of this OP will contribute to building-up of the information society.

Equal opportunities and non-discrimination: In the framework of the OP an equal status of men and women will be observed and persons regarding to sex, race and origin will not be discriminated.

Strategic Implementation Principles

The strategic implementation of the Programme is also expressed in terms of **horizontal strategic implementation principles:**

- to emphasis on the availability of relevant and up-to-date knowledge and tools to project partnerships
- to reach out to relevant stakeholders and professional and to ensure effective networking beyond existing partnerships
- to follow an output and result-oriented approach that places much emphasis on the development of concrete, relevant and visible outputs and results (e.g. future initiatives and/or concrete investments)

Priorities of the operational programme

The Priorities and Areas of intervention of the Central Europe Programme take into account the new directions of the European Union's territorial cohesion policy. The Programme emphasises its support of the Lisbon and Gothenburg objectives and reaches out to new stakeholders in the field of innovation and economic development. In addition, the Programme builds upon past experiences and the management of available knowledge in order to add value to existing knowledge.

Priority 1: Facilitating Innovation across Central Europe	
Objective	
To improve the climate of innovation in all regions and to enable them to make better use of their innovation potential by addressing their specific needs and improving areas of weakness and fostering the areas of strength.	
Areas of intervention	
P1.1) Enhancing framework conditions for innovation	P1.3) Fostering knowledge development
P1.2) Building up capabilities for the diffusion and application of innovation	

Priority 2: Improving Accessibility of and within Central Europe	
Objective	
Strengthening through innovative solutions the internal cohesion of countries in Central Europe by improving the accessibility of and within the Central Europe area, fully taking into account the principles of sustainable development.	
Areas of intervention	
P2.1) Improve Central Europe's interconnectivity	P2.3) Promote sustainable and safe mobility
P2.2) Develop multimodal logistics cooperation	P2.4) ICT and alternative solutions of enhancing access

Priority 3: Using our environment responsibly	
Objective	
Responsible use and protection of the environmental potentials of Central Europe by promoting innovative and sustainable approaches to natural resource management, risk reduction and the enhancement of the natural environment.	
Areas of intervention	
P3.1) Development of a high quality environment by managing natural resources and heritage	P3.3) Supporting the use of renewable energy sources and increasing energy efficiency
P3.2) Reducing risks and impacts of natural and man-made hazards	P3.4) Supporting environmental friendly technologies and activities

Priority 4: Enhancing competitiveness and attractiveness of cities and regions	
Objective	
Strengthen the polycentric settlement structure, improve the quality of life and promote the sustainable development of cities and regions.	
Areas of intervention	
P4.1) Developing polycentric settlement structures and territorial cooperation	P4.3) Capitalize on cultural resources for more attractive cities and regions
P4.2) Addressing the territorial effects of demographic and social change on urban and regional development	

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 programming 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 line with the SEA directive following framework of the performed SEA is identified.

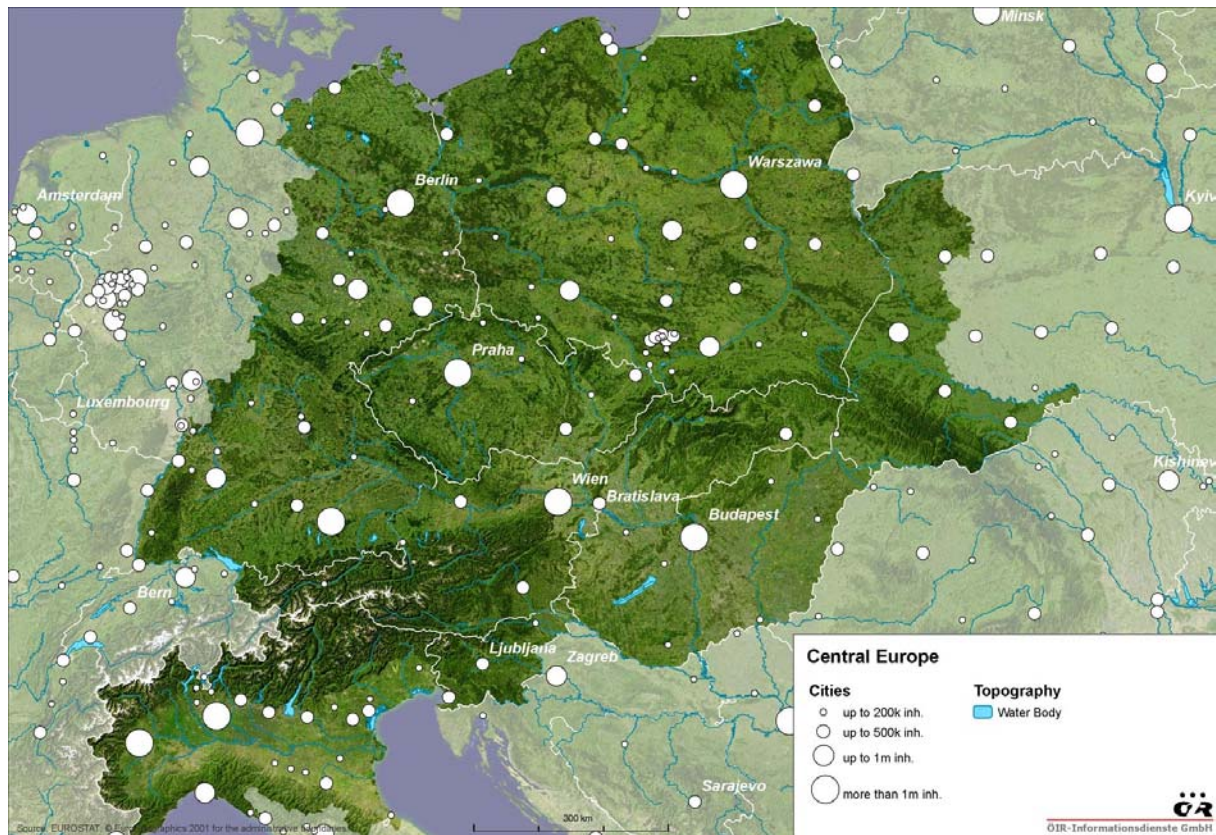
Geographical area of relevance

To define the current state of the environment, trends, also to assess possible positive or negative effects of objectives, priorities and proposed measures the geographical area of relevance covers Austria, the Czech Republic, Germany², Hungary, Italy³, Poland, the Slovak Republic, Slovenia and Ukraine (see figure below). Some effects will be considered in a larger geographical context, for instance effects on change of global climate.

