Ex-ante Evaluation

Operational Programme

Transport Infrastructure

Romania

(Final)

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Contents

Abbreviations and Acronyms

ACD	Administrative Capacity Development
CF	Cohesion Fund
CFR	Romanian National Company for Railways
CSF	Community Support Framework
DG	Directorate-General
EAFRD	European Agricultural Fund for Rural Development
ECU	Evaluation and Coordination Unit
EFF	European Fisheries Fund
ERDF	European Regional Development Fund
EU	European Union
EIB	European Investment Bank
GDP	Gross Domestic Product
GTMP	General Transport Master Plan
ICT	Information and Communication Technology
IFI	International Finance Institutions
ISPA	Instruments for Structural Policies for pre Accession
MA	Managing Authority
MACSF	Managing Authority for the Community Support Framework
MTCT	Ministry of Transport, Construction and Tourism
NCMNR	National Company for Motorways and National Roads
NSRF	National Strategic Reference Framework
OP	Operational Programme
PC	Programme Complement
PHARE	One of the EC pre accession instruments
ROP	Regional Operational Programme
SEA	Strategic Environment Assessment
SMART	Specific, Measurable, Achievable, Realistic, Timely
SOP	Sectoral Operational Programme
SOPT	Sectoral Operational Programme Transport
SWOT	Strengths Weaknesses Opportunities Strengths
TEN-T	Trans European Networks - Transport

Executive Summary

The ex-ante evaluation for the Sectoral Operational Programme Transport (SOPT) 2007-2013 has been carried out in the period August – November 2006. The basis for the evaluation has been an appraisal of the in April 2006 submitted version of the SOPT to the European Commission in Brussels as well as studies of underlying documentation and relevant information to the SOPT as well as interviews with the main stakeholders in Romania, e.g. the Managing Authority and implementing agencies.

The ex-ante evaluation of the SOPT can be considered as a fundamental part of an important process, which has as main objective to improve the quality of the SOPT in the sense of maximising compliance with EU and national policy guidelines and at the same time increasing its effectiveness and efficiency in achieving the formulated programme goals.

In this process two official debriefing sessions have been organised in which the Evaluation and Coordination Unit (ECU) of the Ministry of Public Finance, representatives of the Managing Authority and the ex-ante evaluator participated to discuss progress of the ex-ante evaluation. The ex-ante evaluator has also organised meetings with representatives from the European Commission, in charge of the Sectoral and Regional Operational Programmes, e.g. DG Regio to discuss preliminary findings and exchange views. However, the ex-ante evaluator would like to stress that the evaluation has been carried out strict independently without any interference from the European Commission, the Managing Authority or the ECU of the Ministry of Public Finance in Romania.

The SOPT provides a relatively comprehensive overview of the needs related with the development of the transport sector in Romania. These needs have been translated into a strategy at the level of the Operational Programme as there still is no General Master Plan for the Transport Sector with definition of global objectives; specific objectives; list of priority axes and key areas of intervention. There is a certain logical coherence in this process. It goes without saying, however, that with a more reliable database, development of policy would be much easier and programme and project interventions would be more focused and targeted to implement this policy.

The overall conclusion must be that the Sectoral Operational Programme Transport is of high quality and certainly complies with the Community Strategic Guidelines for Cohesion Policy and the Lisbon Strategy for Growth and Jobs and the overall European transport policy as defined in the document "European Transport Policy for 2010, Time to Decide" and "Keep Europe Moving". The SOPT is also derived from the Romanian National Strategic Reference Framework and is as such in congruence with Romanian policy.

The present state of the transport infrastructure and services, which may be qualified as of poor quality and not responding to the present needs, is a major obstacle to social cohesion and the economic development; e.g. it impedes competitiveness, movement of goods and labour, business settlements, investment, etc. The upgrading of the transport system is considered urgent and

requiring huge investments, but financial constraints require prioritisation based of the earlier sound diagnosis of the transport sector, clear objectives and an integrated strategy to achieve them.

The SOPT envisages to contribute to the development of a more efficient, flexible and safe transport system, which will have a positive impact on the reduction of social and economic disparities between Romania and the EU member states.

The SOPT therefore formulates as its global objective to promote a transport system in Romania, which will facilitate safe, fast and efficient movement of persons and goods with appropriate level of service at European standards, nationally, Europe-wide and between and within Romanian regions.

There is a certain balance between the various priority axes defined and the derives key intervention areas.

However, some issues do need very close attention in the implementation of the SOPT. The institutional capacity of the Managing Authority and the implementing agencies is still not sufficient to guarantee a successful implementation of the entire SOPT according to the planned timeframe. Experience from the implementation of the ISPA programmes has shown that the issue of lack of implementing capacity should not be underestimated. It is very important to address this issue as soon as possible.

Another issue is related with the concept of sustainability. The SOPT proposes an ambitious programme for implementation of a wide range of transport infrastructure projects in Romania. Large investments are foreseen; about five billion euro in a seven-year period. Construction of new transport infrastructure implies that adequate sums should be safeguarded for routine and regular maintenance. Therefore, it is important to establish proper mechanisms to guarantee sufficient funds for the purpose of maintenance works of transport infrastructure projects.

The Managing Authority is invited to give some thoughts on the further integration of the project implementation units for the projects financed out of the Cohesion Fund and the European Regional Development Fund within the ordinary state administration in order to avoid the building of a “state within a state”.

Public consultation in all stages of programme preparation, implementation, monitoring and evaluation is very important and will definitely contribute to a more successful programme.

In summary, the following recommendations are made:

Planning of transport infrastructure and transport planning
As there still is no overall transport policy and consequently no systematic prioritisation of transport infrastructure projects, the experiences in the development of the Transport Master Plan, which is presently carried out, should be used to install a sound transport planning system in Romania and the elaboration of a good transport database to justify interventions in investments in transport infrastructure. The implementation of the SOPT would benefit from these experiences in such a way and adjustments would than easily be justified.

Setting-up a system of data collection and data processing
As there still is no reliable base of transport data and the collection of reliable transport data is an important tool for adjusting transport policy and focusing and directing investments in transport infrastructure, mechanisms should be developed to collect relevant data from transport operators, by surveys and by studies. Capacity should be developed to process these data for use by policy makers. The implementation of the SOPT would highly benefit from this.

Towards integration of transport planning systems
Integration of transport planning systems should be strived for. Presently there is no co-ordination and synergy between the three entities responsible for the Romanian road network (SOPT, ROP, EAFRD). Formal and informal mechanisms should be established to co-ordinate planning of investments in road infrastructure between the three entities responsible for it.

Financing of maintenance of transport infrastructure
Investments in new transport infrastructure implies that budgets should be guaranteed for proper maintenance of this infrastructure. Therefore, yearly budget allocations for maintenance and rehabilitation purposes should be made.

Development of institutional capacity
Institutional capacity is a serious concern for the successful implementation of the SOPT. The SOPT programme is ambitious and intends to spend a considerable amount of money in a short period of time putting a lot of pressure on the programme implementation unit. Development of institutional capacity is, therefore, a very urgent and serious issue. At the short term, a more detailed study should be carried out by the Romanian authorities to identify what capacity they need for the successful implementation of the SOPT and to quantify the needs for staffing dealing with the programme implementation. Also, a training plan should be designed for staff involved in the management and implementation of the SOPT.

Making use of public consultation
Public consultation in all stages of programme preparation, implementation, monitoring and evaluation is very important and will definitely contribute to a more successful programme. Public consultation should be further institutionalized in the Romanian transport planning process.

Use the experience of the SOPT to strengthen institutional structures
The process of development and later implementation of the SOPT should be used to strengthen the structural planning process of the Managing Authority and the Implementing Agencies.

1 Introduction

1.1 Objectives of the evaluation

The ex-ante evaluation takes place at the beginning of the cycle before a programme has been adopted.

An ex-ante evaluation helps to ensure that the final programme is as relevant and coherent as possible. Its conclusions are intended to be integrated into the programme when decisions are made.

The ex-ante evaluation should further:

- Focus primarily on an analysis of the strengths, weaknesses and potential of the Member State, region or sector concerned.
- Provide the relevant authorities with a prior judgement on whether development issues have been diagnosed correctly, whether the strategy and objectives proposed are relevant, whether there is incoherence in relation to Community policies and guidelines, whether the expected impacts are realistic, and so on.
- Serve as a a-priori quality assurance of programming and a cost-efficient budgeting, thus optimization of the programme effects with consideration of the limited resources available.
- Provide also the required foundations for monitoring and for future evaluations, by ensuring that there are explicit and, where possible, quantified objectives.
- Help to specify selection criteria for the selection of projects and to ensure that Community priorities are respected.
- Finally, help to ensure the transparency of decisions by allowing for a clear explanation of choices made and their expected effects.

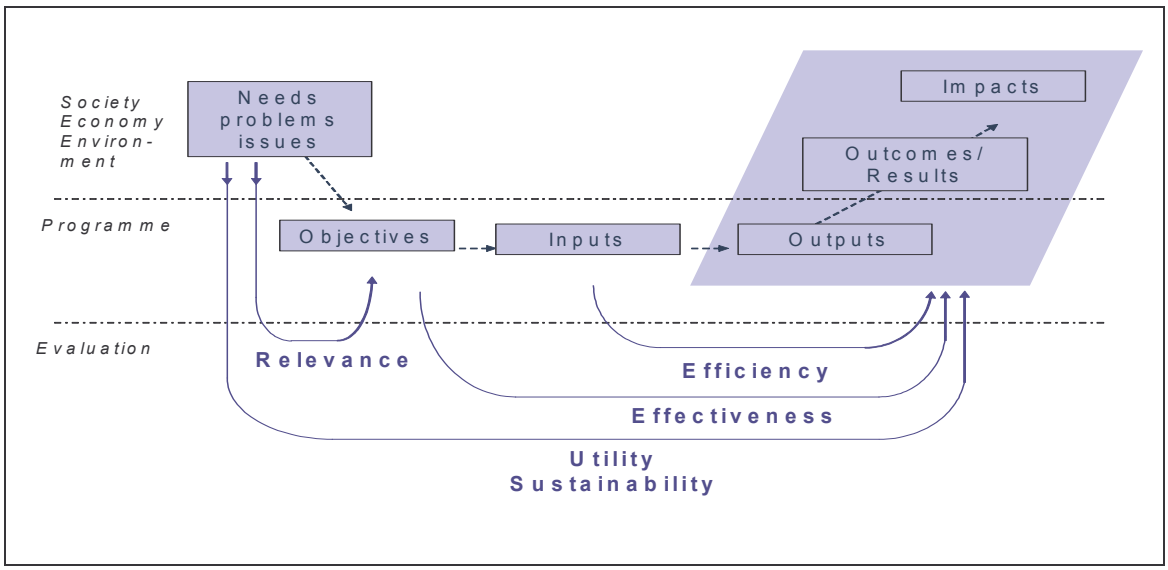
Ex-ante evaluations are performed at the time when public authorities are involved in discussions and negotiations on the future programme. They are therefore subjected to strong constraints: pressure of deadlines, vague formalisation of the proposed programme to be evaluated, amendments to this proposal while the work is underway, demands for confidentiality, etc. The evaluation team must therefore be able to intervene flexibly and rapidly, and be able to apply techniques for analysing needs and simulating socio-economic effects.

1.2 Methodology

In general, evaluations address a set of specific issues:

- *Relevance*: to what extent are the programme's objectives relevant in relation to the evolving needs and priorities at national and EU level?
- *Effectiveness*: how realistic is the programme in achieving its specific and global objectives by 2013 or earlier?
- *Efficiency*: how well are the resources (inputs) allocated with respect to outputs or results?
- *Consistence and Coherence*: are the proposed objectives and measures logically linked to the socio-economic analysis, are they mutually consistent (consistence) and are they well embedded in the regional, national and Community (e.g. Lisbon Objectives) policy objectives and interventions (Coherence)
- *Utility:* are the expected and unexpected effects realistic and globally satisfactory in the context of wider social, environmental and economic needs?
- *Sustainability:* will the effects obtained in the proposed programmes remain, even after the end of the programme without further public funding?
- *Management and monitoring arrangements*: how they may affect the achievement of programme objectives & contribute the chosen processes to positive results?

Figure 1.1 *Evaluation criteria*[1]



Source: Commission documents on evaluation

Taking the above mentioned general and specific objectives into account, in this ex-ante evaluation we will mainly focus on ***relevance***, ***effectiveness*** and ***utility***. More specific issues at the ex-ante evaluation stage are *programme*

[1] Draft Working Paper on Ex-ante Evaluation on the New Programming Period, 2007 – 2013 (Draft October 2005)

consistency (intervention logic), *policy coherence* and the *quality of implementation systems*. Finally, the ex-ante evaluation should also examine the potential risks for the programme, both in relation to the policy choices made and the implementation system proposed.

For drawing up the programmes more detailed evaluation questions have to be answered in relation to the national, regional or sector strategies to be evaluated. According to the Commissions' Working Paper Ex-Ante Evaluations for the new programmes 2007 - 2013 outline, the evaluation should answer the following questions:

BOX I **Main questions to be answered by the ex-ante evaluation**
• Does the programme represent an appropriate strategy to meet the challenges confronting the region or sector? • Is the strategy well defined with clear objectives and priorities and can those objectives be realistically achieved with the financial resources allocated to the different priorities? • Is the strategy coherent with policies at regional, national (including the National Strategic Reference Framework) and Community level? How will the strategy contribute to the achievement of the Lisbon objectives? • Are appropriate indicators identified for the objectives and can these indicators and their targets form the basis for future monitoring and evaluation of performance? • What will be the impact of the strategy in quantified terms

Source: Draft Working Paper on Ex-ante Evaluation on the New Programming Period, 2007 – 2013 (Draft October 2005)

The standard procedure for ex-ante evaluation is laid down on the Commission's draft guidelines document (October 2005). Concerning the ex-ante evaluation of the S.O.P. Transport the following additional elements of the methodology and evaluation approach can be given:

The main sources of written material taking into account in the ex-ante evaluation are:

- Regulations on the Structural Funds (General and ERDF) for 2007 – 2013.
- Community Strategic Guidelines on Cohesion 2007 - 2013[2] as well as the Lisbon Agenda.
- The National Strategic Reference Framework 2007 – 2013.
- Commission Draft Working Papers on ex-ante evaluation (October 2005) and on indicators (January 2006).
- The reference documents received from the Evaluation Central Unit during the informal kick off meeting.
- The results of previous evaluations executed for current PHARE programmes (e.g. ISPA).
- Additional information on Romanian Policy papers as they appear important during the execution of the evaluation activities.
- The Operational Programme and Programme Complement of the ACD OP and the other OPs.

[2] COUNCIL DECISION of 6 October 2006 on Community strategic guidelines on cohesion (2006/702/EC)

In addition to this meetings, interviews and surveys with and among stakeholders have been organised. For the evaluation of the Transport OP, the following fieldwork activities have been carried out:

1. Face-to-face interviews with officials (experts) of the Ministry of Transport.
2. Face-to-face interviews with other ministries and agencies which are linked to the proposed priority axes.

The following steps for the evaluation have been undertaken:

1) *The first step in the standard approach has been the appraisal of the socio-economic analysis and the relevance of the strategy to the needs identified.*

This was mainly based on desk research in which the social-economic analysis and the SWOT analysis have been checked on their consistency and an assessment has been made of the relevancy of the proposed strategy taken these analyses into account.

Results of this assessment have been discussed with the planners of MTCT to discuss our feedback for consequences of the draft OP.

2) *The second step was an evaluation of the rationale of the strategy and its consistency and policy mix.*

Mainly on basis of the desk research an assessment of the rationale of the strategy has been made and an opinion of the evaluators on the internal consistency was prepared. In this phase also local short terms experts have been involved in the evaluation.

Results of this assessment have been discussed with the planners of MTCT to discuss our feedback for consequences of the draft OP.

3) *The third step was an appraisal of the coherence of the strategy with regional and National Policies and the Community Strategic Guidelines*.

Mainly on basis of the desk research an assessment of the external coherence has been made.

Results of this have been discussed with the planners of MTCT to discuss our feedback for consequences of the draft OP.

4) *The fourth step was an evaluation of the expected results and impacts.*

The indicators proposed in the draft OP. have been checked on the basis of the SMART principles and also their quantification and their possible aggregation from project to priority and programme level have been proved.

During this phase of the evaluation local as well as international short term experts have been asked to support our evaluation activities through analyses and interviews with stakeholders involved.

Results of this have been discussed with the planners of MTCT to discuss our feedback for consequences of the draft OP.

5) *The final step was the appraisal of the proposed implementation system for managing, monitoring and evaluating the Programme.*

This phase has been mainly executed through interviews with officials of MA from the Programme Management and Payments and Certification Directorates.

Main issues identified as possible problems needing further detailed attention:
1. Institutional capacity to implement the programme.
2. Sustainability of the interventions by guaranteeing sufficient funds for maintenance of transport infrastructure projects.
3. Structural integration of Project Implementation Unit in overall planning process.
4. Use of public consultation.
5. Use of impact indicators as well as output and result indicators.

1.3 The process of the ex-ante evaluation of the SOP Transport

The process of the ex-ante evaluation of the SOP Transport has been interactive and reiterative. This process has started in the beginning of August 2006 and extends itself until to-day. In Annex 1 a list of the most relevant institutions contacted during this process can be found. Most of the institutions are related to the Managing Authority and the Implementing Agencies, but also other stakeholders have been consulted.

First contacts were established with the Managing Authorities after a first informal meeting of the ex-ante evaluation team with the Romanian authorities, which took place in Bucharest on August 8, 2006. On August 22, 2006 the first meeting of the Project Steering Committee took place. During this meeting the Managing Authority presented its Operational Programme and the evaluator made its first appraisal.

The official kick-off seminar was organized on September 25, 2006. The main objectives of this seminar were:
- To facilitate the enhancement of the partnership for ex-ante evaluation of the structural and cohesion funds.
- To raise the awareness on the utility of evaluation for improving the formulation of the operational programmes.
- To provide information on the ex-ante evaluation design and preliminary findings on each OP.
- To collect opinions of relevant stakeholders on various aspects of evaluation.

The seminar was successful and counted with the participation of 60 delegates including staff from DG Regio from the European Commission.

In October 2006 two interim meetings with the Managing Authority were organized where the ex-ante evaluator discussed its findings of the Operational Programme in detail by using detailed follow-up tables. In these follow-up

tables observations were made, questions were raised and recommendations proposed by the ex-ante evaluator to the Managing Authority for improving the quality of the SOPT. These follow-up tables basically form provide the framework and for a large part also the contents for the ex-ante evaluation report of the SOPT. Also a start was made to carry out some ad hoc analyses aiming at further improving the quality of the Operational Programme and to contribute to the enrichment of the Programme Complement.

In December 2006 the evaluator presented its draft ex-ante evaluation report to the Managing Authority. Further comments were received from various stakeholders including the Programming Unit and the Evaluation and Coordination Unit of the CSF of the of the Ministry of Finance. These comments have been taken into account in the drafting of this report.