² Provinces: Baden-Württemberg, Bayern, Berlin, Brandenburg, Mecklenburg- Vorpommern, Sachsen, Sachsen-Anhalt, Thüringen

³ Provinces: Piemonte, Valle d'Aosta/Vallée d'Aoste, Liguria, Lombardia, Provincia Autonoma Bolzano/Bozen, Provincia Autonoma Trento

figure 3-1: Transnational cooperation areas 2007-2013 Central Europe (OP 2006)



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 is assumed by 2015.

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 Heritage⁴

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 discription 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

Determination of SEA-objectives and guiding questions

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?

⁴ including issues like Architectural and Archaeological Heritage and Material Assets referring the SEA Directive Annex I

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 or negative effect on environmental issues in the programming 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 have been illustrated by means of an assessment matrix and summarizing conclusions (see chapter 6.3).

3.4 Discussion of alternatives and measures to minimize possible negative impacts

The first draft of environmental report was elaborated on the second draft of operational programme (dated November 6th, 2006). The results of assessment were complemented by suggestions for reformulations or supplements to proposed priorities / areas of intervention.

These suggestions for adjusting some of the priorities / areas of intervention have been seriously been discussed by the Task Force of the Central Europe Programme on its 2-day-meeting in Bratislava (22.-23. November 2006). 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 3-0), 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 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”⁵

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.

⁵ 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 Central Europe. The selection concentrates on environmental issues which were identified in accordance with the SEA directive (see chap. 3). Objectives and targets outlined in the international legislation are summarized in so called “main SEA objectives”. For the assessment “Guiding Questions”, derived on the main objectives, will form the baseline.

Generally, the overall objectives for all environmental aspects rely on the **6th Environment Action Programme of the European Community 2002-2012** (6th 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 targets 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 and the **Drinking Water Directive** (98/83/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 works 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 **6th 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 convention⁶.

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 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 (SO₂, NO_x, VOCs and NH₄), 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).

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, Czech Republic, Slovakia, Slovenia), 6 % (Hungary, Poland), and 0 % (Ukraine) (DECISION 280/2004/EC).

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

⁶ <http://www.unccd.int/>

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**⁷ shall pursue a comprehensive policy and cooperate for the protection and sustainable development of the Carpathians (UNEP 2003). 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. Furthermore they 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 emissions of GHG and emissions responsible for acidification, eutrophication and ground-level ozone
- Strengthening of renewable energy sources
- Improving energy efficiency and realising estimated savings energy potential
- Force 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?

⁷ 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 **6th EAP** is to reduce the quantity of people exposed to permanent noise, caused especially by public and individual traffic (EP 2002)

The reduction of harmful impacts on human health caused by noise is 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 developed⁸.

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). The protection and reconstitution of natural systems to maintain the variety of species is also a objective of the **6th 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).

⁸ <http://ec.europa.eu/environment/noise/home.htm>

The European Union is a signatory party to the **Cartagena Protocol on Biosafety**⁹, 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**¹⁰ (Art. 4) shall pursue policies aiming at conservation, sustainable use and restoration of biological and landscape diversity throughout the Carpathians. 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

The **European Landscape Convention**¹¹ (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 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

⁹ <http://www.biodiv.org/biosafety/default.aspx>

¹⁰ <http://www.carpathianconvention.org/status.htm>

¹¹ www.coe.int/t/e/cultural_co%2Doperation/environment/landscape/presentation/3_Aims/index.asp#TopOfPage

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**¹² 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.

Main SEA Objectives (Resume):

- Protection of natural and cultural heritage
- Conservation of variety and uniqueness of landscape as a source of biodiversity and recreation
- Support of sustainable urban and regional development 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?

¹² <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: ‘the 3rd environmental assessment 2003’ (EEA 2003) and ‘the European environment — State and outlook 2005’ (EEA 2005) and are in case supplemented by further literature with trans-national approach (UNECE, OECD, 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 issues¹³. 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):

Reacting on organic and inorganic pollutants from point sources caused good results, while diffuse sources will continue to be a challenge for environmental management. To provide drinking water in sufficient quality and quantity still efforts are needed.

Water quality in general is most severely affected by organic and inorganic pollutants (pesticides, heavy metals etc.) from households, industry and agriculture. River, lake and coastal water quality, in terms of phosphorus and organic matter, is generally improving in Central Europe, reflecting decreases in discharges. Since the 90ies, the main focus has been on point sources of water pollution, such as households and factories, with good results.

As point sources decline their impact on water quality, diffuse sources, particularly from agriculture, will dominate in future. Fertiliser application for arable farming is the main source of diffuse pollution to water, with nitrates the greatest problem. Nitrate pollution is higher in the EU-15 than in the new Member States.

Total fresh water abstractions fell during the last decade in most regions. However population in the programming area lives in water stressed countries, which means a water exploitation index¹⁴ above 20 %, particularly during droughts or periods of low river flow(see figure below). Drinking water quality, especially related to microbiological contamination and contamination by salt of drinking water supplies is still of concern.

¹³ 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).

¹⁴ The water exploitation index (WEI) is the mean annual total abstraction of freshwater divided by the mean annual total renewable freshwater resource at the country level, expressed in percentage terms (EEA 2005).

figure 5-1: Water exploitations index, Total water abstraction per year as a percentage of long-term freshwater resources in 1990 and 2002 (EEA 2005)

The quality of river water across the programme area shows improving general trend. Nevertheless pressures from agriculture, urbanisation, and tourism will lead to increased 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.

The seas and coasts of the programming area provide a wide range of ecosystem services that are essential to the European economic and the health of Europe's environment. Although discharges to coastal areas have decreased due to regulation like the urban waste water directive (1991/271/EEC) or the bathing waters directive (1976/160/EEC), concentrations of nutrients especially near river mouths or big cities are much higher than natural or background levels.

5.2 Soil

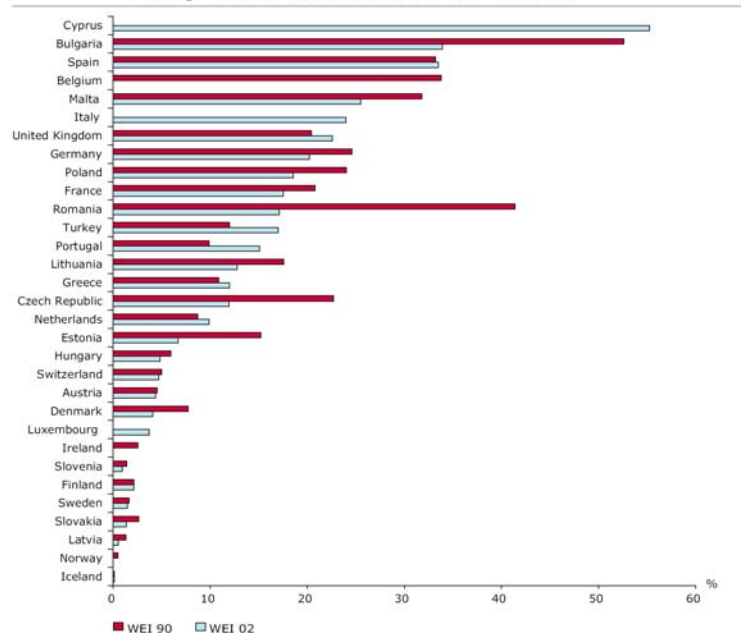
Soil- State of the environment and trends (summary):

Erosion, compaction, sealing and actual land filling as well as burden from earlier human activity pose most important risks to soil and its capabilities.

Different economic sectors, changes in climate and land use, concentration of population and activities in localised areas lead to pressures on soil and irreversible loss due to erosion, sealing, compaction, acidification, salinisation and continuing contamination from local and diffuse sources. The various number of influences result in a future challenge to combine European development with protection of soil as a non-renewable resource.

Wide areas in Hungary, Italy and Germany deal with high risk of erosion. In humid climates like in Germany and Poland erosion by wind causes loss of fertile soil. Eroded soils are less efficient at filtering pollution and capturing water to replenish groundwater reserves. In more arid climates erosion also increases risk of desertification. Damage due to acidification bases on the loss of geochemical structure of the soil and will show its effects in a long term view, especially in Czech Republic, Germany, Hungary, Poland and Slovakia.

Figure 1 Water exploitation index. Total water abstraction per year as a percentage of long-term freshwater resources in 1990 and 2002



Note: 1990 = 1991 for Germany, France, Spain and Latvia;
 1990 = 1992 for Hungary and Iceland;
 2002 = 2001 for Germany, the Netherlands, Bulgaria and Turkey;
 2002 = 2000 for Malta;
 2002 = 1999 for Luxembourg, Finland and Austria;
 2002 = 1998 for Italy and Portugal;
 2002 = 1997 for Greece.
 Belgium and Ireland 1994 data and Norway 1985 data.

In East Europe Countries especially 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.

Former inadequate disposal of waste and losses during industrial and commercial operations nowadays form challenges in form of locally contaminated sites. Hot spots in the programming area, contaminated with heavy metals and organic substances, can be identified in the Po valley (Italy), the Black triangle (Czech Republic, Slovakia, Poland and Germany) and at a great number of military sites that stem from past activities and poor management practices in eastern Europe. Although the trend shows a significant reduction in the quantity of waste going to disposal, land filling is still the predominant waste treatment option in most countries throughout Central and Eastern Europe with illegal land filling still remaining as a recent practice.

Municipal waste, to be handled as an indicator for describing the material intensity of economies in Europe, continues to increase. In 2003 The amounts of collected municipal waste varied considerably between 638 kg/capita and 260 kg/capita. Municipal waste accounts for approximately 14 % of total waste arising in western and 5 % in central eastern Europe. The EU target to reduce municipal waste generation to 300 kg/capita and year by 2000 was not achieved.

At present municipal waste in the EU is disposed of through landfill (49 %), incineration (18%), recycling and composting (33 %). 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).

5.3 Air, Climate

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

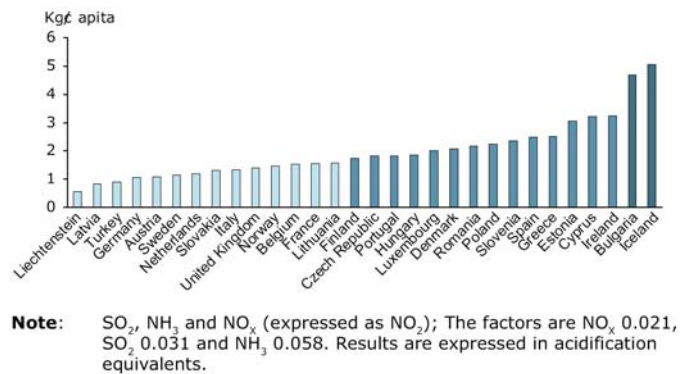
Development of the emissions of several air pollutants (incl. Green house gases) are closely linked to activities in the economic sectors of energy production, industry, housing and transport. Technological improvements to reduce emissions are overridden by increasing energy and transport demand. Although energy intensity decreased in the last ten years, final energy demand is still growing.

In particular 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. Reductions in western Europe have resulted mainly from fuel switching, flue-gas treatment and the introduction of three way catalysts for cars. 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 West Europe. Technology progress opposes a rapid increase in demand of road transport.

Emissions of **acidifying and eutrophying substances** derive inter alia from agriculture, energy sector and transport sector. In values per capita the western part of the programming area features lower and the eastern part features higher emissions (see figure below).

Related to the National Emission Ceilings Directive the programme area is not on track to meet the outlined targets. Urban areas will also have to face pollution due to **particulate matter**. Urban agglomerations across the programme area show increasing number of excess of thresholds. 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



Emissions of the **precursors of ozone** have declined by a third since 1990 and most countries should meet EU emissions ceilings. One 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.