During the ex-ante evaluation process of the SOPT, the evaluator has put the main emphasis on discussing with the Managing Authority and the Implementing Agencies issues related with the sustainability of the proposed and planned interventions; with capacity development of staff to improve the overall management of the SOPT; increasing planning capacity at the Managing Authority and Implementing Agencies; and last but not least involvement of stakeholders through public consultation in order to institutionalize the setting, adjustment and reformulation of the correct priorities.

The main reason herefore is that the SOPT as such is considered being of relatively high quality: the main problems are well identified; the strategy to address these problems is clearly defined; priority axes and key areas of interventions are in compliance with the formulated policy and objectives. The Managing Authority even has an ambitious pipeline of concrete projects and is in the stage of prioritization of projects as the needs are much larger than the available funds. The ex-ante evaluator has carried out several ad hoc analyses: to assess the capacity of the two major Implementing Agencies, the Romanian Railways and the National Company of Highways and National Roads, and a training needs assessment. Another ad hoc analysis/training is focused on the use of Cost Benefit Analysis. This is an important tool in programme management and project prioritization.

The process of the elaboration of the SOPT started well before the ex-ante evaluator did start its work and several earlier drafts had already been commented by several institutions, including the European Commission. These early comments have been incorporated in the later versions. The Managing Authority also received Technical Assistance from foreign consultants to improve the quality of the SOPT in its various stages. Apparently, lessons have been learnt from the implementation of the ISPA programme in the design of the SOPT.

2 Appraisal of the socio-economic sector analysis and the relevance of the strategy to the needs identified

2.1 Socio-economic sector analysis

The Sectoral Operational Programme Transport (SOPT) is one of the seven operational programmes under the Convergence Objective.

It is the instrument that elaborates upon objectives of the National Strategic Reference Framework (NSRF), establishing priorities, goals and the allocation of funds for development of the transport sector in Romania.

It is an important Operational Programme as it represents 23% of the overall budget of structural operations for Romania over 2007-2013.

When analysing the transport sector in Romania, it is important to take into account that there is a overall lack of reliable transport data, which makes detailed analysis of the transport system and modal trends for policy development rather difficult. It is expected that the development of the General Master Plan for Transport (GMPT) in Romania will provide the tools for improving the system of data collection as well as will produce relevant data for use for implementation, monitoring and evaluation of the SOPT. The first results from the GMPT are expected in 2007.

The SOPT provides in Chapter 1 an analysis of the present situation of the transport sector in Romania and starts by saying that one of the major problems that the sector is facing is the lack of financing of transport infrastructure in Romania in the past.

The SOPT further states that the main reasons for problems in the financing of infrastructure in Romania stem from a number of key issues, including:

- Fundamental changes in the structure of the transport sector in Romania towards a market driven transportation demand economy.
- Decline of the industries most likely to make use of rail transport.
- Regional instability in the neighbouring Balkan countries.
- Inheritance of an inadequate infrastructure and continued under-investment.
- Under-investment in infrastructure maintenance.
- Rapid increase in private vehicle ownership.
- Damage to road and rail infrastructure due to widespread flooding.

These key issues are certainly related with the problem of lack of financing. However, some are both cause and result of this lack. The development of a market driven transportation demand economy has an impact on the modal shift from railways towards road transport. Railways has always served a social need for public transportation. Necessary investments in rail infrastructure and rolling stock can not always be justified by market conditions. At the same time some

heavy industries in Romania, which used railways for transporting raw materials and processed goods, declined because of globalization and emerging competition. Less use of railway operations means less justification for investments in infrastructure and rolling stock, leading to further deterioration of performance, thus ending up in a vicious circle of overall decline and loss of competitiveness. Development of a market driven demand economy and socio-economic development also results in an increase of private vehicle ownership, thus putting extra pressure on the revenues for the public transportation system as people are using more private cars than public transportation.

It is always difficult to distinguish between cause and consequence in this respect. Lack of financing of transport infrastructure results in a further deterioration of this infrastructure and contributes towards the primacy of roads, but in the long term also deteriorates road transport as not sufficient funds are allocated for rehabilitation and maintenance of these roads. To break this vicious circle is a difficult and costly task, but it has to be done. The SOPT provides an excellent opportunity to seize this opportunity and the Managing Authority apparently intends to do so.

These identified key issues related with the lack of financing of transport infrastructure have, according the SOPT, in turn led to:

- Significant reduction in the number of tonne-kilometres of freight by rail.
- Change in pattern in international traffic flows and underutilisation of waterways for international freight transport.
- Increased need for the construction of new transport infrastructure.
- Increased reconstruction and rehabilitation needs of transport infrastructure.
- Rapid increase in the volume of traffic on the roads.

What the SOPT tries to say here is that there is indeed a modal shift towards road transport, while at the same time the huge backlog of investments in transport infrastructure is increasing as railways and inland waterways are decreasing in performance and new investments do not seem to be justified in economic terms.

The SOPT identifies the consequent effects as follows:

- Increased road congestion, road vehicle operating costs and road journey times.
- Reduced rail speeds.
- Decline in the number of rail passengers.
- Increased environmental degradation.
- Reduced competitiveness and attractiveness of the Romanian market for investment.

The ultimate consequence, according to the analysis of the SOPT, is that because of the huge modal shift towards road transport, these roads are getting congested, environmental degradation is taking place and thus economic development in Romania hindered.

The SOPT prepares the floor for addressing these consequent effects. A large amount of the proposed investments in the SOPT is for revitalizing Romanian

Railways, further develop inland waterway transport and promoting multimodal, intermodal and combined transport.

The last identified consequent effect, however, is maybe even more important: reduced competitiveness and attractiveness of the Romanian market for investment. Integration into the EU; increased competitiveness; and increased attractiveness of the Romanian market for investment can be considered as cornerstones of Romanian socio-economic policy.

The SOPT presents a comprehensive and detailed analysis of the transport sector on a mode by mode basis.

Road transport is, by far, the most important mode of transport. In 2005, it represented:
- 88% of inland passengers traffic (in passengers-km), and
- 69% of inland freight traffic (in tons – km).

The analysis of the road sector highlights a crucial problem: the lack of financing for road maintenance and road rehabilitation. The principle of road user charges is not fully implemented. The cost for basic maintenance is more than 200 million euro per year. The cost for rehabilitation is much higher; 60% of the national road network is in need of repair or rehabilitation. If new roads will be constructed, funds should be guaranteed to finance regular maintenance and rehabilitation. More analysis is needed to find alternatives and options for safeguarding financing for the road sector on medium and long term.

The road vehicle fleet is drastically increasing from almost 1.9 million vehicles in 1990 to 4 million in 2005. Car ownership is 136 cars per 1,000 people. This is still much lower than the average for EU25 463 cars per 1,000 people. So it can be expected that there will be rapid growth in car ownership over the next 10 years in Romania.

Road safety is a serious issue in Romania. The accident rate per million vehicle-km is significantly higher than in other countries. There are 743 fatalities / million cars against an EU 25 average of 239. There has been an increase in road traffic accidents from 2004 to 2005. One of the reasons mentioned in the SOPT is the emergence of so-called linear villages (villages along both sides of the highway) without a by-pass. However, more analysis is needed of the causes of the high accident rate in Romania, as it is European policy to reduce the number of fatalities in road accidents by 50% by 2010.

Railways is still an important mode of transport in Romania. However, rail transport operations have seriously decreased
- 12% of inland passengers traffic (in passengers – km), and
- 31% of inland freight traffic (in tons – km).

The infrastructure is generally in a poor condition, due to an important maintenance backlog. This results into an increasing number of speed restrictions and dangerous points.

The long term viability of the railway system could even be questioned. However, there are strong EU policies of revitalization of the rail sector, to which Romanian fully adheres.

Massive investments are needed for rehabilitation and for making railways more competitive with road transport.

Air transport is increasing rapidly with more than 4 million passengers in 2005, of which 3 million were handled through Henri Coanda International Airport in Bucharest. In 2005 there were four other major airports, which handled more than 100,000 passengers: Bucharest Aurel Vlaicu (380,000); Timisoara (336,000); Cluj-Napoca (199,000); Constanta (111,000).

Although there still is no airport development strategy (this will be addressed in the GTMP), the SOPT opts for ensuring sustained growth at the Henri Coanda International Airport.

There are many regional airports, which lack prospects for future sustained growth. It is envisaged that the GTMP will provide some guidance on the focus and possible sources for investments in regional airports. Capacity does not need to be increased. The basic priorities are catching-up with backlog of maintenance of prioritized regional airports and measures to increase airport and aviation safety.

Romania has an attractive network for water transport. Constanta is the main port on the Black Sea and the Danube provides inland waterway transport to and from other important European trading countries. Although the growth of handled traffic by the port of Constanta has increased enormously from 34 million tonnes in 2001 to 61 million tonnes in 2005, it still performs a merely national function. The port is not yet optimally used as international transit port, although it is located strategically at the Black Sea on the crossroads between Europe and Asia. In order to capitalize on this geographical situation and the potential of the port of Constanta, investments on the land side are necessary in roads and railways along the TEN-T.

The Danube is gradually being re-used after the removal of the main bottlenecks caused by regional instability in the Balkan. The potential for transport over the Danube is laying in international container transport.

This latter is directly related with the emphasis that the SOPT puts on intermodal and combined transport. Priority is given to inland waterway and the promotion of intermodal and combined transport as an alternative to road transport. The port of Constanta is an important link in the international logistic chain. The SOPT acknowledges that for the development of intermodal and combined transport the participation of the private sector is crucial.

Concluding can be said that the socio-economic sector analysis delivers a real picture of the situation in the sector and that good use has been made of available and quantified data from own data collection systems, documentation and consultancy reports. In terms of analysing transport performance sufficient measurable indicators have been used.

The ex-ante evaluator, however, would like to make two observations related with this socio-economic sector analysis:

It has been stated earlier that one should take into consideration the lack of investment in transport infrastructure over many years. Few investments in transport infrastructure in Romanian have taken place in the pre-ISPA era before 1999. The lack of investments in road and railway infrastructure and the enormous backlog in rehabilitation and maintenance of the existing infrastructure presents a real challenge for the Managing Authority. The SOPT addresses this issue in a satisfactory way. However, the bigger challenge is to create the necessary conditions and to take appropriate measures that this situation will not occur again in Romania. This can be achieved by an ambitious programme of further developing planning capacity in the broadest sense.

The earlier mentioned lack of reliable data impedes the process of forecasting of future freight, passenger and traffic flows over the transport infrastructure network in Romania and the formulation of growth scenarios. It also makes monitoring and evaluation of interventions by using indicators difficult.

2.2 SWOT

2.2.1 Analysis of SWOT

The Romanian transport sector has undergone restructuring due to the transition process towards market economy. The consequence was and is that the modal split has quickly evolved towards the supremacy of the road transport sector with a share in 2004 of 75% in passenger transport and 64% in freight transport. This is putting a heavy load on the road network. Massive investments in railway and inland waterway infrastructure are needed to revert this trend.

The socio-economic sector analysis provides the basis for the formulation of the strategy to address the identified problems in transport infrastructure and transport operations.

The Ministry of Transport, Construction and Tourism is in the middle of the process of formulating transport policy and elaborating a General Transport Master Plan. Consequently there is still no sound system in place of prioritisation of transport infrastructure projects.

In the absence of a GTMP, the SOPT concentrates on priorities and EU policies, such as development of TEN-T, mode balancing and improvement of traffic safety. This certainly makes sense. The further improvement of the integration of the Romanian transport infrastructure into the Trans European Transport Network will enable the creation of a single market and promote external trade bringing clear benefits to the Romanian economy. Mode balancing is important as well, as, for instance, railways may be an alternative for road transport for longer distances, container transport and transport of bulk and heavy materials. However, railways need massive investments and a careful Cost Benefit Analysis is required to justify such massive investments. Improvement of traffic safety is

one of the cornerstones of European transport policy and should be one of Romania's as well.

The SOPT makes explicit reference to the key transport-related issues identified in the National Development Plan:

- Insufficient capacity of domestic transport.
- Transport infrastructure is insufficiently developed.
- Access to European transport network is limited.
- Romania's location is at the crossroads between East and West and North and South.
- Opportunity to develop inland waterway transport because of access to Black Sea and the Danube River.

All of these transport-related issues identified in the NDP are being widely addressed in the SOPT.

The framework for the proposed strategy and the subsequent proposed interventions is formed by the SWOT analysis. The SWOT analysis[3] in the SOPT identifies the strengths, weaknesses, opportunities and threats of the Romanian transport sector. In essence, the SWOT should be based on an interrelated and integrated analysis and constitute the bridge between the socio-economic and sector analysis and the development of a strategy and the resulting portfolio of proposed programmes and projects.

The SWOT analysis presented in the SOPT is certainly useful and identifies important issues. However, it lacks a logical sequence. The ex-ante evaluator has proposed to put the strengths, weaknesses, opportunities and threats in a more logical sequence.

Strengths SOPT April 2006	***Strengths identified by evaluator***
Romania is located at an important point of entrance to the EU and has good potential for new road and rail links to neighbouring countries and to the Black Sea for international trade	Romania is located at an important point of entrance to the EU and has good potential for new *multimodal* transport links to neighbouring countries and to the Black Sea for international trade
Low cost skilled labour force with good basic education available although new skills will be required to meet transport reconstruction demands	Prime location along key axis on TEN-T and on Corridor IX that provides good accessibility to neighbouring countries.
Prime location along key axis on TEN-T and on Corridor IX that provides good accessibility to neighbouring countries.	Constanta Port (the largest on the Black Sea) is on TEN-T and has adequate space for expansion and increased throughput with sufficient draught for the largest ships and shipping lines who are expanding their operations and trade routes.
Well established and competitive, privately operated road freight and passenger	

[3] Analysis of the Strengths, Weaknesses, Opportunities and Threats.

services are available in most main locations Extensive railway network with innovative private operators providing local services Danube and other inland navigation waterways are well connected to provide new potential for low cost bulk freight, development of intermodal container traffic and leisure use. Constanta Port (the largest on the Black Sea) is on TEN-T and has adequate space for expansion and increased throughput with sufficient draught for the largest ships and shipping lines who are expanding their operations and trade routes. Extensive water transport resources are being developed that are well suited to low cost bulk transportation of low value commodities in an environmentally friendly mode that requires relatively little network development and maintenance and can provide a cost effective link in the development of new higher value intermodal transport systems. Multimodal transport (road/rail) is an established environmentally friendly mode and has a high share of the current Romanian inland container transport that provides a cost effective alternative to road transport	Danube and other inland navigation waterways are well connected to provide new potential for low cost bulk freight, development of intermodal container traffic and leisure use. Extensive water transport resources are being developed that are well suited to low cost bulk transportation of low value commodities in an environmentally friendly mode that requires relatively little network development and maintenance and can provide a cost effective link in the development of new higher value intermodal transport systems. Multimodal transport (road/rail) is an established environmentally friendly mode and has a high share of the current Romanian inland container transport that provides a cost effective alternative to road transport. Extensive railway network with innovative private operators providing local services. Low cost skilled labour force with good basic education available although new skills will be required to meet transport reconstruction demands Well established and competitive, privately operated road freight and passenger services are available in most main locations
Weaknesses SOPT April 2006	***Weaknesses identified by evaluator***
Transport infrastructure design and build quality was not to EU standards so that significant investment is now needed for rehabilitation to the EU standards. Insufficient institutional capacity for the management and implementation of the SOPT. It is therefore proposed that improvement in institutional capacity should be addressed through technical assistance.	Insufficient institutional capacity for the management and implementation of the SOPT. It is therefore proposed that improvement in institutional capacity should be addressed through internal resources and external technical assistance. Unclear long-term government commitment toward infrastructure financing and public service obligations. Lack of experiences in PPP in transport infrastructure.

Multimodal transport initiatives are lacking for future development A distortion previously existed between the establishment of road and rail infrastructure in favour of rail. Safety issues are regarded as a key weakness area in all but air transport as detailed in the respective sections. Good private road freight and passenger services do not operate in most rural locations. Road network is underdeveloped throughout country and poorly maintained creating high accident risk Few motorways with no links to EU, the development regions or neighbouring countries. Low maintenance investment of rail infrastructure resulting in speed restrictions and level-crossings are in poor condition. Rail wagon and locomotive provision does not meet current customer demand and for freight the few block train operations limits effectiveness for intermodal operations No coordinated contact with rail customers, no mode champion, inflexible pricing and excessive documentation. Rail passenger numbers and freight volume by rail is in decline. Low investment on new build and maintenance of fluvial and maritime port infrastructure including handling facilities. Danube navigation for large vessels limited by depth and width of canals and river and with few bridges and ferries for transit by road transport, creates a natural barrier to trade. Lack of investment in river management and services reduces the value of the waterways, with traffic loss to other modes	Road network is underdeveloped throughout country and poorly maintained creating high accident risk There are few motorways with almost no links to EU, development regions or neighbouring countries. Transport infrastructure design and construction quality is not of EU standards so that significant investment is now needed for rehabilitation to the EU standards. Low maintenance investment of rail infrastructure resulting in speed restrictions and level-crossings are in poor condition. Rail wagon and locomotive provision does not meet current customer demand and for freight the few block train operations limits effectiveness for intermodal operations No coordinated contact with rail customers, no mode champion, inflexible pricing and excessive documentation. Rail passenger numbers and freight volume by rail is in decline. Low investment on new construction and maintenance of fluvial and maritime port infrastructure including handling facilities. Danube navigation for large vessels limited by depth and width of canals and river and with few bridges and ferries for transit by road transport, creates a natural barrier to trade. Lack of investment in river management and services reduces the value of the waterways, with traffic loss to other modes. Insufficient coordination between the transport modes. Lack of concept for development of multimodal transport as a well-functioning and integrated transport system. Lack of focus on transport safety issues.

Opportunities SOPT April 2006	***Opportunities identified by evaluator***
Sustained economic growth will lead to greater international trade	Integration in Europe and increased mobility within Europe will create the potential for economic growth in all economic regions.
New opportunities to use additional EU funds for development of transport infrastructure in all transport modes.	The potential to provide greater access to Europe from the Black Sea countries and to create a cost effective transhipment point between the maritime network and the road, rail and inland waterway networks of Romania.
More privatisation to attract inward investment in all transport modes to relieve fiscal support by government.	Development of multi-/inter-modal corridors and logistic chains
Increased mobility within Europe will create the potential for economic growth in all economic regions.	Strengthening of the business climate will result in improvements in the manufacturing, agricultural and industrial sectors, leading to greater transport demand.
Strength in of the business climate will result in improvements in the manufacturing, agricultural and industrial sectors, leading to greater transport demand.	Speeding-up the processes of transport sector's restructuring through concessioning, privatization, legal promotion of competition
Potential to develop new cost effective and environmentally friendly bulk freight and container traffic by waterborne means, in addition to leisure traffic on the Danube River.	More privatisation to attract investments in transport infrastructure and transport operations.
Development of business travel and tourism by the increasing customer demand for low cost air travel to Bucharest and regional airports for trade development throughout the country.	New opportunities to use additional EU funds for development of transport infrastructure in all transport modes and further modernization of transport infrastructure and implementation of new technologies.
Potential to restructure rail operational services (more block trains) to increase the use of the cost effective multimodal transport modes for transit, international and domestic container traffic.	Potential to restructure rail operational services (more block trains) to increase the use of the cost effective multimodal transport modes for transit, international and domestic container traffic.
The potential to provide greater access to Europe from the Black Sea riparian countries and to create a cost effective transhipment point between the maritime network and the road, rail and inland waterway networks of Romania.	Potential to develop new cost effective and environmentally friendly bulk freight and container traffic by waterborne means, in addition to leisure traffic on the Danube River.

	Development of business travel and tourism by the increasing customer demand for low cost air travel to Bucharest and regional airports for trade development throughout the country.
Threats SOPT April 2006	***Threats identified by evaluator***
Project preparation and feasibility studies as well as land acquisition issues have been taking too long to implement and resolve. Unless there is an improvement in this area to conform to accession requirements there could be lost opportunities to use EU funding. If there are insufficient national funds available for co-financing investment opportunities some projects will be delayed. Unless the institutional capacity is effectively strengthened for the management and implementation of SOPT, through *inter alia* human resources development and technical assistance, implementation bottlenecks might jeopardize the investment strategy in the transport sector. The pace of reconstruction works has been slow to date and in future the N+2 / 3 rule will require faster implementation to prevent compromise or reduction in funding There is a shortage of skilled resources and there are not enough experienced contractors and suppliers in Romania to meet the developing needs and this could result in higher costs Transport infrastructure needs to be significantly upgraded with attractive rates and service levels to prevent internal transport cost increases and to encourage Romania to be seen as a route into Europe, rather than servicing only domestic traffic. Rail service, cost and efficiency for both passengers and freight must improve to prevent further decline of rail transport in favour of road transport. There is a risk that if there is insufficient response to customer demand at Constanta for improved services then both	International transit flows by-pass Romania Lack of long-term state commitment on public service obligations. Delay in implementation of reforms, restructuring, and modernization of transport sector and sub-sectors. Delay in priority projects realization. Insufficient national funds available for co-financing investment opportunities resulting in delays of project implementation. Unless the institutional capacity is effectively strengthened for the management and implementation of SOPT, through *inter alia* internal commitment, human resources development and technical assistance, implementation bottlenecks might jeopardize the investment strategy in the transport sector. Project preparation and feasibility studies as well as land acquisition issues have been taking too long to implement and resolve. Unless there is an improvement in this area to conform to accession requirements there could be lost opportunities to use EU funding. There is a shortage of skilled resources and there are not enough experienced contractors and suppliers in Romania to meet the developing needs and this could result in higher costs. Rail service, cost and efficiency for both passengers and freight must improve to prevent further decline of rail transport.

rail and waterways transport will be deprived of opportunities to expand Increased efficiency of road transport operations through the building of new motorways and through the application of all EU laws on road transport will increase competition, reduce prices and increase efficiency, making intermodal transport less attractive. There is a need to find a balance between the development of the main road and rail axis routes into Romania with increased accessibility to national routes and services, with the limited funds available	There is a risk that if there is insufficient response to customer demands at Constanta for improved services then both rail and waterways transport will be deprived of opportunities to expand. There is a need to find a balance between the development of the main road and rail axis routes into Romania with increased accessibility to national routes and services, with the limited funds available

The ex-ante evaluator analyses the SWOT of the Romanian transport sector in a summarized way by clustering individually identified strengths, weaknesses, opportunities and threats as follows:

- The *strengths* relate mainly to:
  - The strategic geographic location of Romania and its connection to the European transport network.
  - Its potential to develop international multimodal/intermodal transport (ports, inland waterways, railways).
  - Availability of low cost qualified labour and efficient road transport services.

- The identified *weaknesses* can be classified as follows:
  - Lack of institutional capacity to implement the SOPT.
  - Lack of investments in motorways, other roads, railway infrastructure, inland waterway transport, maritime transport.
  - Lack of integrated transport infrastructure network.
  - Railway operations, multimodal transport operations and river management services not responding to users needs.
  - Lack of focus on safety standards in all modes except air transport.
  - Lack of long-term planning commitment, modal coordination and promotion of private investments (this is added by the ex-ante evaluator).

- The following *opportunities* are distinguished:
  - Integration in Europe and increased mobility facilitates economic growth and trade.
  - Develop a corridor concept for multimodal transport using Romania's ports, inland waterways and railways.
  - Improved business climate and attraction private and public investments in transport infrastructure and operations.
  - Development tourism.

- Finally the *threats* can be summarized as follows:
  - The costs of transport services remain high and these services do not respond to customers demand resulting in a low level of international transit trade.
  - Lack of cofinancing for implementation SOPT.
  - Lack of institutional implementation capacity; long duration project pipeline.
  - Not integrated transport network because of lack of coordination.

The following external developments can be identified, which influence the proposed SWOT:

- The transit traffic between EU and Asia will further develop and Romania should attract a significant share of it.
- The transport demand will grow after Romanian accession in EU resulting in further growth of international freight transport/transit.
- Changing production structure and commodity-mix are in favour of road transport development.
- Limited growth of domestic freight transport because of limited domestic market.
- Increasing personal incomes will accelerate car ownership and car use that will generate (sub) urban traffic problems and need for increased public transport facilities.

2.2.2 Assessment of the SWOT

For the assessment of the SWOT, it is to important evaluate whether it is based on and can be logically derived from a correct analysis of the transport sector or that is a listing of incidental issues without any coherence or consistency. There should also be a certain balance between identified Strengths, Weaknesses, Opportunities and Threats. Furthermore, the topics mentioned in the SWOT analysis should be as much as possible tangible, measurable and usable.

Most of the identified *Strengths and Weaknesses* can be deduced from the socio-economic sector analysis of the SOPT. The strengths are mostly focused on the unexploited potential of Romania for international trade by its geographical situation and its basic transport infrastructure, in particular the port of Constanta, inland waterways and railway infrastructure. The weaknesses refer to deteriorated state of infrastructure; transport operations not responding to customers needs; lack of institutional capacity. It is observed by the ex-ante evaluator that the lack of intra-sectoral, intersectoral and regional planning and coordination should be considered to be a weakness.

Regarding the identified *Opportunities and Threats* the most important opportunity is the integration of Romania in Europe, which will boost economy and trade, but requiring a appropriate transport infrastructure network and efficient and competitive international transport services. Further, the strength of its geographical situation can be capitalized by developing a fast, efficient and effective transit corridor in Romania along the European transport networks. The opportunities, which result from improved business climate and attraction of private investors are less tangible. Development of tourism is certainly an opportunity. The main threats are the continuing lack of institutional capacity, but also the

lack of cofinancing. Higher transport costs as an overall threat is a general consequence of the state of transport infrastructure and transport operations in the a competitive international business environment.

It is obvious that the SOPT can not address all identified strengths, weaknesses, opportunities and threats in the SWOT analysis as it has it has to take into account the specific requirements from the use of the Structural Funds. However, it would be logical to link the proposed priority axes and key areas of interventions of the SOPT as much as possible to the outcome of the SWOT analysis. Lack of coordination, however, may result in the fact that the Romanian economy will not benefit to its full extent from this opportunity as local and regional connection to this international network is failing and missing.

2.3 Relevance

The evolving needs and priorities for the transport sector in Romania at national and EU level are the provision of an adequately developed, modern and sustainable infrastructure, appropriately maintained, facilitating the safe and efficient movement of persons and goods nationally and within Europe and contributing positively and significantly to the economic development of Romania.

The present state of the transport infrastructure and services can be qualified as of poor quality and not responding to the present needs. This constitutes a major obstacle to territorial and social cohesion and further economic development; e.g. it impedes competitiveness, movement of goods and labour, business settlements, investments, etc. There is a huge backlog in investments in transport infrastructure from the past. New transport infrastructure has to be built and further integration of the transport network should be achieved. The upgrading of the transport infrastructure system to EU standards is also identified as priority. Rehabilitation and maintenance of existing transport infrastructure are urgent and requiring huge investments. Financial constraints, however, require a prioritisation based of the earlier sound diagnosis of the transport sector, clear objectives and an integrated strategy to achieve them. In the SWOT analysis the SOPT emphasizes the need to address in particular the road and railways, but also attention has been paid to the river and maritime port infrastructure. It is, however, acknowledged that there is a need to effectively strengthen the institutional capacity for the management and implementation of the SOPT.

The potential of Romania is described in the socio-economic analysis of the sector and the strengths are identified in the SWOT-analysis: the location along Trans European Transport Corridors; the extensive network of railway infrastructure; and inland waterway facilities and the port of Constanta on the Black Sea. The further development of this potential will bring economic benefits to the country.

The SOPT envisages to contribute to the development of a more efficient, flexible and safe transport system, which will have a positive impact on the reduction of social and economic disparities between Romania and the EU member states.

The SOPT therefore formulates as its global objective to promote a transport system in Romania, which will facilitate safe, fast and efficient movement of persons and goods with appropriate level of service at European standards, nationally, Europe-wide and between and within Romanian regions.

This global objective has been specified as follows:

i. Promote international and transit movements of people and goods in Romania by providing effective connections of the port of Constanta, as well as Greece, Bulgaria and Turkey, with the EU through the modernization and development of the relevant TEN-T priority axes
ii. Promote effective movement of persons and goods among Romanian regions and their transfer from the hinterland to priority axes by modernizing and developing national and TEN-T networks
iii. Promote the development of a balanced transport system of modes, based on the respective competitive advantage of each, by encouraging the development of rail, waterborne and intermodal transport, and
iv. Promote sustainable development especially by minimizing adverse effects of transport on the environment and improving safety.

In order to achieve the objectives of the SOPT it is proposed to allocate the relevant EU and State funds for transport towards the implementation of the following priority axes:

1. Modernization and development of TEN-T priority axes
   This priority axis includes road, railway and water transport infrastructure along the TEN-T priority axes. There is a logical balance in the investments in the road and railway sector.

2. Modernization and development of the national transport infrastructure outside the TEN-T priority axes
   This priority axis includes national road and railway infrastructure and the development of fluvial and maritime and airport infrastructure.

3. Upgrade the railway passenger rolling stock on the national and TEN-T railway networks
   The upgrade of the railway passenger rolling stock and TEN-T railway networks is necessary for reverting the trend of the decreasing number of passengers by train and is a serious attempt to promote sustainable and a relatively environmentally friendly mode of transport.

4. Sustainable development of the transport sector
   For promoting a sustainable development of the transport sector, emphasis is put on creating the conditions for further developing multimodal transport; improve traffic safety; and minimize the negative effects of transport on environment. On this last item more detailed information can be found in the Strategic Environment Assessment, which is attached to this main document.

5. Technical Assistance
   The fifth priority axis focuses on support for effective managing, implementing, monitoring and controlling the SOPT. This is a very

important component of the SOPT and a condition sine qua non for the successful implementation of the programme.

For each priority axis, key areas of interventions were identified.

The ex-ante evaluator considers the programme consisting of the five priority axes and the key areas of interventions as described in the SOPT as addressing the present needs of the sector. This will be further elaborated in the next chapter where the rationale of the strategy will be assessed. The proposed priorities and measures can be derived from the analyses of the situation in the transport sector. The formulated objectives and the proposed strategy are sufficiently relevant in relation to the identified weaknesses and strengths. The proposed strategy is also sufficiently relevant in relation to the identified trends and future challenges.

2.4 Overall conclusions

The SOPT provides a relatively comprehensive overview of the needs related with the development of the transport sector in Romania. These needs have been translated into a strategy at the level of the Operational Programme as there still is no General Master Plan for the Transport Sector with definition of global objectives; specific objectives; list of priority axes and key areas of intervention. There is a certain logical coherence in this process.

It goes without saying, however, that with a more reliable database development of transport policy would be much easier and programme and project interventions could be more focused and targeted to implement this policy.

Concluding, the ex-ante evaluator considers the presented strategy and the programme as a whole as relevant.

3 Evaluation of the rationale of the strategy and its consistency

3.1 Introduction

The evaluation of the rationale of the strategy and its consistency forms the core of the ex ante evaluation. It addresses the issue whether the chosen strategy is appropriate to alleviate the identified problems and to achieve the formulated objectives.

The evaluation of the rationale of the strategy focuses on the logic of the choice for particular priorities; on the shares and weights between priority axes and areas of interventions; on complementarity of certain proposed interventions and possible conflicts between intended programmes and projects.

The assessment of the consistency of the strategy deals with justification of the strategy and its compliance with national and European policy directions; the balance between specific objectives, identified areas of interventions and available resources; and the appraisal of the policy mix.

3.2 Assessment of the rationale of the strategy

A preliminary conclusion is that the strategy proposed and its strategic objectives are sufficiently relevant in relation to the problems, needs and potentials as identified in the SWOT analysis. Most SWOT statements can be traced back to the outcome of the socio-economic analysis

The strategy of the SOPT is derived from the Strategic Objective of the Romanian National Strategic Reference Framework (NSRF) for 2007-2013, which on its turn is based on the National Development Plan. The strategy for the transport sector is clearly described in these three documents and is consistent.

The global objective of the SOPT is to promote a transport system in Romania, which will facilitate safe, fast and efficient movement of people and goods nationally and internationally to European standards. The SOPT is one of the most important pillar of NSRF, having a significant impact on the economic and social development of the country.

In order to achieve the objective of the SOPT it is proposed to focus the EU and State funds for transport, on modernization and development of TEN-T and national infrastructure for all transport modes. The railway network has an important role in Romanian transport infrastructure and its development implies not only investments in infrastructure, but also the improvement of services quality. In the framework of this modernization process special attention will be given to the sustainable development of the transport sector.
In order to achieve the global objective of the SOPT, it is proposed to allocate the relevant EU and State funds for transport towards the implementation of the following priority axes:

1 Modernization and development of TEN-T priority axes (72% of total Community funding; CF)
2 Modernization and development of the national transport infrastructure outside the TEN-T priority axes (19% of total Community funding; ERDF)
3 Upgrade the railway passenger rolling stock on the national and TEN-T railway networks (3% of total Community funding; ERDF)
4 Sustainable development of the transport sector (5% of total Community funding; ERDF)
5 Technical Assistance (1% of total Community funding; ERDF)

In Table 3.1 as assessment is made of the relation between the summarized SWOT analysis and the proposed priority axes:

Table 3.1 *Relation SWOT and proposed Priority Axes*

SWOT statements	**Linked to Priority Axes**
Strengths	
– The strategic geographic location of Romania and its connection to the European transport network.	1,2,4
– Its potential to develop international multimodal/intermodal transport (ports, inland waterways, railways).	1,2,4
– Presence of low cost qualified labour and efficient road transport services.	
Weaknesses	
– Lack of institutional capacity to implement the SOPT.	5
– Lack of investments in motorways, other roads, railway infrastructure, inland waterway transport, maritime transport.	1,2,4
– Lack of integrated transport infrastructure network.	1,2,4,5
– Railway operations, multimodal transport operations and river management services not responding to users needs.	1,2,3
– Lack of focus on safety standards in all modes except air transport.	1,2,4

– Lack of long-term planning commitment, modal coordination and promotion of private investments (this is added by the ex-ante evaluator).	5
Opportunities	
– Integration in Europe and increased mobility facilitates economic growth and trade.	1,2,4
– Develop a corridor concept for multimodal transport using Romania's ports, inland waterways and railways. – Improved business climate and attraction private and public investments in transport infrastructure and operations.	1,2,4,5
– Development tourism.	1,2,3,4
Threats	
– The costs of transport services remain high and these services do not respond to customers demand resulting in a low level of international transit trade.	1,2,3,4
– Lack of cofinancing for implementation SOPT.	
– Lack of institutional implementation capacity; long duration project pipeline.	5
– Not integrated transport network because of lack of coordination.	5

The conclusion from this assessment is that the proposed priority axes match reasonably well with the results of the SWOT analysis.

From the summarized 17 items from the SWOT analysis, 4 are addressed by four priority axes and 6 items are addressed by three priority axis.

Table 3.2 *Quantification of match between SWOT summarized issues and proposed priority axes*

No. SWOT issues	*0 PA*	*1 PA*	*2 PAs*	*3 Pas*	*4 PAs*	*5 PAs*
17	3	4	0	6	4	0
Frequency PA matches		*PA 1*	*PA 2*	*PA 3*	*PA 4*	*PA 5*
		10	10	3	9	6

Only three items from the SWOT analysis are not directly addressed by the priority axes. It is noted that the priority axes 1 and 2 both have 10 matches with the summarized items identified in the SWOT analysis.

Table 3.3 *Financial plan in current prices for SOP Transport*[4]

Financing Plan of the SOP TRANSPORT with the Annual Commitment of Each Fund in the Operational Programme			
Financial Plan Current Prices	Structural Funding (ERDF) (1)	Cohesion Fund (2)	Total (3) = (1)+(2)
2007	84,938,144	223,151,971	308,090,115
2008	122,249,222	319,099,620	441,348,842
2009	174,085,731	429,019,784	603,105,515
2010	202,851,916	515,554,203	718,406,119
2011	219,643,530	554,654,920	774,298,450
2012	234,263,424	596,207,451	830,470,875
2013	251,300,243	638,917,136	890,217,379
Grand Total 2007-2013	**1,289,332,210**	**3,276,605,085**	**4,565,937,295**

Note: All funding is for regions without transitional support. All amounts in €, current prices.

Financial plan of the SOP TRANSPORT giving, for the whole programming period, the amount of the total financial allocation of each fund in the operational programme, the national counterpart and the rate of reimbursement by priority axis								
	Community Funding (a)	National counterpart (b) = (c) + (d)	Indicative breakdown of the national counterpart		Total funding (e) = (a)+(b)	Co-financing rate* (f) = (a)/(e)	For information	
			National Public funding (c)	National private funding (d)			EIB Contribution	Other funding
Priority Axis 1 CF	3,276,605,085	578,269,513	578,269,513	-	3,854,874,598	85.08%	-	-
Priority Axis 2 ERDF	864,128,373	288,040,545	288,040,545	-	1,152,168,918	75.00%	-	-
Priority Axis 3 ERDF	128,108,186	128,108,186	128,108,186	-	256,216,372	50.00%	-	-
Priority Axis 4 ERDF	245,525,617	120,110,942	81,842,250	38,268,692	365,636,559	67.15%	-	-
Priority Axis 5 ERDF	51,570,034	17,197,824	17,197,824	-	68,767,858	74.99%	-	-
Total	**4,565,937,295**	**1,131,727,010**	**1,093,458,318**	**38,268,692**	**5,697,664,305**	**80.14%**	-	-

* *The co-financing rates for all Priority Axes are calculated on a total cost basis (public and private).*

[4] Financial plan sent to DG Regio by the Ministry of Public Finance on November 3, 2006

The following principles have been used:

- Activities will be co-financed through CF/ERDF and State Budget;
- Funding will be allocated among the five SOPT priority axes;
- Each axis will be supported by one or more key areas of intervention*;*
- Each key area of intervention is one, or a group of projects;
- For each axis, measurable assessment indicators will be developed;
- The priority axes and operations conform to community and national policies.