European **climate** is changing. Over the past 100 years the mean temperature has increased by about 1,2°C over and the 1990s was 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 therefore 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 eastern Europe, the Caucasus and Central Asia, precipitation in summer is projected to decrease by up to 5 % per decade, while the winters may become wetter.

The relative GHG emissions in the programme area fell by 15 % between the base year 1990 and 2004 (EU-15: -0,9 %) due to the weak economy in the first half of the 1990ies¹⁵. Burning fossil fuels remains the number one source of GHG emissions. Although with decreasing trend decline from energy industries, the industry sector, agriculture and waste were partly offset by increases from transport. In Poland and Italy forestry acts as a sink for CO₂ and can help to full-fill Kyoto-targets.

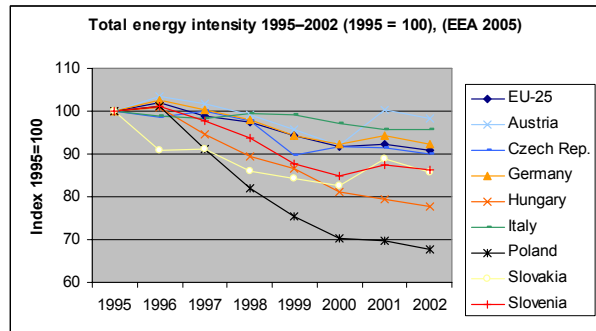
A potential for reduction air emissions incl. GHG could be achieved by switching to alternative energy sources and – even more effective – supporting efficiency improvements. One key priority connected to climate change is the role of renewable energy sources. In 1997, in the EU-15, the share of renewable energy was 5.4%; by 2003 it had reached 12,8 %¹⁶. However, the extrapolation scenarios propose that, although progress towards meeting the targets has begun, the 2010 target for EU-25 of 21 %¹⁷ 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).

¹⁵ Data from <http://www.ieta.org/ieta/www/pages/index.php?ldSitePage=1132> and <http://www.eea.europa.eu/pressroom/newsreleases/GHG2006-en> and http://globalis.gvu.unu.edu/indicator_detail.cfm?Country=UA&IndicatorID=196#row ; calculation by AIAE

¹⁶ http://themes.eea.europa.eu/IMS/ISpecs/ISpecification20041007132211/IAssessment1144239932786/view_content

¹⁷ http://ec.europa.eu/energy/green-paper-energy/doc/2006_03_08_gp_factsheet_en.pdf

Final energy consumption in the programming area, excluding Ukraine decreased by about 3 % over the period 1990 to 2002 (EU-25: +7,4 %). Transport, industry, and household contribute comparable shares. Transport has been the fastest-growing sector since 1990. As well as in the EU-25 in all area countries the energy intensity (total energy consumption per GDP) showed decreasing trends (see figure beside) (EEA 2005).



Data since 1995 show increasing emissions arising from **freight and passenger transport**, to be a result of increasing transport demand. Also for most of the countries in the programming area, freight and passenger transport demand increased (see figure below).

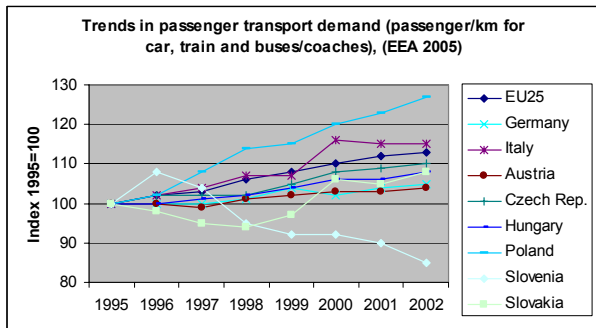
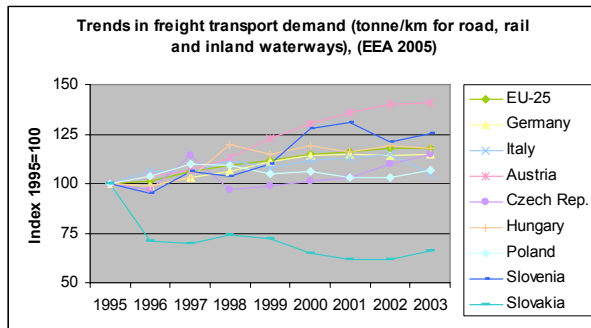
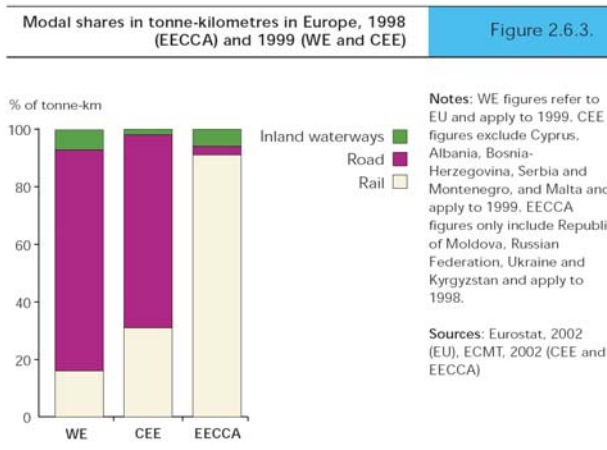


figure 5-2: Trends in freight transport demand (tonne/km for road, rail and inland waterways) and passenger transport demand (passenger/km for car, train and buses/coaches); index 1995 = 100 (EEA, 2005)

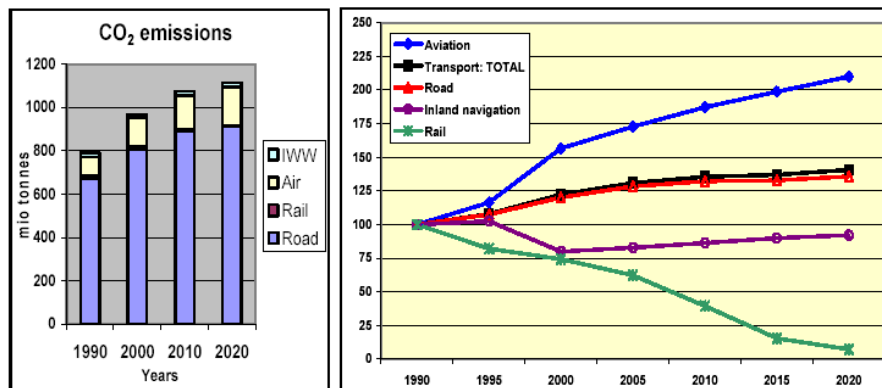


Across the programme area most important transport mode is road. In the western parts it is even more dominant than in the eastern parts (see figure beside¹⁸). Nevertheless during the 1990ies transport volumes in EEC shifted dramatically from rail (common transport) to road and air.