The next table shows a breakdown by key area of intervention:

Table 3.4 *Breakdown CF/ERDFFunding of SOPT by key area of intervention (source: Programme Complement, 8/2006)*

Priority Axis		**C.F.**	**ERDF**	**EUTotal**	**% Total**	**% C.F.**	**% ERDF**	**% P.A.**
1.	***Trans European Infra-structure***	***2.878***		***2.878***	***72%***			
1.1.	*Roads*	1.413		1.413		49%		
1.2.	Railways	1.294		1.294		45%		
1.3.	Waterways	171		171		6%		
2.	***National Transport Infra-structure***		***756***	***756***	***19%***		***67%***	
2.1.	*Roads*		*350*	*350*				*46%*
2.2.	*Railways*		*265*	*265*				*35%*
2.3.	*Waterways*		*118*	*118*				*16%*
2.4.	*Airtransport*		*22*	*22*				*3%*
3.	***Railway passenger rolling stock***		***115***	***115***	***3%***		***10%***	
3.1.	*Modernise rolling stock*		*115*	*115*				
4.	***Sustainable development***		***216***	***216***	***5%***		***19%***	
4.1.	*Promote inter-model transport*		*25*	*25*				*12%*
4.2.	*Improve traffic safety*		*178*	*178*				*82%*
4.3.	*Minimise environmental effects*		*12*	*12*				*6%*
5.	***Technical Assistance***		***45***	***45***	***1%***		***4%***	
5.1.	*Management, implementation, etc*		*34*	*34*				
5.2.	*Information and promotion*		*11*	*11*				

	SOPT Total	**2.878**	**1.132**	**4.010**	**100%**	**100%**	**100%**	
	Infrastructure total							
	Roads	1.763			49%			
	Railways	1.559			43%			
	Waterways	289			8%			
	Airtransport	22			1%			
	Total infrastructure	3.633			100%			

The financial figures are different than the ones provided in the financial plan provided to DG Regio in November 2006. They come from the Programme Complement from August 2006 and give a good indicator for the weight attached to the various areas of intervention, including a breakdown of the proposed budget among the different modes of transport.

The rationale of the strategy proposed, its global objectives and the definition of the priority axes and key areas of interventions are sufficiently relevant in relation to the problems, needs and potentials as identified in the SWOT analysis. In some cases, however, their coverage can not totally be derived from the analysis but find their source in other programme documents, studies or from directly the NDP and the NSRF. It is also important to take into account that the Regional Operational Programme and the National Rural Development Programme also address the needs for regional, local and rural road infrastructure and are, thus, complementary to the SOPT.

3.3 The consistency of the strategy

The SWOT analysis identified the following weaknesses in the Romanian transport sector:

- Lack of investments in motorways, other roads, railway infrastructure, in-land waterway transport, maritime transport.
- Lack of integrated transport infrastructure network.
- Railway operations, multimodal transport operations and river management services not responding to users needs.
- Lack of focus on safety standards in all modes except air transport.

Simultaneously the following opportunities were distinguished:

- Integration in Europe and increased mobility facilitates economic growth and trade.
- Develop a corridor concept for multimodal transport using Romania's ports, inland waterways and railways.
- Improved business climate and attraction private and public investments in transport infrastructure and operations.
- Development tourism.

The strategy to address these issues seems to be consistent. The most important deficiencies in the transport system are being addressed by the SOPT. There is also certain balance in the interventions in the most important modes of

transport with the major emphasis on road infrastructure and railways. It is important to take into account that the Regional Operational Programme and the National Rural Development Programme also address the issue of regional, local and rural road infrastructure and can as such be considered as complementary to the SOPT.

Table 3.5 *Proposed budget breakdown ERDF/CF financed projects*[5]

Areas	**EU financed (in million €)**	**%**
Roads		*43.9*
- TEN-T	1412.69	35.2
- National roads	350.43	8.7
Railways		*41.7*
- TEN-T	1294.18	32.2
- National railways	265.19	6.6
- Rolling stock passenger	115.00	2.9
Water Transport		*7.9*
- TEN-T	171.12	4.3
- National	118.44	3.0
Airports		*0.6*
- National	22.11	0.6
Intermodal	25.20	0.6
Traffic safety	178.28	4.4
Environment	12.07	0.3
Technical support	33.96	0.8
Information	11.32	0.3
GRAND TOTAL	4010.00	100

As Table 3.5 shows, 43.9% of the EU financed part of the SOPT is directly earmarked for road infrastructure and 41.7% for railway infrastructure and rolling stock. The balance between road and railway shows the perception of the Managing Authority that railways is an important component in the SOPT and may contribute to fulfil the objectives of transport policy. Also can be seen that by large the major part goes to strengthening international cohesion and linking the Romanian infrastructure to the main European international transport corridors. Again the balance between road and railways is striking: 35.2% of the EU financed part of the SOPT is proposed for road infrastructure along the TEN-T and 32.2% for railway infrastructure along the TEN-T. Low priority has been given to public investments in airports, while a reasonable amount of investments are planned for inland waterway transport. As said before, this breakdown, however, is indicative.

The whole amount of the Cohesion Fund is intended to be used for the implementation of three priority axes. It is, however, noted that 72 per cent of

[5] As proposed in the Programme Complement dated August 2006. This breakdown is indicative as still changes are being made by the Managing Authority.

the total Community funding is for the development and modernisation of the TEN-T priority axes, while only 5 per cent of the Community funding is earmarked for sustainable transport and only 1 per cent for Technical Assistance.

Paragraph 3.4 presents in more detail an assessment of the proposed priority axes and key areas of interventions.

3.4 Priority axes and key areas of intervention

	Comments by ex-ante evaluator
Priority axis 1: *Modernization and development of TEN-T priority axes*	
Modernization and devel opment of road infrastructure along the TEN-T priority axis 7	This measure is aiming at enhancing the territorial cohesion between Romania and the other Member States of the EU. As such this measure stands at the core of the Cohesion Fund. The completion of the construction of the motorway in the norther arm on TEN-T 7 (Nadlac-Constanta) is considered one of the priorities.
Modernization and development of railway infrastructure along the TEN-T priority axis 22	This measure is aiming at enhancing the territorial cohesion between Romania and the other Member States of the EU. As such this measure stands at the core of the Cohesion Fund. This measure aims at making the railway infrastructure *inter-operable* along the TEN-T priority axis 22 (Curtici - Constanta); also at improving the quality of rail service by modernizing the railway infrastructure and raising the maximum operational speed to 160 km/h for passengers trains and 120 km/h for freight trains. This key area of intervention also introduces the ERTMS/ETCS level 2 systems and complies as such with European standards. It will contribute to the development of the international transit corridor through Constanta.
Modernization and development of water transport infrastructure along the TEN-T priority axis 18	This measure is aiming at enhancing the territorial cohesion between Romania and the other Member States of the EU. As such this measure stands at the core of the Cohesion Fund. The measure addresses TEN-T Priority axis 18, which includes the River Danube along its full length, the Black Sea canal to the port of Constanta as well as the Midia - Poarta Alba canal. It aims at developing the inland water transport infrastructure in Romania in order to increase its utilisation. It will contribute to the development of the international transit corridor and the use of inland waterways for transportation. As such it contributes to the development of sustainable transport.

Priority axis 2: *Modernization and development of the national transport infrastructure outside the TEN-T priority axes*	
Modernization and development of national road infrastructure	This key area of intervention aims at modernizing and developing road infrastructure located on the national network outside the TEN-T priority axes. Its objective is to increase passenger and freight traffic with higher degree of safety, speed and quality of service. It is fully compatible with the cohesion policy's objective of developing secondary network connections to the TEN-T priority axes in order to address effectively territorial cohesion Europe-wide as well as among Romania's regions.
Modernization and development of national railway infrastructure	This key area of intervention aims at modernizing and developing railway infrastructure located on the national network outside the TEN-T priority axes. It takes into account *rail inter-operability* on the national rail infrastructure outside TEN-T priority axes by modernizing rail sections, and by rehabilitating railway stations, bridges and tunnels. This key area of intervention also introduces the ERTMS/ETCS level 2 systems and complies as such with European standards.
Modernization and development of river and maritime ports	This measure will facilitate port operations and efficiency, increase container stacking and handling capacity, and increase vessel safety in the port of Constanta. Similar interventions on other Danube ports are planned. The implementation of this measure will certainly contribute to the strengthening of the transport transit corridor and promote inland waterway transport.
Modernization and development of air transport infrastructure	This measure is not very concrete yet. It only spells out that interventions will be planned on the TEN-T airports. In particular, attention will most probably be paid to Henri Coanda International Airport. The Managing Authority is still waiting for the GTMP where prioritization will be made concerning interventions and investments in international, national and regional airports.
Priority axis 3 *Upgrade the railway passenger rolling stock on the national and TEN-T railway networks.*	
Upgrade the railway passenger rolling stock with up to date train units	This priority axis at promoting appropriate balance among modes of transport. It aims at faster, safer and higher quality services at inter-operable European

	standards for domestic and international rail passengers by modernizing the railway rolling stock thus allowing rail to compete effectively with the growing road passenger transport. The introduction and use of new and modern train units of European standards for rail passengers will improve speed, comfort and safety of rail passengers, attract more of them on the national networks, and thus compete effectively with the growing use of private cars. It will contribute to a better balance between road and railways and facilitates inter-operability by equipping the train units with the European Train Control System (ETCS).
Priority axis 4 *Sustainable development of the transport sector*	
Promote inter-modal transport	This priority axis will promote increased levels of safety, minimize adverse effects on the environment as well as promote intermodal and combined transport. This measure promotes the development of intermodal terminals and/or combined transport logistics and distribution centres covering terminal infrastructure. It also promotes the use of railways in multimodal, intermodal and combined transport. The measure contributes towards achievement of sustainable transport and simultaneously promoting the development of international multimodal transport corridors through Romania.
Improve traffic safety across all transport modes	This key area of intervention ensures implementation of European standards of safety and security across all transport modes. It addresses as such important issues in European and Romanian transport policy.
Minimize adverse effects of transport on the environment	These measures include the introduction of efficient non-polluting/environment-friendly transport infrastructure initiatives, in full compliance with European standards across all transport modes and in observance to the Kyoto Agreement. It addresses as such important issues in European and Romanian transport policy.
Priority axis 5 *Technical Assistance for SOPT*	
Provide support for effective SOPT managing, implementing, monitoring and controlling	The most important component of this priority axis is institutional support and strengthening of the administrative capacity of the Managing Authority and the Implementing Agencies. New staff will be needed and existing staff will need to be trained in both general administrative duties and technical aspects of transport project management within the MA and IAs.

Provide support for information and publicity regarding SOPT	Special attention is paid in the area of intervention to dissemination of information on the implementation of the SOPT. It is important to use this measure as well to collect and process feedback from the stakeholders on the implementation of the SOPT.

The proposed priorities axes and key interventions proposed can easily be considered as complementary to each other. All these measure will contribute to the development and improvement of transport infrastructure in Romania focusing on capitalizing the strengths and opportunities as identified in the SWOT analysis and reducing, decreasing and ultimately removing weaknesses and threats.

3.5 Overall conclusions rationale and consistency

Concerning the rational and the consistency of the proposed strategy, the general conclusion is justified that the Sector Operational Programme Transport will certainly contribute to develop the transport infrastructure and support and promote of sustainable economic and social development in Romania.

It can not be expected that the successful implementation of the SOPT will address all weaknesses and threats identified in the analysis of the socio economic situation and the state of the Romanian transport infrastructure within the programme period 2007-2013. However, it will certainly contribute to address the basic needs.

The choice of particular priorities as well as the decisions taken on the shares and the weights of the proposed budget's division are sufficiently justified from the socio-economic analysis and can be explained from the intervention logic.

The priority axes and the actions proposed can be considered are sufficiently complement and synergy between them can certainly be expected. All proposed actions can contribute to improved state of transport infrastructure and increased efficiency and effectivity of the Romanian transport system.

In the framework of this evaluation possible conflicts amongst the proposed objectives could not be detected.

The proposed policy mix can be considered as an optimal one and does not conflict with each other.

4 Appraisal coherence of the strategy with EU, National and Regional policies and the Community Strategic Guidelines

4.1 Appraisal compatibility strategy with EU policy objectives and the Community Strategic Guidelines on cohesion

The SOPT makes explicit reference to the Lisbon Strategy, the Community strategic guidelines for the cohesion policy in support of Growth and Jobs and the conclusions of the European Council from Goteborg 2001 related to growth, jobs and sustainable development.

In accordance with the integrated guidelines for growth and jobs of the renewed Lisbon agenda, the programmes supported by cohesion policy should seek to target resources on the following three priorities (1):

- improving the attractiveness of Member States, regions and cities by improving accessibility, ensuring adequate quality and level of services, and preserving the environment,
- encouraging innovation, entrepreneurship and the growth of the knowledge economy by research and innovation capacities, including new information and communication technologies, and
- creating more and better jobs by attracting more people into employment or entrepreneurial activity, improving adaptability of workers and enterprises and increasing investment in human capital.

The Community Strategic Guidelines (Council Decision 6 October 2006 on Community strategic guidelines on cohesion) mention that in the case of regions and Member States eligible for support under the Convergence objective, the aim should be to stimulate growth potential, so as to achieve and maintain high growth rates, including addressing deficits in basic infrastructure networks and strengthening institutional and administrative capacity. The territorial dimension of cohesion policy is important and all areas of the Community should have the possibility to contribute to growth and jobs. Accordingly the strategic guidelines should take account of investment needs in both urban and rural areas in view of their respective roles in regional development and in order to promote balanced development, sustainable communities and social inclusion.

One of the most important elements in the Community Strategic Guidelines relates to the concept of territorial cohesion. An appraisal of the coherency of the strategy of the SOPT, which relates to the territorial dimension of this operational program, therefore, is opportune. Territorial planning in Romania takes in principle place at three levels: at national, zonal and on county level. The planning documents that are drafted for these levels should form important tools for spatial and regional economic planning in Romania and take into account the planning of transport infrastructure as well. Within the Ministry of Transport, Construction and Tourism, a department exists dealing with spatial planning at different planning levels. Nevertheless, co-ordination between the different sectors on the issue of integrated territorial planning still can be improved. An effec-

tive spatial planning instrument, however, is still missing. This lack of such an effective planning instrument could in the long term have negative effects on balanced regional developments and the territorial cohesion in Romania.

As the SOPT is definitely impacting on economic growth and employment some additional core indicators to measure specific and global impacts at programme level have to be defined. Proposals for such indicators are provided in the annex on indicators.

Reference still should be made to the Regions for Economic Change initiative[6] and arrangements could be made to facilitate the integration of innovative operations related to the results of the networks in which the region is involved.

The SOPT also took into account the White Paper on European Transport Policy (2001) and the Trans-European Transport Networks (TEN-T). The White Paper on European Transport Policy (2001) focuses on the following priorities:

- Revitalising the railways
- Improving quality in the road transport sector
- Promoting sea / inland waterways
- Balancing air transport and the environment
- Turning intermodality into reality
- Trans-European transport network
- Improving road safety
- Adopting a policy on effective charging for transport
- Recognising the rights and obligations of users
- Developing high-quality urban transport
- Research and technology
- Managing globalisation
- Developing environmental objectives

Many of the issues are addressed by the SOPT. In particular, the priorities assigned to railways by the SOPT are relevant in this respect.

4.2 Appraisal compatibility with NSRF

In the "Strategy" chapter of the SOPT reference is made to the overall development goals of the National Strategic Reference Framework (NSRF).

The Strategic Objective of the Romanian National Strategic Reference Framework (NSRF) for 2007-2013 addresses promotion of competitiveness, development of basic infrastructure and development and effective use of human resources, building administrative capacity and promote a balanced territorial development with a view to reducing the social and economic development disparity between Romania and EU member states.

The implementation of the SOPT will contribute to these priorities established by the NSRF as Table 4.1 shows:

[6] Consult Communication from the Commission "Regions for Economic Change", COM(2006)675 final, 8.11.2006, {SEC(2006)1432}.

Table 4.1 *Contribution of Transport SOP to the NSRF Priorities*

	Develop Basic Infrastructure to European Standards	Increase the L-T Competitiveness of the Romanian Economy	Development and More Efficient Use of Romania's Human Capital	Building Effective Administrative Capacity	Promote Balanced Territorial Development
Priority Axis 1: ***Modernization and development of TEN-T priority axes***	♦	♦			♦
Priority Axis 2: ***Modernization and development of the national transport infrastructure outside the TEN-T priority axes***	♦	♦			♦
Priority Axis 3: ***Upgrade the railway passenger rolling stock on the national and TEN-T railway networks***	♦		♦		♦
Priority Axis 4: ***Sustainable development of the transport sector***	♦				
Priority Axis 5: ***Technical Assistance***	♦			♦	

The principal objective for the transport sector in the NSRF focuses on the provision of an adequately developed, modern and sustainable infrastructure, appropriately maintained, facilitating the safe and efficient movement of persons and goods nationally and within Europe and contributing positively and significantly to the economic development of Romania.

The SOPT states that the transport sector in the NSRF is fully consistent with, and promotes the Lisbon and Gothenburg strategies of growth, jobs and sustainable development. The NSRF estimates an overall net increase in the average number of employees of about 130,000 persons by 2013 compared to 2005 as result of all Structural Fund interventions. The SOPT is not directly targeted to create new jobs or increase employment growth. However, the construction of infrastructure creates or at least maintains a significant number of jobs. Although being a temporarily employment effect it will have a significant influence on labour market developments for a number of years as the investment period is relatively long. Furthermore, the envisaged increase in transport activities will have an impact on the economic development as a whole and therewith an employment effect.

According to macroeconomic forecasts of the National Commission for Prognosis, Romania's GDP will increase on average by 5.6%, in the period 2007 – 2013. The economic growth will be based on the domestic demand, especially on Government's investments, including those financed with the support of the EU funds. The NRSF estimates that the impact of the Structural and Cohesion Funds will generate an additional 15% increase in Romania's GDP by 2015 compared to a situation without these funds. This growth estimate was calculated by using a macroeconomic model in which improvements of transport infrastructure were used as one of the key factors to generate growth. However, it will be rather dif-

ficult in the framework of a SOPT monitoring system to simply isolate the particular impact of the SOPT on the economic growth rate. Therefore, a SOPT impact monitoring should use "GDP growth" as a context indicator.