The mid term review of the Transport White Paper proposed increasing CO₂-emissions of total transport demand (see figure below). While emissions via aviation and road will increase, CO₂- emissions of transport by rail will decrease (COM 2006 314)

¹⁸ Territorial units: **WE** (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, United Kingdom (EU-15); Iceland, Liechtenstein, Norway, Switzerland; including the small states Andorra, Monaco, San Marino); **CEE** (Albania, Bosnia-Herzegovina, Bulgaria, Czech Republic, Croatia, Estonia, FYRo Macedonia, Hungary, Latvia, Lithuania, Poland, Romania, Serbia and Montenegro, Slovak Republic, Slovenia, Cyprus, Malta and Turkey); **EECCA** (Armenia, Azerbaijan, Belarus, Georgia, Republic of Moldova, Russian Federation, Ukraine, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan)

figure 5-3: Expected evolution of CO₂ emissions from transport mode (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. Especially 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 vary 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 over 120 million people in the EU are exposed to notably noise levels on the front facade of their houses and flats¹⁹.

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.²⁰

¹⁹ http://themes.eea.europa.eu/Environmental_issues/noise

²⁰ http://ec.europa.eu/environment/health/pdf/facts_and_figures.pdf

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 programming area. To protect biodiversity the Natura 2000 network has been established in last ten years. 13 % of the land area 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 of protected areas.

The programme area had 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. The new EU-members still host species and habitat types that have nearly vanished from Western Europe.

The diversity of the natural heritage is one of the biggest assets of the programming area with a view to sustainable development. Most valuable natural ecosystems are found in border 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 the protection network Natura 2000 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”. By June 2006 13 % of the programme area has been designated so far with different situation in the member states.

table 5-1: Natura 2000 protected Areas for Central Europe member states²¹

State	pSCI (under FFH directive)				SPA (under birds directive)			
	No.	Land [km ²]	[%]	Marine [km ²]	No.	Land [km ²]	[%]	Marine [km ²]
Austria	164	8.884	10,6%		94	9.275	11,1%	
Czech Rep.	841	7.241	9,2%		38	6.936	8,8%	
Germany	4.617	35.208	9,9%	18.086	568	31.885	8,9%	162.156
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
Poland	192	13.124	4,2%	0	72	24.362	7,8%	8.794
Slovenia	259	6.359	31,4%	1	27	4.653	23,0%	3
Slovak Rep.	382	5.739	11,8%		38	12.295	25,2%	
TOTAL	9.177	132.234	13,0%	20.314	1.395	127.394	13,0%	171.349
EU	20.789	481.298	12,2%	77.784	4.540	444.368	10,0%	64.754

Biodiversity and natural heritage are effected 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 listened 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.

²¹ http://ec.europa.eu/environment/nature/nature_conservation/useful_info/barometer/barometer.htm

5.6 Landscape and Cultural Heritage

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

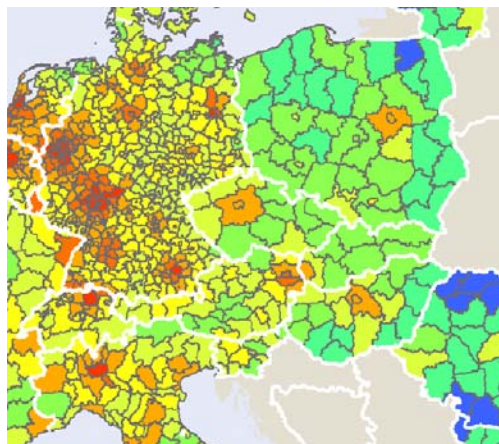
Central Europe has to face consequences that follow dispersal and sprawl of urban settlements. Flood events and coastal development form challenges for spatial planning and risk management, which directly impacts material assets as well. Cultural landscape and heritage sites represent part of Europe's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

Large areas of Central Europe are urbanised and densely populated. With about 138 million inhabitants, it is one of the biggest population mass potential in Europe. 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 Central European countries 123 **cultural and natural heritage** sites (including mixed properties) are listed by the UNESCO World Heritage List, which represents 15 % of global heritage listed by UNESCO²².

Future changes to landscape patterns - as 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 western parts of the programming area and all regions surrounding the national capitals show higher accessibility potential compared to eastern and rural areas (see figure below, ESPON 2004).

figure 5-4: Potential multimodal accessibility 2001 (ESPON 2004)



Pressure on land take, urban sprawl and loss of traditional landscape will effect especially those areas in Central 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. Additionally, tourism and recreation

²² <http://whc.unesco.org/en/list/>

activities will attribute to landscape changes (e.g. in mountain areas, maritime areas), in line with increasing economic performance and growing incomes in new EU-member states.

As one result of changing land use patterns and growing percentage of sealed surfaces, increasing **number of flood events** were registered: Between 1998 and 2004, Central Europe suffered from damaging floods, including the catastrophic floods along the rivers Danube and Elbe in summer 2002. Since 1998 all floods registered in Europe caused some 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, Czech Republic and Germany 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.

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 or negative effect on environmental issues in the programming 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 SEA-objectives and “guiding questions” (see chapter 4).

- If the area of intervention will probably contribute in a positive way to improve environmental trends in the programming 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 programming 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 the abstract character of information in the operational programme

Additionally, measures to prevent, reduce and mitigate possible negative impacts on the environment by implementing the operational programme 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 Effects²³

Priority (1): Facilitating Innovation across Central Europe

Priority (1): Facilitating Innovation across Central Europe			
Area of intervention (P1.1): Enhancing framework conditions for innovation			
Assessment:			
Water /	Air, Climate /	Fauna, Flora, Biodiversity /	
Soil /	Population, Human health /	Landscape and Cultural Heritage /	
Comments:			
The OP does not address any specific thematic approach on cluster development or capacity building. Due to lack of information in the OP an assessment of possible positive or negative effects cannot be performed.			
Suggestions for reformulations, possible activities to be implemented into the OP:			
Sector specifications could be supplemented, especially for regional or trans-national cooperation measures and key competence areas.			
It is suggested to work out priorities for knowledge management and innovation governance, to address specific needs and areas of weakness in the trans-national area of Central Europe.			

Priority (1): Facilitating Innovation across Central Europe			
Area of intervention (P1.2): Building up capabilities for the diffusion and application of innovation			
Assessment:			
Water +	Air, Climate +	Fauna, Flora, Biodiversity ○	
Soil +	Population, Human health +	Landscape and Cultural Heritage +/-	
Comments:			
Improvements for access to technological innovation will support the implementation of best (or almost best) available technologies, with benefits for not well developed regions of the programming area. Therefore the OP will contribute to an increase of resource and energy efficiency. This will lead - at least in a mid-term perspective - to a reduction of emission load to water and air, and will have positive effects on climate change, population and human health.			
Technology transfer and trans-national cooperation networks in the field of waste management could probably enhance resource efficiency and reduce land fill activities.			
Obviously, that economic success will lead to increased demand for business site development. Negative effects on landscape or urban structures can not be excluded.			
Suggestions for reformulations, possible activities to be implemented into the OP:			
Implement more details on special sector demands for the diffusion of innovation and technology transfer.			
Reuse of existing facilities and brown fields should be especially addressed, e.g. by field studies or research activities, integrating productive sector (large scale enterprises and SMEs), science, local or regional administration and financial engineering instruments.			

²³ This assessment is based on the programme draft 3-0, dated December 21st 2006.

Priority (1): Facilitating Innovation across Central Europe		
Area of intervention (P1.3): Fostering knowledge development		
Assessment:		
Water ○	Air, Climate ○	Fauna, Flora, Biodiversity ○
Soil ○	Population, Human health ○	Landscape and Cultural Heritage ○
Comments:		
<p>In a long term view, knowledge about environmental issues can be enhanced by trans-national educational activities. It will make it easier to upgrade environmental standards and establish sustainability approach, e.g. in legal frameworks, business activities, urban development, economic decisions and consumption behaviour. However, possible positive impacts on environmental issues within the timeframe of the OP implementation will be still limited.</p>		
Suggestions for reformulations, possible activities to be implemented into the OP:		

Priority (2): Improving Accessibility of and within Central Europe

Priority (2): Improving Accessibility of and within Central Europe		
Area of intervention (P2.1): Improve Central Europe's interconnectivity		
Assessment:		
Water -	Air, Climate +	Fauna, Flora, Biodiversity -
Soil ○	Population, Human health +	Landscape and Cultural Heritage -
Comments:		
<p>Optimising impacts and potentials of European high-priority transport corridors in the direction of sustainable and energy efficient transport modes and promoting inter-modal transport systems with inland navigation and railways will reduce air pollutants and CO₂ emissions. Furthermore, it will reduce environmental related health risks.</p> <p>Nevertheless, the promoted Transeuropean transport corridors and their link to the secondary network will increase land take and the fragmentation of habitats, even if they are developed in the direction of sustainable and energy efficient transport modes. Promoting waterways will probably effect the hydromorphology and ecological values of rivers negatively.</p>		
Suggestions for reformulations, possible activities to be implemented into the OP:		
<p>All projects which will support the enhancement of transeuropean transport capacities should be accompanied with impact assessments, reflecting long-term effects on urban development, land take, biodiversity, air pollution and climate change.</p> <p>At the regional level the support of alternative transport solutions should be linked with a sustainable strategy for settlement development.</p> <p>In terms of promoting inland navigation the supported projects should take into account the comprehensive approach of river basin development including ecological objectives, with basic conditions stipulated by the WF directive.</p>		

Priority (2): Improving Accessibility of and within Central Europe		
Area of intervention (P2.2): Develop multimodal logistics cooperation		
Assessment:		
Water ○	Air, Climate +	Fauna, Flora, Biodiversity ○
Soil ○	Population, Human health +	Landscape and Cultural Heritage ○
Comments:		
<p>P2.2 clearly aims at avoiding negative environmental impacts, mainly produced by road traffic. It supports multimodal solutions understood as the combination of more than one transport mode. Without such multimodal solutions a higher increase of road traffic is very likely.</p> <p>This area of intervention helps to reduce the negative effects of road transport reducing air pollutants, greenhouse gases and environmental health risks. As the area of intervention does not support the construction of new infrastructure, developing multimodal logistics cooperation will not produce severe impacts on water, soil, fauna, flora, biodiversity, the landscape and cultural heritage.</p>		
Suggestions for reformulations, possible activities to be implemented into the OP:		
There should be a clear focus on strengthening environmentally friendly modes of transport within the supported multimodal logistics cooperation.		

Priority (2): Improving Accessibility of and within Central Europe		
Area of intervention (P2.3): Promote sustainable and safe mobility		
Assessment:		
Water ○	Air, Climate +	Fauna, Flora, Biodiversity ○
Soil ○	Population, Human health +	Landscape and Cultural Heritage ○
Comments:		
<p>The area of intervention explicitly aims at reducing the environmental burdens arising from traffic. This will lead to higher energy efficiency and reduce emissions, amongst others CO₂, both affecting positive impacts on air quality and climate. Combined with projects increasing safety of traffic and reducing noise positive effects on human health can be expected.</p>		
Suggestions for reformulations, possible activities to be implemented into the OP:		
Innovations to tackle transport bottlenecks should integrate assessments of secondary effects on urban development, land take, air and climate change in a long-term view.		