4.3 Appraisal compatibility with EU horizontal objectives on Environment, Equal opportunities and Information society

Also special attention has been paid to sustainable development reflected in the reduced impact transport-environment and low pollution from transport activities; equal opportunities; and competition policy and state aid. Explicit reference still could be made to the Information Society. This reference to the Information Technology is important in the Romanian context. Wider promotion and use of Information and Communication Technology (ICT) may improve productivity levels and competitiveness and contribute to a more efficient and effective delivery of public services. Technology dissemination can contribute to regional development and developing connectivity and networking in and between regions and sectors. Application of ICT in transport and transport infrastructure may also contribute to the solution for the lack of information on the use of transport infrastructure and on transport operations and may assist in developing reliable transport information database through collection and processing of data. Management information systems can also be designed to prepare, plan, implement, monitor and evaluate emerging needs for new and rehabilitation and maintenance of existing transport infrastructure.

4.4 Results Strategic Environmental Assessment (SEA)

Strategic Environmental Assessment was carried out in accordance with the requirements of the European Council Directive on assessment of the effects of certain plans and programmes on the environment (2001/42/EC) and Romania Governmental Decision no.1076/8.07.2004 for setting up the environmental assessment procedure of certain plans and programmes (Of.J.no.707/5.08.2004).

The implementation of the objectives and priority axes of the SOPT will likely have significant environmental effects on the environment. Special attention should be given and selection of appropriate mitigation measures to offset the potential negative impacts should be done for Priority Axes 1 and 2. Most likely positive effects are to be expected from carrying out measures planned under Priority Axis 3 and 4.

Key mitigation measures proposed for SOPT are:

- all projects should have EIA carried out with special focus given on alternatives to reduce any potential impacts on Natura 2000 and landscape fragmentation. Since the exact locations of the projects are not known, special attention should be given to overlap and interaction of the developments with Natura 2000 network which is to be approved at the end of 2006;
- priority support should be given to the investments that promote BATs;
- priority support should be given to the investments that promote minimization of energy consumption, increase energy efficiency and energy demand (e.g. oil and gas) and promote reuse of the natural resources;

- projects enabling PT use and development should have a priority (e.g. rail versus road and measures aimed at PT promotion);
- projects prioritised using the environmental section criteria proposed in the report should take priority in the overall SOPT funding.

The report on the Strategic Environmental Assessment (SEA) is proposing a system of monitoring the SOPT environmental effects and provides a list of proposed environmental monitoring indicators. The report considers the fact that, in general, in the framework of a monitoring system of environmental indicators at national or regional level, it is rather impossible to separate the SOPT environmental impacts from impacts of other activities or interventions (e.g. projects financed from sources other than the SOPT). According to the SEA team the provided list of indicators which is based on standard requirements for monitoring environmental effects of infrastructure investments and transport activities should be modified to accommodate the particular needs and project particularities. The SEA team proposes "to selectively use monitoring indicators to monitor environmental effects based on the characteristics of the projects selected for funding". The monitoring results of particular projects could be aggregated and these aggregates could serve as a basis to estimate the overall environmental effects of the SOPT. Such data collection and processing procedure implies that most of the proposed environmental indicators will be used in the monitoring system of the programme and further defined and described in the Programme Complement.

It is important to mention that the SOPT version from April 2006) is likely to have more positive environmental effects then the previous (2005) version of the SOPT, since

- the new objective "Promote sustainable development especially by minimizing adverse effects of transport on the environment and improving safety" brought into the SOPT will clearly add to the environmental safety of the transport sector;
- KAI 4.3 "Minimise adverse effects of transport on the environment" is likely to have significant positive effects by expending activities under priority axis 4, then the originally proposal
- the last version enables better integration of sustainable development and environment to the SOPT.

The full SEA report can be found in Annex 4 to this ex-ante evaluation report.

4.5 Appraisal of complementarity with other Operational Programmes

Complementarity with other Operational Programmes and the operations financed from EAFRD and EFF has been addressed in paragraph 3.4 of the SOPT (page 71).

In particular attention has been paid to the consistency between the SOPT and the ROP. It was decided that:

- Urban transport infrastructure is within the scope of ROP and will not be addressed in SOPT.
- County roads will be within the scope of ROP; European and national roads will be under SOPT.
- Communal roads will be financed from EAFRD.
- All motorways will be under SOPT.
- National and regional TEN-T (air)ports will be under SOPT; the others under ROP.

It is also stated that the Bucharest rail underground urban mass transport is the responsibility of the Bucharest Municipality and will not be addressed in the SOPT.

This situation has recently been changed. There is a proposal to include transport projects in the Bucharest area into the SOPT. The projects as such are eligible for financing under the CF and ERDF.

The division of responsibilities between SOPT and ROP has been made clear. What is not clear yet, however, is how the infrastructural linkages between European/national and regional/county/communal have been planned and if there is any synergy between the three entities (SOPT, ROP, EAFRD). There are the Regional Coordination Committees designed to identify potential synergies and strategic responses to the specific problems of a Region, which could be put into practice through correlated and/or synchronized interventions under various Programmes, including those financed by EAFRD and EFF. However, these Regional Coordination Committees seem to lack authority and resources to guarantee this synergy and to embody integrated planning. There are no strong administrative structures at regional level and the Regional Development Agencies lack authority and do not form intrinsic part of the Romanian state administration.

Concluding it can be said that the ROP complements proposed investments in road infrastructure of the SOPT as it addresses regional, local and urban roads. Also the National Rural Development Programme is complementary in this respect as it includes interventions in the area of construction and upgrading of rural roads.

The SOPT also makes explicit reference to Economic Competitiveness and states that improved transport infrastructure will directly lead to increased competitiveness of manufactured products and the provision of services.

4.6 Overall conclusions on coherence of the strategy

The strategy of the SOPT is coherent with EU policy and national policy. However, problems emerge regarding coherence with regional policy as this latter is lacking, mainly due to the non-existence of strong regional state structures.

Complementarity of the proposed investments in road infrastructure of the SOPT, ROP and NRDP is also important to take into account and one should strive for an integrated planning mechanism for (road) transport infrastructure.

5 Evaluation of expected results and impact

5.1 Quantification of objectives at programme and priority level

The objective of the *Sectoral Operational Programme – Transport (SOPT)* is to promote a transport system in Romania, which will facilitate safe, fast and efficient movement of persons and goods with appropriate level of service at European standards, nationally, Europe-wide and between and within Romanian regions.

At the level of the SOPT no programme indicators had been formulated. In the Programme Complement a distinction was made between monitoring indicators and evaluation indicators. The main indicators of monitoring at project level are related with progress in design preparation; tendering and contracting; land acquisition; utilities relocation/protection; Works implementation; evolution of actual contract price. At the level of key areas of intervention, the main indicators of monitoring are: commitment rate; contracting rate; payment rate; rejection rate. The evaluation indicators have been divided into output indicators and result indicators by key area of intervention.

The development and use of programme impact indicators is highly recommended as it is a very powerful tool for further policy development and enhance and increase the planning capacity of the Managing Authority. The ex ante evaluator proposes to consider the use of the following programme impact indicators:

Table 5.1 *Proposed Programme Impact Indicators SOPT*

Indicator	Unit	Baseline	Baseline Year	Target (2015)	Source	Definition / Comments
Impact						
Jobs created / maintained	No	-	-		SOP-T Monitoring System / surveys	Temporarily jobs to be measured during investment / construction period
Value for timesaving stemming from new and reconstructed roads for passengers	Euro/ year	-	-		survey	Value for timesaving is a core indicator listed in the EU regulation
Value for timesaving stemming from new and reconstructed roads for freight	Euro/ year	-	-		survey	
Value for timesaving stemming from rehabilitated railways for passengers	Euro/ year	-	-		survey	
Value for timesaving stemming from rehabilitated railways for freight	Euro/ year	-	-		survey	
Environmental Impact						
Emissions by mode of: - SOx - NOx, - VOCs, - PM10	kt / year	-	-		Data aggregated from the project level may be further compared with data from the national monitoring data	Reduction of emission levels.. Data should be also calculated for intercity and international transportations.
Transport emissions of greenhouse gases (CO2 equivalent) by mode	kt/year	-	-		Effects for specific projects and the SOPT respectively should be calculated based on fuel consumption.	Decrease GHG emissions from transport Reduction of GHG emission levels due to the transport traffic.
Land fragmentation increase due to SOPT	ha		-		SOP-T Monitoring System	Protect and improve the conditions and functions of terrestrial and aquatic eco-systems against anthropogenic degradation, habitat fragmentation and deforestation
Infrastructure surface land take in Romania (increase due to projects)	ha	-	-		Data from the monitoring of the specific projects supported within the SOPT and national statistics	Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites
Transport final energy consumption (total and by mode)	GJ / year	-	-		Data from monitoring of specific projects and from the National statistics data	Improve energy efficiency and use of energy resources

For some of the impact indicators presented in the following chapter the target values have not yet been defined. Based on a further specification of related operations and the present missing target values and base lines can be defined (for some of the indicators base line values might not be applicable). However, in principle, there is no obligation to define target values for impact indicators prior to the beginning of a programme implementation. The EC indicator guidelines accept also defining of target values for impact indicators during the first phase of implementation.

Further, the specific objectives at priority axis level have been formulated as follows:

- Promote international and transit movements of people and goods in Romania by providing effective connections of the port of Constanta, as well as Greece, Bulgaria and Turkey, with the EU through the modernization and development of the relevant TEN-T priority axes.
  Priority Axis 1: Modernization and development of TEN-T priority axes (72% of total Community funding; CF)
- Promote effective movement of persons and goods among Romanian regions and their transfer from the hinterland to priority axes by modernizing and developing national and TEN-T networks
  Priority Axis 2: Modernization and development of the national transport infrastructure outside the TEN-T priority axes (19% of total Community funding; ERDF)
- Promote the development of a balanced transport system of modes, based on the respective competitive advantage of each, by encouraging the development of rail, waterborne and intermodal transport, and
  Priority Axis 3: Upgrade the railway passenger rolling stock on the national and TEN-T railway networks (3% of total Community funding; ERDF)
- Promote sustainable development especially by minimizing adverse effects of transport on the environment and improving safety.
  Priority Axis 4: Sustainable development of the transport sector (5% of total Community funding; ERDF)

Priority Axis 5 is Technical Assistance (1% of total Community funding; ERDF).

5.2 Evaluation of expected results

To evaluate the expected results of the implementation of the SOPT the use of quantified outputs and results are assessed. The SOPT has defined the main output and result indicators that the Managing Authority is going to use to monitor and evaluate the implementation of the operational programme. The Programme Complement has detailed these indicators.

The ex ante evaluator considers that useful indicators have been identified for each priority axis and a first attempt has been made to set the targets for 2015. One of the problems is that sometimes reliable baseline data are not available.

The ex-ante evaluator proposes base don the work already done by the MA of the SOPT a comprehensive set of output and result indicators. For each priority axis a set of output indicators have been defined.

Table 5.2 *Output Indicators by Priority Axis*

Priority Axis 1:
Modernisation and development of TEN-T priority axes

Output Indicators

Indicator	Unit	Baseline	Baseline Year	Target (2015)	Source	Definition / Comments
Output						
TEN-New motorways completed	Lane –km	0	2007	600	SOP-T Monitoring System	
TEN- rehabilitated motorways	Lane –km	0			SOP-T Monitoring System	
TEN-Interoperable railway rehabilitated/upgraded	km	0	2007	180	SOP-T Monitoring System	
TEN-Navigable waters fully open to navigation	km	0	2007	450	SOP-T Monitoring System	

Priority Axis 2:
Modernisation and development of national transport infrastructure outside the TEN-T priority axes

Output Indicators

Indicator	Unit	Baseline	Baseline Year	Target (2015)	Source	Definition / Comments
Output						
National roads rehabilitated	km	0	2007	800	SOP-T Monitoring System	
Railway stations rehabilitated/upgraded	No	0	2007	18	SOP-T Monitoring System	
Railway bridges	No	0	2007		SOP-T Monitoring System	
Railway tunnels	km	0	2007		SOP-T Monitoring System	
Ports rehabilitated/upgraded	No	0	2007	1	SOP-T Monitoring System	
Airports rehabilitated/upgraded	No	0	2007	3	SOP-T Monitoring System	

Priority Axis 3:
Upgrade the railway passenger rolling stock on the national railway network

Output Indicator

Indicator	Unit	Baseline	Baseline Year	Target (2015)	Source	Definition / Comments
Output						
New EMUs	No	0	2007	45	SOP-T Monitoring System	

Priority Axis 4:
Sustainable development of the transport sector

Output Indicators

Indicator	Unit	Baseline	Baseline Year	Target (2015)	Source	Definition / Comments
Output						
New/upgraded intermodal terminals	No	0	2007	10	MA SOP-T	
Improved/upgraded level crossings	No	0	2007	80	MA SOP-T	
km of road through linear villages improved as per safety	Km	0	2007	180	MA SOP-T	
Environmental strategy for the transport sector	No		2007	1	MA SOP-T	

For all transport infrastructure interventions / operations the result indicators are of the same type.

Table 5.3 *Result Indicators for Priority Axes 1 to 4*

Indicator	Unit	Baseline	Baseline Year	Target (2015)	Source	Definition / Comments
Result						
Increase in passenger traffic (road and rail)	million passen-ger – km	81 833 (estimate)	2007	+ 37%	Cestrin / National Statistics	basic value to be verified: NDP 2004: 19,707.9 mil.
Increase in railway passen-ger traffic	million passen-ger – km	9 494 (estimate)	2007	+ 26%	National Statis-tics	
Inland freight traffic	million tonne - km	65 842 (estimate)	2007	+ 33%	National Statis-tics	
Transported passengers on rivers and inland canals	mil	0.2 (NDP)	2004	1.0 (NDP)	SOP-T Monitoring System / surveys	
Goods conveyed in transit through ports, of which maritime river	Mil. ton	71.74 40.53 31.21	2004	115 (NDP) 80 (NDP) 35 (NDP)	SOP-T Monitoring System / surveys	
Increase in passenger traffic through airports	thousand passen-gers	3 949 (estimate)	2007	+ 45%	SOP-T Monitoring System / surveys	
Increase in freight traffic through airports	ton	22 506 (estimate)	2007	+ 41%	SOP-T Monitoring System / surveys	basic value to be verified: NDP 2004: 5,500
Reduction in serious acci-dents	serious accidents / million passen-ger cars	2 155	2003	- 20%	National Statis-tics / Road Police	
Reduction in fatalities	fatalities / million passen-ger cars	724	2003	- 20%	National Statis-tics / Road Police	

As the effects of infrastructure improvements of TEN and outside TEN related investments are difficult to separate due to network impacts it seems to be advisable to monitor the results of Priority Axis 1 to 4 of the SOP-T in one common result monitoring system. Furthermore, the estimates of target values for the respective result indicators were effected on an aggregated level and are not differentiating between the particular axis.

As regards Priority Axis 5 Technical Assistance no indicators are specified. Since the activities of that Priority Axis are determined by the general regulation (monitoring, implementation, evaluation, communication) and operationally described in the draft regulation on implementation, indicators are not relevant here as the authorities responsible for planning and implementation just need to comply with European law.

A proposal for the use of an integrated set of result, output and impact indicators is included in Annex 3 to this report.

It is important to stress that the evaluation of the expected results is an important step in the planning process and forms a structural and integral part of it. It permits to assess the success of the programme and gives guidance for readjustment of the planned interventions. This is in particular important in a programme such as the SOPT, where a comprehensive pipeline exist of projects, which will be reviewed on a regular basis.

5.3 Justification of the proposed policy mix

On the basis of the SWOT analysis in Chapter 2.2 and the proposed division of the available resources, the ex ante evaluator concludes that, if one compares the matching of the SWOT analysis with the proposed priority axes in Table 3.1 with the proposed division of the total available resources over the 5 priority axes in Table 3.4, the ***policy mix*** offered for the implementation of the proposed strategy is justified.

The proposed policy mix is in compliance with EU and national policy. The SOPT and its priority axes and key areas of intervention address both the European agenda as well as the national one. Explicit reference has been made to the Lisbon Strategy and the Community strategic guidelines for the cohesion policy in support of Growth and Jobs; the White Paper on European Transport Policy (2001); the Trans-European Transport Networks (TEN-T); and the conclusions of the European Council from Goteborg 2001. This is reflected in the funding principles which give high priority to investments in the three TEN-T connecting Romania to the international transport network and promoting economic growth and creating jobs. Simultaneously national issues as the national transport infrastructure network, rail passenger transport, sustainable transport and technical assistance are addressed. It should be taken into account that the heavy emphasis on investments in the three TEN-T financed under the Cohesion Fund can be justified by the fact that both the Regional Operational Programme and the National Rural Development Programme also include investments in transport infrastructure (regional, local and rural road infrastructure). In this respect, the policy mix is more in balance.

5.4 Overall conclusions expected results and impact

For evaluating the expected results, an adequate institutional framework has been established. Also quantitative indicators have been developed. However, it is recommended to introduce impact indicators as well to be able to enhance the effectivity of the programme.

The ex ante evaluator has proposed the use of a comprehensive set of programme impact, output and result indicators for monitoring and evaluation purposes.

The proposed policy mix is justified taking into account the results of the SWOT analysis, the proposed priority axes and key areas of intervention and the proposed breakdown of the budget over the different priority axes and key areas of interventions.

6 Appraisal of the proposed implementation system

6.1 Introduction

The success of the implementation of the SOPT, and thus of the Community support, is largely dependent on the delivery capacity and management performance of the management authority and the implementing agencies. The quality of the implementation system, including the monitoring and evaluation arrangements, is decisive for the efficiency and effectivity of the implementation of the SOPT. It is also important to assess whether these arrangements also take into account the EU principles of transparency and partnership.

The proposed implementation system for the SOPT is addressed in Chapter 5 of the Operational Programme. The function of the Managing Authority for SOP Transport has been assigned to the Ministry of Transport, Construction and Tourism (MTCT), within the General Directorate for Foreign Financial Affairs. MTCT intends to use the network of existing implementation agencies involved in pre-accession funds management:

- National Company for Motorways & National Roads (NCMNR)
- National Company for Railways (CFR)
- MTCT Project Implementation Agency

The management functions of the MA for SOP Transport are laid down in Government Decision 497/2004. One of these functions is to develop and promote partnerships at the central level, as well as between the central, regional and local levels, including public-private partnerships.

The MA for SOP Transport needs to think about the integration of the management of the SOPT within the management structure of the overall transport infrastructure planning.

6.2 Management

The General Directorate for Foreign Financial Affairs (GD FFA) of the MTCT carries out the function of the Management Authority for the SOPT. Two relevant SOPT bodies co-exist within the GD FFA of the MTCT. These are:

- the Managing Authority as such and,
- the Project Implementation Agency.

According to the Government Decision 497/ 2004 the Managing Authority of SOPT has the following general management functions:

- Prepare the Operational Programmes, in observance of the objectives and priorities set forth by the National Strategic Reference Framework (National Development Plan);
- Ensure the consistency between the Operational Programmes under the coordination of the Community Support Framework (CSF) Management Authority (Coordinating Body of the National Strategic Reference Framework);

- Monitor the achievement of general results and the impact defined by the operational programme
- Monitor the development of the administrative capacity of the structures involved in the execution of the respective Operational Programme, as well as the consolidation and extension of the partnerships throughout the planning process, as well as throughout all the implementation phases of the Operational Programme;
- Ensure the implementation of the respective Operational Programme in observance of the recommendations of the Monitoring Committees (see sections 5.1.1 and 5.2.1 for a description of the relevant Monitoring Committees) , of the regulations of the European Union and of the community principles and policies, especially the ones in the fields of competition, public procurement, environment, gender equality;
- Develop and promote partnerships at the central level, as well as between the central, regional and local levels, including public-private partnerships;
- Analyze and propose amendments to the Operational Programme and forward the proposals regarding fund re-appropriations between the operations within Operational Programmes to the relevant Monitoring Committees.
- Elaborate implementation procedures for the respective Operational Programmes;
- Prepare the selection and evaluation criteria for projects and approve the projects applied by the beneficiaries;
- Ensure the proper information dissemination to citizens and the mass-media regarding the role of the European Union in the execution of the Programmes and raise the awareness of the potential beneficiary professional organization regarding the opportunities generated by the implementation of the Programmes;
- Responsible for the efficient, effective and transparent use of the funds that support the Operational Programme;
- Set up the Monitoring Committee for the Operational Programme in observance of the principles of partnership, representation, equality of opportunity between genders; ensures the presidency and the secretariat of the Operational Programme Monitoring Committee;
- Participates in the annual meetings of the European Commission aimed at examining the results of the previous year;
- Performs other attributions, as set forth by the law.

A key function of the MA is the management of the Operational Programme in its widest sense of which the identification and appraisal of projects and programmes proposed for financing is an essential function. A very important component is the management of the entire project cycle of identification, pre-feasibility and feasibility, prioritization, planning, implementation, monitoring and evaluation.

The SOPT mentions that it will use the network of existing implementation agencies involved in pre-accession funds management: NCMNR, CFR and MTCT ISPA Agency. The MTCT Project Implementation Agency will act as beneficiary for the implementation of the technical assistance priority axis. The advantage of having only three beneficiaries is that it may be easier to establish proper co-

ordination mechanisms between the MA and the implementation agencies. However, in the SOPT other beneficiaries are mentioned and other areas of interventions are proposed such as ports, inland waterway transport, maritime transport, airports, etc.

The relation between the Managing Authority and the Implementation Agencies should be translated into workable co-ordination mechanisms. In order to gain implementation power for the programme, it is also important to find ways to involve regional and local administrations in the overall management process of the SOPT. This should not be limited to the promotion of partnerships at regional and local level. In this respect the relation with the Regional Operational Programme is evident, where the Regional Development Agencies and the Counties have to play a decisive role in programme implementation.

The SOPT acknowledges that considerable experience has been acquired through implementation of pre-accession and IFIs programmes. It further admits that the institutional and administrative capacity to manage and implement large infrastructure projects remains to be strengthened.

The 2005 Comprehensive Monitoring Report issued by the European Commission states that: "*there are serious concerns in relation to the administrative capacity of the **institutional structures**, and in the area of **financial management and control**. Immediate action is required to strengthen administrative capacity across all concerned bodies at national, regional and local level, including in relation to the European Social Fund. The cooperation between the central and regional level needs to be clarified and considerably improved. The ability of Romania to guarantee sound financial management and control should be considerably strengthened to be ready by the date of accession.*"

The SOPT also acknowledges that there is insufficient institutional capacity for the management and implementation of the SOPT and that this calls for institutional strengthening through human resources development and technical assistance.

Personnel training on general issues related to management and control, exchange of experience, use of the Singe Management Information System, networking, promotion and information will be the responsibility of the MA for the Technical Assistance OP. Also the Sector Operational Programme on Administrative Capacity Development stresses the importance of strengthening the institutional capacity and addresses this issue.

Personnel training on technical issues related to the implementation of SOPT will be the responsibility of the MA of the SOPT.

In the Programme Complement it is stated that there is insufficient institutional capacity for the effective implementation of the SOPT.

- The number of staff currently available in the Government is insufficient to deal effectively with the implementation of the SOPT
- The current level of training is inadequate for the effective implementation of the SOPT

Therefore, the following activities have been identified:

- Activity 1. Ensure adequate resources for administrative costs and relevant equipment.
- Activity 2. Services associated with effective SOPT implementation will include:
  - support for preparatory, managing, implementing, monitoring, controlling, auditing and evaluation activities of SOPT
  - support for managing and monitoring structures of the SOPT in implementing their tasks
  - training in preparation, selection, assessment and evaluation of projects and in management and monitoring of the projects implementation
  - training in cost benefit analysis and safety analysis
- Activity 3. Continuous updating and development of the Transport Master Plan (GTMP) and other horizontal studies.
- Activity 4. Support for preparation of SOPT for the next programming period.

The proposed activities to increase the institutional capacity as such are relevant. However, it is still not clear whether sufficient resources will be allocated and appropriate measures will be taken to tackle this issue seriously. Experience from the implementation of ISPA projects in Romania in the period 2000-2006 has showed that many obstacles may arise during the project cycle, resulting in substantial delays in project and programme implementation and under spending. Therefore, this issue requires serious additional attention, all the more because the amount of funds and the number of projects are significantly higher than the funds from the ISPA programme.

In order to assist the Managing Authority and the Implementing Agencies two ad hoc analyses are being carried out to assess the present capacity and training needs of the staff of the two main Implementing Agencies of the SOPT, e.g. the Romanian Railways and the National Company of Highways and National Roads. Both Implementing Agencies together will be responsible for the implementation of more than 85% of the proposed EU financed part for the implementation of the SOPT. Details of the analyses will be used to enrich the Programme Complement of the SOPT and strengthen the management capacity of the MA and IAs. The quantity and quality of the present staff is not sufficient to carry out the tasks required for the implementation of the key areas of intervention in the railway and road sector. In particular, railways lack human resources to manage the railway projects from the SOPT. The results of these ad hoc analyses will be integrated in the ex-ante evaluation of the Programme Complement.

6.3 Monitoring

According to Article 66 of Council Regulation 1083/2006, the Managing Authority and the Monitoring Committee shall ensure the quality of the implementation of the operational programme.

An institutional framework for monitoring of the SOPT has been established. According to the Government Decision 497/2004 a Monitoring Committee (MC) for the SOPT will be established. The Monitoring Committee is the main co-

ordinating and decision-making body of the SOPT. It is responsible for the quality and effectiveness of implementing the programme. The Monitoring Committee will be set up within three months of the Commission Decision approving the SOPT and will draw up its own Terms of Reference. Roles and responsibilities of this Monitoring Committee have already been defined.
The members of this monitoring committee are:

- Chairperson, also Head of MA for SOPT
- MA CSF
- Certifying Authority and Paying Authority
- MA for ROP
- MA for Technical Assistance
- Competition Council
- MA for European Territorial Cooperation
- European Commission (consultative role)
- European Investment Bank/European Investment Fund (invited)

This institutional framework for monitoring is adequate. It may be useful to find ways to involve regional and/or local administrative structures in this monitoring process.

The ex ante evaluator would like to make some additional remarks. Article 66 of Council Regulation 1083/2006 states that the Management Authority and the monitoring committee shall carry out monitoring by reference to financial indicators. These financial indicators on the implementation of the SOPT may provide up to date information on the value of approved projects, tenders in progress, contracts signed, the amount paid to contractors, etc. It is important to establish these indicators from the outset and they should be updated on a regular basis. The monitoring by financial indicators will provide useful information of the implementation of the programme. It is recommended to start this monitoring process as early as possible as lessons can be learnt from possible obstacles to the successful implementation of the operational programme. Besides, also reports have to be submitted to the European Commission on a regular basis; the first time in 2008. According to Article 66 of Council Regulation 1083/2006, which spells out the arrangements for monitoring, data exchange between the Commission and the Member States shall be carried out electronically, in accordance with the implementing rules of the Regulation, A description of the information recorded by the system in place, is very important and needs to be developed with certain urgency.

Many regular monitoring activities of other projects of the MTCT are taking place. Each specific project and/or programme has its own particular monitoring and evaluation requirements depending on the sources of financing (national budget, ISPA, CF and ERDF, EIB, World Bank, private capital, etc.). It is important to optimise standardisation and maximum coordination of these monitoring activities as being part of one integrated system.

6.4 Evaluation

Evaluation of Operational Programmes is an activity inseparable from the overall OP management and implementation arrangements, as a tool for assessing the relevance, efficiency, effectiveness of the financial assistance deployed, as well

as the impact and sustainability of the results achieved.

In accordance with Articles 47-49 of Council Regulation 1083/2006, three main types of evaluations will be carried out for the OPs:

- An ex-ante evaluation (before implementation of OPs)
- Ongoing evaluations (during the period of implementation of the OPs)
- Ex-post evaluation.

Ex-ante evaluation - For the programming period 2007-2013 the ex-ante evaluation will carried out by an external evaluator *(a single contractor)* for each OP.

Ongoing evaluations will be carried out during the period of implementation of the OP Transport and shall be of three types – ***a****) interim, b) ad hoc and c) with horizontal themes*. There will be 2 interim evaluations of the OP: one evaluation to be carried out in the end of 2009 or beginning of 2010 and one in 2012. The first interim evaluation will examine progress to date in implementing the OP, looking particularly at issues such as management of the OP, while the second interim evaluation will focus more on priorities, looking towards the next programming period. Depending on the efficiency and effectiveness of the monitoring system, it may be considered to have already a first interim evaluation by the end of 2008, as early lessons can be learnt from possible obstacles to the successful implementation of the operational programme.

Ex-post evaluations shall be carried out by the Commission for SOPT, in close cooperation with the Member State and Managing Authorities, in compliance with the provisions of *Article 49* of Council Regulation (EC) No. 1083/2006.

An institutional framework for evaluation has been established at two different levels:

- An overall coordination level, ensured by the Evaluation Central Unit within the Managing Authority for the Community Support Framework (MACSF), Ministry of Public finance.
- At functional level, composed of the evaluation units established within each MA.

The coordination role of the Evaluation Central Unit can be summarized as follows:

(i) Carrying out cross-cutting evaluations;
(ii) Providing capacity building activities to support and develop the operational capacity of the evaluation units established in the Operational Programmes Managing Authorities.
(iii) Providing overall quality assurance activities to ensure the quality of all evaluations.

The evaluation unit established within the SOPT Managing Authority will responsible for managing the following types of ongoing evaluations:

(i) Interim evaluations and
(ii) Ad hoc evaluations.

The evaluation unit will act in co-operation with the Monitoring Committee and will interact on a constant basis with the Evaluation Central Unit.

The MA evaluation unit will draft an Evaluation Plan, which will comprise the indicative evaluation activities it intends to carry out in the different phases of the programme implementation, the indicative human and financial resources allocated for each evaluation activity, the actions aimed at capacity building, as well as the incumbent responsibilities.

This institutional framework for evaluation activities is adequate and the proposed actions can be endorsed. It is recommended to carry out the first interim evaluation already in 2008.

Furthermore, it is important to optimise standardisation and maximum coordination of the evaluation activities of the SOPT with those of other programmes and projects of the Ministry of Transport, Construction and Tourism as being part of one integrated evaluation system of MTCT.

6.5 Financial management and control

A framework for financial management and control has been set-up by the designation of Certifying Authorities for all OPs, Competent Bodies for Payments and Audit Authorities.

The financial management and control arrangements are comprehensively described and financial flows have been made visible through a flowchart.

The SOPT states that each OP Managing Authority is responsible for managing and implementing its Operational Programme efficiently, effectively and correctly and that each Managing Authority will work closely with the designated Certifying and Paying Authority in fulfilling the responsibilities of financial management and control to ensure that:

- Money is used most effectively to achieve the objectives of each OP;
- Use of resources is publicly accountable to the EU and the Member State;
- Budgetary control is effective so that commitment is sustainable within each OP and financial planning profiles are adhered to;
- Contracting is within budget;
- Procurement of goods and services under projects financed:
  - takes place;
  - conforms to EU and Member State rules;
  - represents value for money;
- Financial statements sent to the European Commission and other bodies are correct, accurate and complete:
  - correct - funds are applied correctly;
  - accurately – free from errors;
  - complete – all relevant items have been included;
- Payments to Beneficiaries are made regularly and without undue delay or deductions;
- Co-financing resources are provided as planned;
- Payments are properly accounted for;
- Irregularities are notified in line with EU regulations;
- Any sums wrongly paid out are recovered swiftly and in full;

- Unused or recovered resources are re-committed within the respective OP;
- De-commitment is avoided – particularly in relation to the n+3/n+2 rule;
- Closure of each OP takes place smoothly and on time.

Most of these responsibilities belong to the CA, and in some cases to Beneficiaries; therefore, the wording in the introductory paragraph needs to be changed into *Managing Authority will **assist** the designated Certifying and Paying Authority in fulfilling the responsibilities of financial management and control **in carrying out the following functions**.* Articles 60, 61 and 61 of Council Regulation 1083/2006 spell out in detail the functions of the Managing Authority, the Certifying Authority and the Audit Authority, respectively. The Regulation provides details on the verification of activities and expenditures, the certifying authority and the competent body for payments as well as the flows of the funds. Also all requirements concerning the identification and reporting of irregularities, the Audit Authority and the different audit levels and their attributions are explained.

6.6 Single Management Information System

The Single Management Information System has been set-up and is operational. It is a nation-wide web-based information system, supporting all Romanian organisations implementing the National Strategic Reference Framework and Operational Programmes. The SMIS design follows three main principles: data ***availability*** (data are directly available following the request of an authorized user); data ***confidentiality*** (data are provided only to those users authorized for accessing that specific piece of information); data ***integrity*** (data processing should occur only by authorized users under authorized means).

Effective use of the SMIS and the active use of the indicators provide a powerful tool for management and for carrying out monitoring and evaluation tasks.

6.7 System for information and publicity

A comprehensive system of information and publicity measures for the Cohesion and Structural Funds has been set-up, including a Communication Plan, which is presented in the PC Transport. This system is considered to be adequate.

6.8 Partnership and public consultation

The Partnership requirement ensures that the preparation, implementation and evaluation of OPs at different stages of programming within the timeframe for each stage are discussed and debated with stakeholders relevant to the sector.

From September to December 2005, MTCT has conducted a series of presentations on the initial draft SOPT to all eight development regions. In December 2005 a series of meetings was organised with all political parties in order to describe the SOPT process and the obligations undertaken by Romania and also a public consultative meeting addressed to all relevant stakeholders. Between December 2005 and April 2006 a number of meetings were held between MTCT and other relevant Ministries. Between May and November 2006

19 seminars and conferences were organized in different counties and cities to discuss the contents of the SOPT with stakeholders. It is important to use this experience to set further steps in the institutionalisation of this process of public consultation and integrate it in the daily practice of programme and project cycle management of the MTCT.

6.9 Overall conclusions implementation system

A comprehensive legal and institutional framework for the implementation of the Sectoral Operational Programme for Transport has been elaborated. On paper everything looks fine.

The major issue, however, is still institutional capacity. There seems to be no guarantee that the problem of the shortage of qualified staff for the Managing Authority and the Implementation Agencies will be solved soon. Experiences from the ISPA programmes, which are similar to the programmes financed by the Cohesion Fund and the European Regional Development Fund, but much smaller in size, show that the implementation capacity for project in transport infrastructure is much lower than originally planned. This has not only to do with the capacity of the project staff of the Ministry and the Implementation Agencies, but extends to the entire chain of the project cycle, including the contractors.

The establishment of financial indicators for monitoring activities is considered to be very important. Structural monitoring of the implementation of the SOPT based using sound indicators provides opportunities for removal of constraints for successful implementation and adjustment of the programme. It is also recommended to carry out the first interim evaluation at the end of 2008 instead of 2009.

The Managing Authority is invited to give some thoughts on the further integration of the project implementation units for the projects financed out of the Cohesion Fund and the European Regional Development Fund within the ordinary state administration in order to avoid the building of a "state within a state".

Public consultation in all stages of programme preparation, implementation, monitoring and evaluation is very important and will definitely contribute to a more successful programme.

7 Recommendations

Planning of transport infrastructure and transport planning

The SOPT concentrates on priorities and EU policies, such as development of TEN-T, mode balancing and improvement of traffic safety in the absence of a General Transport Master Plan (GTMP). There is still no overall transport policy and consequently no systematic prioritisation of transport infrastructure projects. This is also caused by lack of a systematic analysis of transport trends in Romania. Presently, the General Transport Master Plan is under preparation.

The experiences in the development of this Master Plan should be used to install a sound transport planning system in Romania and the elaboration of a good transport database to justify interventions in investments in transport infrastructure. The implementation of the SOPT would benefit from these experiences in such a way and adjustments would than easily be justified.

Setting-up a system of data collection and data processing

As said before, there is still no reliable base of transport data. The collection of reliable transport data is an important tool for adjusting transport policy and focusing and directing investments in transport infrastructure.

Mechanisms should be developed to collect relevant data from transport operators, by surveys and by studies. Capacity should be developed to process these data for use by policy makers. The implementation of the SOPT would highly benefit from this.

Towards integration of transport planning systems

Integration of transport planning systems should be strived for. In particular, the infrastructural linkages between European/national and regional/county/ communal need serious consideration. Presently there is no co-ordination and synergy between the three entities responsible for the Romanian road network (SOPT, ROP, EAFRD).

Formal and informal mechanisms should be established to co-ordinate planning of investments in road infrastructure between the three entities responsible for it.

Financing of maintenance of transport infrastructure

Investments in new transport infrastructure implies that budgets should be guaranteed for proper maintenance of this infrastructure.

Therefore, yearly budget allocations for maintenance and rehabilitation purposes should be made. The financing of maintenance operations should preferably come from the users of transport infrastructure. Smart ways have to be further developed to collect these funds in a proper way. This contributes to the sustainability of the investments.

Development of institutional capacity

Institutional capacity is a serious concern for the successful implementation of the SOPT. The SOPT programme is ambitious and intends to spend a considerable amount of money in a short period of time putting a lot of pressure on the programme implementation unit. Development of institutional capacity is, therefore, a very urgent and serious issue.

At the short term, a more detailed study should be carried out by the Romanian authorities to identify what capacity they need for the successful implementation of the SOPT and to quantify the needs for staffing dealing with the programme implementation.

Also, a training plan should be designed for staff involved in the management and implementation of the SOPT.

Making use of public consultation

Public consultation in all stages of programme preparation, implementation, monitoring and evaluation is very important and will definitely contribute to a more successful programme.

Public consultation should be further institutionalized in the Romanian transport planning process.

Use the experience of the SOPT to strengthen institutional structures

The process of development and later implementation of the SOPT should be used to strengthen the structural planning process of the Managing Authority and the Implementing Agencies.