Priority (2): Improving Accessibility of and within Central Europe		
Area of intervention (P2.4): ICT and alternative solutions of enhancing access		
Assessment:		
Water ○	Air, Climate +	Fauna, Flora, Biodiversity ○
Soil ○	Population, Human health +	Landscape and Cultural Heritage ○
Comments:		
<p>The area of intervention aims to use ICT for access to public services by other means than physical transport (e.g. e-learning,). Even if the potential to substitute physical transport with ICT is limited, the area of intervention will reduce traffic volume, influencing air quality and human health.</p>		
Suggestions for reformulations, possible activities to be implemented into the OP:		

Priority (3): Using our environment responsibly

Priority (3): Using our environment responsibly		
Area of intervention (P3.1): Development of a high quality environment by managing natural resources and heritage		
Assessment:		
Water +	Air, Climate +	Fauna, Flora, Biodiversity +
Soil +	Population, Human health +	Landscape and Cultural Heritage +
Comments:		
<p>As the aim of this area of intervention is to enhance the quality of transnational environmental characteristics (river basin, landscape, protected areas, air, soil), all activities shall have positive impact on all environmental issues per definition. Implementation of actions to support sustainable use of natural resources and waste management will contribute to protection and development of environmental characteristics. Strategies to remediate decontaminated sites and brownfields contribute to improve the quality of soil. It is notable, that natural heritage as one of the most important regional assets is taken into considerations as well.</p> <p>The development of river systems and coastal areas as joint actions including integrative, transnational management models and the reducing of pollution by diffuse sources (e.g. agriculture) will have positive effects.</p>		
Suggestions for reformulations, possible activities to be implemented into the OP:		
<p>The focus on soil and water related actions could be extended into areas of intervention addressing long term reduction of greenhouse gas emissions beyond the time frame of Kyoto-protocol (2012+).</p> <p>As sustainable construction of future buildings and environmental friendly technologies seem to have significant positive effects on natural resources and heritage, programme implementation should aim to coordinate this area of intervention with activities addressed by P3.4.</p>		

Priority (3): Using our environment responsibly		
Area of intervention (P3.2): Reducing risks and impacts of natural and man-made hazards		
Assessment:		
Water +	Air, Climate O	Fauna, Flora, Biodiversity +
Soil +	Population, Human health +	Landscape and Cultural Heritage +
Comments:		
<p>Integrated risk management in involved sectors including prevention activities (e.g. in spatial planning) will have positive impact on all environmental issues, except Air and Climate. Due to the reduction of flooding risk also pollution of water, soil, habitats and human health can be minimized indirectly.</p> <p>It is assumed that successful risk reduction activities on regional level will integrate activities in agriculture, forestry, urban planning, recreation, water supply, energy management, waste water and waste management. The network development between all relevant sectors will set the basis for effective communication, cooperation and coordination across national, disciplinary and institutional borders, which will form key factors for success.</p>		
Suggestions for reformulations, possible activities to be implemented into the OP:		

Priority (3): Using our environment responsibly		
Area of intervention (P3.3): Supporting the use of renewable energy sources and increasing energy efficiency		
Assessment:		
Water ○	Air, Climate +	Fauna, Flora, Biodiversity /
Soil ○	Population, Human health +	Landscape and Cultural Heritage ○
Comments:		
<p>Promoting responsible production and consumption patterns and energy efficiency in all sectors of economy and society will have positive impacts on Air/Climate and Population/Human Health by reduction of the use of fossil fuels and increasing energy efficiency. Furthermore, it will strengthen the independency from external energy sources.</p> <p>Projects will have to fulfill the selection criteria of “balanced strategies for the use and exploitation of renewable energy resources”, preventing possible negative impacts to Water and Landscape/Cultural Heritage. In the same way possible negative impacts on soil - due to intensive cultivation of energy plants - should be prevented or at least limited. The impact on Flora, Fauna, Biodiversity can not be assessed, as effects could occur very locally and depend on project specification. The communication of possible connected risks will enhance the awareness within the programme area about possible impacts of new energy production technologies.</p>		
Suggestions for reformulations, possible activities to be implemented into the OP:		
Sustainable construction and renovation of buildings (residential and non-residential) including facility management and energy efficiency measures should be addressed by this area of intervention as well, in coordination with P3.4 and P4.1.		

Priority (3): Using our environment responsibly		
Area of intervention (P3.4): Supporting environmental friendly technologies and activities		
Assessment:		
Water +	Air, Climate +	Fauna, Flora, Biodiversity ○
Soil +	Population, Human health +	Landscape and Cultural Heritage +
Comments:		
<p>This area of intervention will have positive impact on Water, Soil, Air, Climate Landscape, Cultural Heritage because of the implementation of principles of sustainable production and consumption with special attention to support the Life Cycle Assessment approach (LCA). Management tools and transnational incentives will help to implement this approach into economic activities and decision making procedures.</p> <p>Fostering urban technologies (like waste and water supply management) and promoting strategies for sustainable construction will reduce emissions to soil, water and air and enhance overall framework for human health and quality of life in the programme area.</p>		
Suggestions for reformulations, possible activities to be implemented into the OP:		
Moreover, the area of intervention should include the issue of “green procurement systems” for public and private sector		

Priority (4): Enhancing competitiveness and attractiveness of cities and regions

Priority (4): Enhancing competitiveness and attractiveness of cities and regions		
Area of intervention (P4.1): Developing polycentric settlement structures and territorial cooperation		
Assessment:		
Water ○	Air, Climate ○	Fauna, Flora, Biodiversity ○
Soil ○	Population, Human health +	Landscape and Cultural Heritage +
Comments: Strengthening urban and regional networks including functional up-grading of urban centres will help to reduce urban sprawl, consequently decrease additional land take and long-distance traffic demand.		
Suggestions for reformulations, possible activities to be implemented into the OP: Well coordinated polycentric urban networks could optimize material flows, energy efficiency, low emission transport systems and sustainable urban development patterns. It is suggested to support know how transfer and strategic planning approaches to support sustainable growth of urban areas.		