Annex 1 List of contacts

- Agentia ISPA - Ministry of Transport, Construction and Tourism
- CFR Calatori – Romanian Railways Passengers
- CFR Marfa – Romanian Railways Freight
- CNCFR SA – National Company of Romanian Railways
- DGAc – General Directorate of Civil Aviation
- DGITF – General Directorate of Railway Transport
- DGITR – General Directorate of Road Transport
- DGM – General Directorate of Management and Strategy
- DGMS – General Directorate of Environment
- DGTN – General Directorate of Water Transport
- Metrorex SA
- Ministry of Transport, Construction and Tourism
- NCMNR – National Company of Motorways and National Roads

Annex 2 List of consulted documents

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- A reformed Cohesion Policy for a changing Europe; Regions, Cities and Border areas for Growth and Jobs; Inforegio fact sheet 2006; European Union Regional Policy.
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- Romania 2005 Comprehensive Monitoring Report; COM(2005)534 final; European Commission.
- Romania Sectoral Operational Programme Transport 2007-2013; Programme Complement; Ministry of Transport, Construction and Tourism, Government of Romania; August 2006.

- Sector Operational Programme – Transport (SOPT) 2007-2013; Ministry of Transport, Construction and Tourism, Government of Romania; version April 2006.
- Strategic Evaluation on Environment and Risk Prevention under Structural and Cohesion Funds for the Period 2007-2013; National Evaluation Report for Romania; GHK for DG Regio; 10 November 2006.
- Strategic Evaluation on Innovation and the Knowledge Based Economy in relation to the Structural and Cohesion Funds, for the programming period 2007-2013, Country Report Romania; Technopolis for DG Regio; 14 July 2006.
- Strategic Evaluation on Transport Investment Priorities under Structural and Cohesion Funds for the Programming Period 2007-2013; Final Report; Ecorys for DG Regio; October 2006.
- Strategic Evaluation on Transport Investment Priorities under Structural and Cohesion Funds for the Programming Period 2007-2013; Country Report Romania; Ecorys for DG Regio; October 2006.
- Study on the Potential and Needs of the New Member States – Country Report Romania; European Policies Research Centre, University of Strathclyde, Glasgow, UK; August 2005.
- Technical Assistance to the Ministry of Transport, Construction and Tourism for Managing Structural Instruments; Final Report; Scott Wilson Consortium; July 2006.
- The New Programming Period, 2000-2006 Methodological Working Papers; Working Paper 2; The Ex-Ante Evaluation of the Structural Funds interventions; European Commission.
- The New Programming Period, 2007-2013: Methodological Working Papers; Working Paper No. 1 on Ex-Ante Evaluation; European Commission; August 2006.
- Traffic Study on the Pan-European Corridor IV – and other main routes between Brasov and the Hungarian border; Dorsch Consult; Final Report; July 2005.

Annex 3 Proposed set of indicators

INTRODUCTION

In a draft "Strategic Indicators Paper" prepared in 2006 output and result indicators of the SOPT were reviewed assessed and proposals were carried out for monitoring and measuring the indicators. The main scope of this exercise was to retain only simple indicators that can easily be measured which is based on a recommendation made in the EC working document on indicators for monitoring. Furthermore, it was considered to ensure that the target values of the indicators were reasonable. According to this target levels were systematically reduced at about 80% of initial expectations. The paper provides a detailed description on how these target values were estimated based on official baseline statistics.

It can be confirmed that, in general, almost all of the output and result indicators are monitoring the effects of the envisaged interventions of the programme, that the indicators are relevant and are according to SAMRT criteria. However, a few recommendations are made, to add on result and, in particular, (specific and global) impact indicators to allow a more comprehensive measuring of programme's intended impacts on the economic development and to monitor environmental effects of the infrastructure investments. Proposed indicators are also defined according to the list of "Core Indicators for ERDF and Cohesion Fund" (Annex 1 of the Indicative Guidelines for Monitoring and Evaluation Indicators, EC WD No 2)

In the "Strategy" chapter of the SOPT reference is made to the overall development goals of the National Strategic Reference Framework (NSRF) and the Lisbon and Gothenburg strategies of growth, jobs and sustainable development. As the SOPT is definitely impacting on economic growth and employment some additional core indicators to measure specific and global impacts at programme level have to be defined. Proposals for such indicators are provided in the subsequent chapter of the present document.

The NSRF estimates an overall net increase in the average number of employees of about 130,000 persons by 2013 compared to 2005 as result of all Structural Fund interventions. The SOPT is not directly targeted to create new jobs or increase employment growth. However, the construction of infrastructure creates or at least maintains a significant number of jobs. Although being a temporarily employment effect it will have a significant influence on labour market developments for a number of years as the investment period is relatively long. Furthermore, the envisaged increase in transport activities will have an impact on the economic development as a whole and therewith an employment effect.

According to macroeconomic forecasts of the National Commission for Prognosis, Romania’s GDP will increase on average by 5.6%, in the period 2007 – 2013. The economic growth will be based on the domestic demand, especially on Government’s investments, including those financed with the support of the EU funds. The NRSF estimates that the impact of the Structural and Cohesion Funds will generate an additional 15% increase in Romania’s GDP by 2015 compared to a situation without these funds. This growth estimate was calculated by using a

macroeconomic model in which improvements of transport infrastructure were used as one of the key factors to generate growth. However, it will be rather difficult in the framework of a SOPT monitoring system to simply isolate the particular impact of the SOPT on the economic growth rate. Therefore, a SOPT impact monitoring should use "GDP growth" as a context indicator.

The draft report on the Strategic Environmental Assessment (SEA) is proposing a system of monitoring the SOPT environmental effects and provides a list of proposed environmental monitoring indicators. The report considers the fact that, in general, in the framework of a monitoring system of environmental indicators at national or regional level, it is rather impossible to separate the SOPT environmental impacts from impacts of other activities or interventions (e.g. projects financed from sources other than the SOPT). According to the SEA team the provided list of indicators which is based on standard requirements for monitoring environmental effects of infrastructure investments and transport activities should be modified to accommodate the particular needs and project particularities. The SEA team proposes "to selectively use monitoring indicators to monitor environmental effects based on the characteristics of the projects selected for funding". The monitoring results of particular projects could be aggregated and these aggregates could serve as a basis to estimate the overall environmental effects of the SOPT. Such data collection and processing procedure implies that most of the proposed environmental indicators will be used in the monitoring system of the programme and further defined and described in the Programme Complement. A selected list of core indicators which could be seen as obligatory should be drawn from the SEA list and added to the SOPT impact indicator list at the level of the programme. A proposal for such list is inserted into the impact indicator table of the following chapter of the present document.

For some of the impact indicators presented in the following chapter the target values have not yet been defined. Based on a further specification of related operations and the present missing target values and base lines can be defined (for some of the indicators base line values might not be applicable). However, in principle, there is no obligation to define target values for impact indicators prior to the beginning of a programme implementation. The EC indicator guidelines accept also defining of target values for impact indicators during the first phase of implementation. For all proposed indicators further explanation and best practice examples from other countries could be provided, if there will be seen a need for it.

The following "core" indicators measuring impacts and the output and results at the level of each priority axis shall be complemented by a more detailed set of monitoring indicators which in particular will differentiate between types and users of transport facilities, regions and areas etc.. This extended set of indicators should be presented in the Programme Complement together with a detailed description of data collection, data processing and integration of all indicators into the SMIS in order to guarantee consistent aggregation of indicators across all SOPs and to establish an overall monitoring system for the Structural Fund.

Programme Impact Indicators

Indicator	Unit	Baseline	Baseline Year	Target (2015)	Source	Definition / Comments
Impact						
Jobs created / maintained	No	-	-		SOP-T Monitoring System / surveys	Temporarily jobs to be measured during investment / construction period
Value for timesaving stemming from new and reconstructed roads for passengers	Euro/ year	-	-		survey	Value for timesaving is a core indicator listed in the EU regulation
Value for timesaving stemming from new and reconstructed roads for freight	Euro/ year	-	-		survey	
Value for timesaving stemming from rehabilitated railways for passengers	Euro/ year	-	-		survey	
Value for timesaving stemming from rehabilitated railways for freight	Euro/ year	-	-		survey	
Environmental Impact						
Emissions by mode of: - SOx - NOx, - VOCs, - PM10	kt / year	-	-		Data aggregated from the project level may be further compared with data from the national monitoring data	Reduction of emission levels.. Data should be also calculated for intercity and international transportations.
Transport emissions of greenhouse gases (CO2 equivalent) by mode	kt/year	-	-		Effects for specific projects and the SOPT respectively should be calculated based on fuel consumption.	Decrease GHG emissions from transport Reduction of GHG emission levels due to the transport traffic.
Land fragmentation increase due to SOPT	ha		-		SOP-T Monitoring System	Protect and improve the conditions and functions of terrestrial and aquatic eco-systems against anthropogenic degradation, habitat fragmentation and deforestation
Infrastructure surface land take in Romania (increase due to projects)	ha	-	-		Data from the monitoring of the specific projects supported within the SOPT and national statistics	Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites
Transport final energy consumption (total and by mode)	GJ / year	-	-		Data from monitoring of specific projects and from the National statistics data	Improve energy efficiency and use of energy resources

PRIORITY AXIS

For all transport infrastructure interventions / operations the result indicators are of the same type. As the effects of infrastructure improvements of TEN and outside TEN related investments are difficult to separate due to network impacts it seems to be advisable to monitor the results of Priority Axis 1 to 4 of the SOP-T in one common result monitoring system. Furthermore, the estimates of target values for the respective result indicators were effected on an aggregated level and are not differentiating between the particular axis.

Priority Axis 1:
Modernisation and development of TEN-T priority axes

Output Indicators

Indicator	Unit	Baseline	Baseline Year	Target (2015)	Source	Definition / Comments
Output						
TEN-New motorways completed	lane –km	0	2007	600	SOP-T Monitoring System	
TEN- rehabilitated motorways	lane –km	0			SOP-T Monitoring System	
TEN-Interoperable railway rehabilitated/upgraded	km	0	2007	180	SOP-T Monitoring System	
TEN-Navigable waters fully open to navigation	km	0	2007	450	SOP-T Monitoring System	

Priority Axis 2:
Modernisation and development of national transport infrastructure outside the TEN-T priority axes

Output Indicators

Indicator	Unit	Baseline	Baseline Year	Target (2015)	Source	Definition / Comments
Output						
National roads rehabilitated	km	0	2007	800	SOP-T Monitoring System	
Railway stations rehabilitated/upgraded	No	0	2007	18	SOP-T Monitoring System	
Railway bridges	No	0	2007		SOP-T Monitoring System	
Railway tunnels	km	0	2007		SOP-T Monitoring System	
Ports rehabilitated/upgraded	No	0	2007	1	SOP-T Monitoring System	
Airports rehabilitated/upgraded	No	0	2007	3	SOP-T Monitoring System	

Priority Axis 3:
Upgrade the railway passenger rolling stock on the national railway network

Output Indicator

Indicator	Unit	Baseline	Baseline Year	Target (2015)	Source	Definition / Comments
Output						
New EMUs	No	0	2007	45	SOP-T Monitoring System	

Priority Axis 4:
Sustainable development of the transport sector

Output Indicators

Indicator	Unit	Baseline	Baseline Year	Target (2015)	Source	Definition / Comments
Output						
New/upgraded intermodal terminals	No	0	2007	10	MA SOP-T	
Improved/upgraded level crossings	No	0	2007	80	MA SOP-T	
km of road through linear villages improved as per safety	km	0	2007	180	MA SOP-T	
Environmental strategy for the transport sector	No		2007	1	MA SOP-T	

RESULT INDICATORS OF PRIORITY AXIS 1 TO 4:

Indicator	Unit	Baseline	Baseline Year	Target (2015)	Source	Definition / Comments
Result						
Increase in passenger traffic (road and rail)	million passenger – km	81 833 (estimate)	2007	+ 37%	Cestrin / National Statistics	basic value to be verified: NDP 2004: 19,707.9 mil.
Increase in railway passenger traffic	million passenger – km	9 494 (estimate)	2007	+ 26%	National Statistics	
Inland freight traffic	million tonne - km	65 842 (estimate)	2007	+ 33%	National Statistics	
Transported passengers on rivers and inland canals	mil	0.2 (NDP)	2004	1.0 (NDP)	SOP-T Monitoring System / surveys	
Goods conveyed in transit through ports, of which maritime river	Mil. ton	71.74 40.53 31.21	2004	115 (NDP) 80 (NDP) 35 (NDP)	SOP-T Monitoring System / surveys	
Increase in passenger traffic through airports	thousand passengers	3 949 (estimate)	2007	+ 45%	SOP-T Monitoring System / surveys	
Increase in freight traffic through airports	ton	22 506 (estimate)	2007	+ 41%	SOP-T Monitoring System / surveys	basic value to be verified: NDP 2004: 5,500
Reduction in serious accidents	serious accidents / million passenger cars	2 155	2003	- 20%	National Statistics / Road Police	
Reduction in fatalities	fatalities / million passenger cars	724	2003	- 20%	National Statistics / Road Police	

Priority Axis 5:
Technical Assistance

The envisaged key areas of intervention of this priority axis are:

- Support for effective SOPT managing, implementing, monitoring and controlling;
- Information and publicity regarding SOPT.

The rationale for this priority axes is based on the Articles 46, 47 – 49 and 69 of the Council Regulation No 1083/2006. In particular for the communication plan reference is made to the implementing rules of the Regulation.

As regards priority axis 5 no indicators are to be specified. Since the activities of this Priority Axis are determined by the general regulation (monitoring, implementation, evaluation, communication) and operationally described by the (draft) implementing rules of the Council Regulation indicators are not relevant here as the authorities responsible for planning and implementation just need to comply to European law.

Annex 4 Strategic Environment Assessment

Environmental Report
(strategic environmental assessment)

Sectoral Operational Programme

Transport Infrastructure

Romania

EuropeAid/121373/D/SV/RO

Reference

Bucharest, January 2007

Contents

List of Tables

List of abbreviations and acronyms

Abbreviation or acronym	Explanation
CF	Cohesion Fund
DG1076/2004 on SEA	Government Decision no.1076/8.07.2004 for setting up the environmental assessment procedure of certain plans and programmes (Of.J.no.707/5.08.2004)
EIA	Environmental impact assessment (project level assessment of environmental effects)
Env.	Abbreviation for "environmental" or "environment"
ERDF	European Regional Development Fund
EUSDS	EU Sustainable Development Strategy (Gothenburg strategy, 2001)
GRDP Handbook	Handbook on SEA for Cohesion Policy 2007-2013"
KAI	Key area of intervention
MA	Managing Authority (for SOPT it is the MTCT)
MTCT	Ministry of Transport, Construction and Tourism of Romania
NDP	National Development Plan
NGO	Non-governmental organization
PA	Priority Axes
PT	Public transport (which includes urban public transport (metro, tram, trolley, bus and micro-bus) as well as national public transport system of rail, bus, water public transport and air)
REC	Regional Environmental Center for Central and Eastern Europe
SEA	Strategic environmental assessment
SEA Directive	The European Council Directive no. 2001/42/EC on assessment of the effects of certain plans and programmes on the environment
SOPT	Sectoral Operation Programme - Transport 2007-2013
TEN-T	Trans-European Networks
NRSF	National Strategic Reference Framework

Non-technical summary

The Sectoral Operational Programme – Transport for the years 2007-2013 (SOPT) is a document prepared to enable the distribution of EU financial sources in the area of transport infrastructure development. This SOPT is being elaborated by the Ministry of Transport, Construction and Tourism of Romania (hereinafter MTCT), which is the Managing Authority of the SOPT. It adheres to the thematic priority identified in the National Strategic Reference Framework aimed at "expanding and improving transport infrastructure" identified in the Romanian Law no. 203/2003 on development and modernization of the transport network important at national and European level, which underpins the strategies identified in the White Paper on the European Transport Policy and directives detailing the Trans-European Networks (TEN-T). The SOPT defines objectives, priority axes and key areas of intervention within which it will make possible to apply for the project co-financing from the EU Funds.

The SOPT was one of 4 sectoral operational programmes screened to be assessed by strategic environmental assessment (hereinafter SEA), as provided for in the Government Decision no.1076/8.07.2004 for setting up the environmental assessment procedure of certain plans and programmes (Of.J.no.707/5.08.2004). The content and scope of the assessment was endorsed by the scoping meeting of a Working Group established for the purpose of SEA by the Managing Authority (please see the Annex 1 for the list of invited stakeholders). The scoping meeting took place on the 8th of September 2006. The minutes of the meeting are attached in the Annex 2 of this report (in Romanian only).

The SEA began immediately after the decision of the scoping meeting. At the time of the start of the process, a draft SOPT version from April 2006 was made available to the SEA team. The process then continued simultaneously with the amendments introduced to the SOPT by the MA due to consultations with SEA team and ex-ante evaluation recommendations.

All parts of the SOPT were assessed within SEA. The SEA experts based their conclusions in recommendations on a number of national and international documents relevant to the SOPT including the draft programme complements elaborated by the MA. The basic reference framework for conducting SEA was a set of relevant environmental objectives endorsed by the Scoping meeting referred above. The objectives were formulated on the basis of the analysis of existing relevant national and international strategic documents (strategies, plans and programmes) and the current status of environmental issues related to the nature and focus of the SOPT. The final set of the relevant environmental objectives also included relevant human health issues and specific issues related to nature and biodiversity protection (within the framework of Natura 2000).

Using the set of relevant environmental objectives the SEA team assessed the SOPT sections and proposed the following changes to the SOPT:

- to complement the "Analysis of the current situation" with a separate section dedicated to the environmental situation analysis related to issues arising due to transport;
- to complement and modify the SOPT descriptive part, including the SWOT analysis;
- to complement and modify the global and specific objectives of the SOPT by emphasizing the sustainable transport development objective;
- to modify formulation of some of the key areas of intervention in order to strengthen the potential progress towards sustainable development of the actions envisioned.

The draft environmental report was completed on 15th of November and was prepared for the version SOPT dated April and included modifications of November versions of 2006. The SOPT and the draft environmental report were made available for public consultations at the end of November 2006. Based on the request of the Ministry of Finance, that wished to ensure that SEA considers alternatives options, another draft / version of the SOPT was provided to the SEA team on 23rd of January 2007. This version has been consequently still included in the final version of the environmental report.

The SOPT contains priority axes that are worked out in detailed key areas of intervention, which are the most important part of the SOPT in terms of assessment of its possible negative impacts and potential environment benefits and alternatives. Assessment was carried out for each separate key area of intervention and was based on the analysis of its consistency with the relevant environmental objectives - i.e. whether and how the intervention areas may positively or negatively affect the attainment of the relevant environmental objectives in Romania. Alternative reformulations of objectives, priority axes and KAIs, where appropriate and reasonable, were proposed and discussed.