Priority (4): Enhancing competitiveness and attractiveness of cities and regions		
Area of intervention (P4.2): Addressing the territorial effects of demographic and social change on urban and regional development		
Assessment:		
Water +	Air, Climate +	Fauna, Flora, Biodiversity ○
Soil +	Population, Human health +	Landscape and Cultural Heritage ○
Comments: The improvement of urban structures in terms innovative solutions for the adaption and provision of key service will cause positive effects on environmental issues like Water, Soil and Air and will improve overall conditions of urban living, addressing the environmental qualities for Population and Human Health.		
Suggestions for reformulations, possible activities to be implemented into the OP: ----		

Priority (4): Enhancing competitiveness and attractiveness of cities and regions		
Area of intervention (P4.3): Capitalize on cultural resources for more attractive cities and regions		
Assessment		
Water ○	Air, Climate ○	Fauna, Flora, Biodiversity ○
Soil ○	Population, Human health ○	Landscape and Cultural Heritage +
<p>Comments: Capitalising of cultural heritage will help to protect cultural monuments including cultural landscape and to develop innovative management strategies for sustainable exploitation. It will improve the state of preservation and helps to re-develop disadvantaged areas. Particular attention to natural and social capacity issues will avoid touristical exploitation which could imply negative impacts (traffic, construction activities, seasonal overload).</p>		
<p>Suggestions for reformulations, possible activities to be implemented into the OP: ----</p>		

6.3 Conclusion and summarizing recommendation

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 overall objectives of the programme and the objectives of the priorities.

Positive impacts could be extended and possible negative impacts reduced or mitigated, if the programme implementation will focus on following issues:

Priority (1): Facilitating Innovation across Central Europe

- Diffusion and application of innovation should lead to more resource and energy efficiency, especially by establishing transnational technology transfer networks which work on these issues.
- Know how transfer for appropriate re-use of brownfields, e.g. for new economic and urban development projects, should be addressed by transnational projects, integrating technical, financial and legal aspects.

Priority (2): Improving Accessibility of and within Central Europe

- The transnational programme should concentrate on developing sustainable and energy efficient transportation systems including multi-modal logistics and alternative modes of enhancing access, to meet the objective of improving accessibility as well as the limitation of adverse environmental impacts.
- All projects which will support the enhancement of transeuropean transport capacities should be accompanied with impact assessments, reflecting long-term effects on urban development, land take, biodiversity, air pollution and climate change.
- Economic growth as well as the attractiveness of metropolitan areas could be restricted by overloaded transport infrastructure and negative environmental conditions during programme period (2007-2013), as a result of increasing road / air traffic. This interrelationship should be reflected not only by projects which are supported under priority 2, but also by projects under priority 1 and priority 4.

Priority (3): Using our environmental responsibility

- The operational programme should address activities, which aim to a long-term reduction of 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, cleaner production and consumption, sustainable energy production and construction technology, as those issues are fundamental to achieve the objective of priority 3.

Priority (4): Enhancing competitiveness and attractiveness of cities and regions

- Strategies for regeneration of derelict housing areas, urban districts and (polluted) industrial areas should be addressed by transnational activities, including pilot projects, technical assistance and new governance methods.
- Activities to capitalise cultural resources should be restricted to natural or social capabilities and support for “sustainable tourism development”.

figure 6-1: Overview of assessment results, SEA of Central Europe Programme 2007-2013

Priority		Priority 1			Priority 2				Priority 3				Priority 4		
		P1.1	P1.2	P1.3	P2.1	P2.2	P2.3	P2.4	P3.1	P3.2	P3.3	P3.4	P4.1	P4.2	P4.3
(1)	Water	/	+	o	-	o	o	o	+	+	o	+	o	+	o
(2)	Soil	/	+	o	o	o	o	o	+	+	o	+	o	+	o
(3)	Air, Climate	/	+	o	+	+	+	+	+	o	+	+	o	+	o
(4)	Population, Human Health	/	+	o	+	+	+	+	+	+	+	+	+	+	o
(5)	Fauna, Flora, Biodiversity	/	o	o	-	o	o	o	+	+	/	o	o	o	o
(6)	Landscape, Cultural Heritage	/	+/-	o	-	o	o	o	+	+	o	+	+	o	+

figure 6-2: Legend for the assessment matrix

Symbol	Legend
+	possible positive effects
-	possible negative effects
+/-	possible positive and negative effects
o	Minor effects or Not applicable
/	no assessment possible due to the abstract character of information in the operational programme

figure 6-3: Priorities and areas of intervention of the Central Europe Programme 2007-2013

Priority 1: Facilitating Innovation across Central Europe	
P1.1) Enhancing framework conditions for innovation	P1.3) Fostering knowledge development
P1.2) Building up capabilities for the diffusion and application of innovation	
Priority 2: Improving Accessibility of and within Central Europe	
P2.1) Improve Central Europe's interconnectivity	P2.3) Promote sustainable and safe mobility
P2.2) Develop multimodal logistics cooperation	P2.4) ICT and alternative solutions of enhancing access
Priority 3: Using our environment responsibly	
P3.1) Development of a high quality environment by managing natural resources and heritage	P3.3) Supporting the use of renewable energy sources and increasing energy efficiency
P3.2) Reducing risks and impacts of natural and man-made hazards	P3.4) Supporting environmental friendly technologies and activities
Priority 4: Enhancing competitiveness and attractiveness of cities and regions	
P4.1) Developing polycentric settlement structures and territorial cooperation	P4.3) Capitalize on cultural resources for more attractive cities and regions
P4.2) Addressing the territorial effects of demographic and social change on urban and regional development	

7 MONITORING SYSTEM

The monitoring of the environmental impacts of programme implementation should be an integrated part of the ongoing evaluation of the Central Europe Programme 2007-2013, which has still to be defined by the future Monitoring Committee (see OP, chap. 6.5.4)

Analysis of impacts of programme implementation on the respective environmental issues should be one of the goals of the evaluation system. The monitoring shall enable the programme authorities to take remedial action if the evaluation shows unexpected adverse environmental effects.

The monitoring has to fulfill the task as follows:

- To evaluate the results of the environmental assessment documented in this report, referring to chap. 5 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

On project level a preliminary impact assessment on environmental issues is recommended, probably on the basis of “guiding questions” (see chap. 3.3.1). The applicants shall make a self assessment about the environmental aspects of the proposed projects following the list of “guiding questions”. The results of the data collection could be feed into an impact assessment summarizing the results of project evaluation during programme implementation.

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

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

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8.3 List of abbreviations

AoI	Area of Intervention
OP	Operational Programme
SEA	Strategic Environmental Assessment
SPA	Special Protection Area
pSCI	proposed Site of Community Interest