On the basis of this assessment, the SEA team made proposals for implementation and modification of the focus of the areas of intervention and also suggested conditions for their implementation. Another important output of the assessment was the proposal for the monitoring of environmental effects during the SOPT implementation and a proposal for environmental criteria that will help to evaluate the environmental performance of the projects proposed for funding within SOPT. It is anticipated that integration of environmental criteria and indicators into the overall implementation and monitoring system of the SOPT will enable to focus the support from the EU funds on those activities, which will bring bigger positive effects to the environment and will minimize adverse impacts. In the framework of the assessment, human health issues as well as impacts on the Natura 2000 network were addressed.

Major recommendations and findings of the analysis

All chapters and sections were reviewed during the strategic environmental assessment focusing on those parts that could reveal the environmental effects of the projects to be funded under the priorities of the SOPT. The biggest focus and attention was paid to the strategic level statements of the SOPT, which are the global objective, specific objectives, priority axes and key areas of intervention. In elaboration of the proposals for environmental monitoring system of the SOPT, information was correlated with the programme complements, which contained more information on the monitoring indicators of SOPT.

Results of the assessments covered two versions of the SOPT: i) 2005 version of this SOPT and ii) April 2006 version of the SOPT.

Both versions of the SOPT differ by the scope. Earlier version lacked the objective "Promote sustainable development especially by minimizing adverse effects of transport on the environment and improving safety" and KAI 4.3 within Priority axis 4 "Sustainable development of the transport sector" called "Minimise adverse effects of transport on the environment".

Assessment of the Key Area of Intervention "Minimise adverse effects of transport on the environment" proposed in later SOPT versions indicates that this intervention as well as adding a separate objective of the SOPT on sustainable transport development is likely to have significantly positive environmental effects and its inclusion improves an overall balance of positive and adverse environmental impacts of the SOPT.

Comparison of both versions of the SOPT thus leads to a conclusion that the latest version of SOPT (April and November 2006) is likely to have more positive environmental effects then the previous (2005) version of the SOPT, since

- the new objective "Promote sustainable development especially by minimizing adverse effects of transport on the environment and improving safety" brought into the SOPT will clearly add to the environmental safety of the transport sector;
- KAI 4.3 "Minimise adverse effects of transport on the environment" is likely to have significant positive effects by expending activities under priority axis 4, then the originally proposal
- the last version enables better integration of sustainable development and environment to the SOPT.

The global and specific objectives of the SOPT are on a national scale therefore the assessment scope (scale) of the SOPT was on the national level as well.

It is emphasized in the SOPT that urban transport infrastructure is not the subject of the SOPT, and it may be dealt by ROP, which addresses regional policy issues, since municipal transport is a matter governed by municipalities and local authorities. SEA analysis and recommendations contain references to the public transport (PT) focusing mostly on the national and international infrastructure used by PT, since there is no way to separate it, analyzing the impacts of the development of rail, air and water transport addressed in the SOPT as well as Priority axes (5) on "Sustainable development of the transport sector", which is important for PT development, especially if one of the Key Areas of Intervention under PA-5 is aimed at the introduction of efficient non-polluting/environmentally friendly transport infrastructure initiatives for all transport modes and mitigation of the environmental impacts of the past developments in the transport sector as a whole. The SEA team emphasizes the importance of such measures to PT.

Suggestions for modifications (alternative formulations) of the specific objectives of the SOPT were proposed as follows:

Objective 1. Promote international and transit movements of people and goods in Romania by providing effective connections of the port of Constanta, as well as transit transport from EU to the south through the modernization and devel-

opment of the relevant TEN-T priority axes applying necessary environmental measures
Objective 2. Promote effective movement of persons and goods among Romanian regions and their transfer from the hinterland to priority axes by modernizing and developing national and TEN-T networks according to sustainable development principles
Objective 3. n/a
Objective 4. Support sustainable transport development by minimizing adverse effects of transport on the environment and improving traffic safety and human health

Suggestions for modifications (alternative formulations) of Priority Axes (PA) were as follows:

PA 1: Modernization and development of TEN-T priority axes aiming at sustainable transport system integrated with EU transport networks
PA 2: Modernization and development of the national transport infrastructure outside the TEN-T priority axes aiming at sustainable national transport system
PA 3 Upgrade the railway passenger rolling stock on the national and TEN-T railway networks
PA 4 Modernization of transport sector aiming at higher degree of environmental protection, human health and passenger safety

Suggestions for modifications (alternative formulations) of Key area of intervention (KAI) were as follows:

KAI 1.1 Modernization and development of sustainable road infrastructure along the TEN-T priority axis 7
KAI 1.2: Modernization and development of sustainable railway infrastructure along the TEN-T priority axis 22
KAI 2.1: Modernization and development of national road infrastructure adopting sustainable transport principles and ensuring the highest possible environmental protection
KAI 4.1: Development of inter-modal terminals and logistic centres
KAI 4.3: Minimize adverse effects of transport on the environment by developing the national Environmental Strategy of Transport Sector and other activities aimed at mitigation of env. effects
KAI 1.3; 2.2; 2.3; 2.4; 3.1 and KAI 4.2 n/a

The implementation of the objectives and priority axes of the SOPT will likely have significant environmental effects on the environment. Special attention should be given and selection of appropriate mitigation measures to offset the potential negative impacts should be done for Priority Axes (PA) 1 and 2. Most likely positive effects are to be expected from carrying out measures planned under PA 3 and 4.

Key mitigation measures proposed for SOPT are:

- all projects should have EIA carried out with special focus given on alternatives to reduce any potential significant impacts on Natura 2000 and landscape fragmentation. Since the exact locations of the projects are not known, special attention should be given to overlap and interaction of the developments with Natura 2000 network which is to be approved at the end of 2006;
- priority support should be given to the investments that promote BATs;

- priority support should be given to the investments that promote minimization of energy consumption, increase energy efficiency and energy demand (e.g. oil and gas) and promote reuse of the natural resources;
- projects enabling PT use and development should have a priority (e.g. rail versus road and measures aimed at PT promotion);
- projects prioritised using the environmental section criteria proposed in the report should take priority in the overall SOPT funding.

During the assessment, as additional measure to prevent, reduce and as fully as possible offset any significant adverse effects on the environment, a system for environmental evaluation and selection of project applications was proposed. The system for environmental evaluation was designed in two stages with pre-project environmental evaluation during project preparation and formal environmental evaluation within official selection procedures. A draft recommended form for project proposal evaluation from environmental impact point of view was elaborated, which is based on the relevant environmental objectives and will enable to assess proposed project impact on the relevant environmental objectives.

In order to implement the system it was recommended:

- To incorporate the proposed measures that should be taken to minimise, reduce or offset the likely significant environmental effects of each area of intervention provided (outlined in the sub-chapter 8.1) among the core selection criteria for project applications.
- To incorporate the proposed environmental evaluation of project applications into the overall system of evaluating and selecting projects
- To ensure sufficient personnel and professional capacities for environmental areas within the project evaluation
- To ensure that the applicants are informed sufficiently about environmental issues and about possible links of the draft projects to the environment.

To ensure monitoring of environmental effects of the programme a set of environmental indicators were proposed (coordinated with the national environmental monitoring indicators as well as EEA indicators sets). SEA aimed at establishment of indicators to monitor effects on each relevant environmental objective. In order to ensure monitoring, it was recommended:

- To incorporate the environmental indicators proposed into the overall system of monitoring the SOPT implementation impacts
- To connect the monitoring system to the system of evaluating and selecting the projects i.e. use the same environmental objectives/indicators for the project evaluation and selection and also for further project monitoring;
- To link monitoring of the SOPT to monitoring of the single projects i.e. summarize results of the monitoring from the project level in order to estimate overall effects of the SOPT to the relevant environmental objectives.
- To publish the results of monitoring;
- To ensure sufficient personnel and professional capacities for environmental areas within the SOPT monitoring;
- To involve the Ministry of Environment and Water into the discussion about the overall system of monitoring and especially the way of incorporating environmental issues into the overall system before it is launched;

- To ensure that the applicants are informed sufficiently about environmental issues and about possible links of the draft projects to the environment;
- to invite environmental NGOs to take part in the monitoring committee (-s) established for the SOPT.

Consultations

In order to consult the public in the preparation and assessment of the SOPT, the SEA team proposed to establish a webpage within the MTCT, where the SEA working documents and other relevant information were posted (http://gatekeeper.mt.ro). Visitors to the site will also be able to comment on the draft documents in writing and register to take part in the public debate which will take place at the end of the SEA process.

REC Romania created a web-page on its website (www.recromania.ro) dedicated to the "Ex-ante Evaluation" (EuropeAid/121373/D/SV/RO), which contains most of the interim papers produced during the SEA of 4 Operational Programmes assessed under this contract. Comments on the draft environmental report for SOPT may be also sent to the following e-mail address: oana.boingeanu@recromania.ro by the 19th of January 2007. Minutes of the public debate are attached in the Annex 6.

Pursuant to the relevant national legislation the public debate was organized after the formal submission of the SOPT including this environmental report to the Ministry of Environment and Water and the open consultation phase of 45 days with other relevant stakeholders and the public as required by the national law. The comments and suggestions raised during this consultation phase and the public debate were considered within the final version of the SOPT. Table of responses to the comments of the public and other stakeholders during the public consultation period and public debate held on the 15th of January 2007 are attached in the Annex 7.

Introduction and methodology

1.1 **Objectives of the SEA**

Strategic environmental assessment is a tool for minimizing the risk and to maximize positive effects of proposed plans and programmes on the environment. The European Council Directive no. 2001/42/EC on assessment of the effects of certain plans and programmes on the environment (hereinafter SEA Directive) requires SEA to be carried out during the elaboration of the plan or programme and requires preparation of an environmental report; carrying out of consultations and taking into account of the environmental report and the results of the consultations in decision-making. Romania transposed the SEA Directive by the Governmental Decision 1076 of 8th of July 2004.

The SEA Directive came into force in July 2004 and is applicable to Cohesion and Structural Fund's programming for 2007-2013.

The Cohesion Policy programming process analyses and proposes development interventions. The SEA process examines individual outputs of the planning process and it may propose any necessary amendments to maximize the environmental benefits of development proposal and to minimize their negative environmental impacts and risks. As such, the programming process and the SEA process follow a very similar logic, and this is the basis for the approach recommend by the project implementing Consortium.

Additionally, SEA is a key tool not only for "greening" plans and programmes and for improving their general logic, consistency and chances for success[1] within the overall Cohesion Policy objectives, by providing linkages with parallel planning process (such as ex-ante or national strategic planning) and contributing to sustainable development.

Moreover, the requirements of the SEA Directive must be interpreted in such a way that Romanian Environmental NGOs and Civil Society have an effective involvement in the consultation process and are able to be informed about and to contribute to the Strategic Environmental Assessment.

[1] Handbook on SEA for Cohesion Policy 2007-2013, Greening the Regional Development Programmes project, 2006

1.2 **Methodology**

This SEA follows a specific SEA approach outlined in the "Handbook on SEA for Cohesion Policy 2007-2013" (hereinafter GRDP Handbook) which was elaborated within the Interreg IIIC project "Greening Regional Development Programmes". This Handbook was welcomed by the DG Regio and EG Environment in 2006 as a recommended approach for conducting SEA for the Operational Programmes for EU Cohesion Policy in 2007-2013.

The SEA methodology used this assessment fully incorporates the requirements of the SEA Directive, methodological recommendations contained in the GRDP Handbook and the national SEA requirements in Romania set up by GD no.1076/2004. Based on these requirements, this SEA aimed to:

- determine the key issues that are to be considered during elaboration of the programming document;
- analyse the context of the programming document and likely future trends, if the programming document is not implemented;
- identify an optimal set of specific development objectives and priorities;
- identify optimal measures which will best enable achievement of the objectives;
- propose an optimal monitoring and management system;
- provide for early and effective consultations with the relevant authorities and the concerned public, including citizens and organized stakeholder groups;
- inform decision makes about the programming document and its likely impacts;
- notify relevant authorities and the public about the final programming document and the reasons for its adoption.

Assessment of the draft SOPT was based on the following steps:

- Analysis of the main environmental issues and trends in Romania.
- Analysis of relevant environmental plans and programmes and related strategies on international, EU and national levels.
- Determination of the relevant environmental objectives for the SOPT.
- Assessment of the descriptive part of SOPT – whether it properly reflects the main relevant environmental issues for the SOPT.
- Environmental assessment of the SOPT strategy (objectives and priority axis).
- Environmental assessment of the priority axes and areas of intervention.
- Proposals for changes in the SOPT text, based on the evaluations carried out.
- Proposal for the environmental indicators to monitor environmental impacts of the SOPT implementation
- Proposal for environmental criteria for selection of projects.
- Compilation of a draft environmental report.

2 Sectoral Operational Programme - Transport content and context

2.1 **Introduction**

The Sectoral Operational Programme – Transport is a document concerning the use of the EU financial and national co-financing sources in the area of transport in Romania. The programme is being developed by the Ministry of Transport, Construction and Tourism of Romania. The SOPT is being elaborated upon the objectives of the National Strategic Reference Framework (hereinafter NRSF), in particular on its transport objective (as in the draft version of April 2006) was set "to promote a transport system in Romania, which will facilitate safe, fast and efficient movement of people and goods nationally and internationally to European standards".

The SOPT sets the objectives, priority axes and key areas of interventions for support of the framework of which it will be possible to submit project proposal for co-financing from the EU Structural and Cohesion Funds. SOPT will be financed from European Regional Development Fund (ERDF) and Cohesion Fund (CF) (as indicated in the April Draft of NRSF).

2.2 **Summary of main chapters**

The SOPT (draft of April 2006) contains the following main parts:

- Abbreviations and acronyms
- List of tables
- List of figures;
- Introduction

1. Analysis of the current situation
    - Recent trends in the transport sector of Romania;
    - Road transport;
    - Rail Transport;
    - Air Transport;
    - Waterborne transport;
    - Intermodal and combined transport;
    - System review;
2. SWOT (strengths, weaknesses, opportunities and threats) analysis
3. Strategy:
    - Objectives;
    - List of priority axes;
    - Coherence and compliance with the community and national policies;
    - Complementarity with other Operational Programmes and the operations financed from EAFRD and EFF;
4. Financial plan:
    - SOPT financial plan;
    - Major projects.

5. Implementation
    - Management;
    - Monitoring and Evaluation.
    - Financial Management and Control,
    - Information and publicity
    - Single management information system
6. Partnership

- Annexes:
    - Indicative list of major projects;
    - Indicative list of state aid schemes;
    - Ex-ante evaluation summary (to follow);
    - SOPT supporting information

All chapters and sections were reviewed during the strategic environmental assessment focusing on those parts that could reveal the environmental effects of the projects to be funded under the priorities of the SOPT.

2.3 General and specific objectives and priority axes and justification why certain issues are not dealt in SOPT

The objective of the SOPT is to "promote a transport system in Romania, which will facilitate safe, fast and efficient movement of persons and goods with appropriate level of service at European standards, nationally, Europe-wide and between and within Romanian regions". Global objective is in accordance with the General Principles of the EU Cohesion Policy 2007-2013 (Community Strategic Guidelines, 2007-2013).

In order to achieve the global objective, financial means within the SOPT will be concentrated on defined priority axes which are aimed at implementing 4 specific objectives of the SOPT. Specific objectives of the programme are as follows:

- Promote international and transit movements of people and goods in Romania by providing effective connections of the port of Constanta, as well as Greece, Bulgaria and Turkey, with the EU through the modernization and development of the relevant TEN-T priority axes;
- Promote effective movement of persons and goods among Romanian regions and their transfer from the hinterland to priority axes by modernizing and developing national and TEN-T networks;
- Promote the development of a balanced transport system of modes, based on the respective competitive advantage of each, by encouraging the development of rail, waterborne and inter modal transport;
- Promote sustainable development especially by minimizing adverse effects of transport on the environment and improving safety.

The global and specific objectives of the SOPT are on a national scale therefore the analysis of the SOPT was on the national level as well. It is recommended to present in the SOPT the details of the planned routs for renovation and extension in a visual form to enable better presentation and specification.

The SOPT has the following Priority axes:

1. Modernization and development of TEN-T priority axes

2. Modernization and development of the national transport infrastructure outside the TEN-T priority axes
3. Upgrade the railway passenger rolling stock on the national and TEN-T railway networks
4. Sustainable development of the transport sector
5. Technical Assistance

It is emphasized in the SOPT that urban transport infrastructure is not the subject of the SOPT, and it may be dealt by ROP, which addresses regional policy issues, since municipal transport is a matter which is governed by municipalities and local authorities. SEA analysis and recommendations contain references to the public transport (PT) focusing mostly on the national and international infrastructure used by PT, since there is no way to separate it, analyzing the impacts of the development of rail, air and water transport addressed in the SOPT as well as Priority axes (5) on "Sustainable development of the transport sector", which is impossible to split from PT development, especially if one of the Key Areas of Intervention under PA-5 is aimed at the introduction of efficient non-polluting/environmentally friendly transport infrastructure initiatives for **all transport modes** and mitigation of the environmental impacts of the past developments in the transport sector as a whole. The SEA team considers that such measures should be applicable to PT as well.

2.4 Links to relevant national plans and programmes and international (European) documents

The SOPT main objectives are in correspondence with the strategic part of the Romanian NRSF (2007-2013, draft April 2006) that is under finalization and with the National Development Plan (NDP). Knowing the scope and focus of the SOPT, it was natural to anticipate that there will be links to national and international (mainly European) strategic programming and legal documents, which have been highlighted in the SOPT Chapter 3.3 on "Coherence and compliance with the community and national policies".

SEA determined that in terms of the environment and transport, the SOPT has a link to the following national concepts:

- Law no. 271/2003, for ratifying the Gothenburg Protocol
- Governmental Decision (hereinafter GD) no. 731/2004 on the approval of the National Strategy for Atmosphere Protection (Of.J.no.496/02.06.2004)
- GD no. 738/2004 on the approval of the National Action Plan for Atmosphere Protection (Of.J.no.476/27.05.2004)
- National Reducing Plan for sulphur dioxide and nitrogen oxides emissions and powders from large combustion plants and the measures take on account the conformation of the limit values for the emission, approved by Joint Ministerial Order MEWM 833/13.09.2005, MEC 545/26.09.2005 MAI 859/2005 (Of.J.no.888/4.10.2005).
- GD no. 568/2001 (Of.J.no.348/29.06.2001) on setting up the technical requirements for limiting the VOC emissions resulting from storing, loading, unloading and distribution of petrol from terminals to service stations, amended by GD no.893/2005
- Order of the Minister of EWM no. 781/2004 on the approval of Methodological Norms regarding the measurement and analyses of volatile organic compounds resulted from storage and loading/ unloading of petrol at terminals (Of.J.no.1243/23.12.2004);

- Order of the Minister of Industry and Resources no. 337/2001 approving the Norms regarding the technical inspection of the installations, equipment and devices used for reducing VOC emissions resulted from storing, loading, unloading and distribution of petrol from terminals and service stations (Of.J.no.10/10.01.2002), as amended by Order of the Minister of Economy and Commerce no.122/2005 (Of.J.no.324/18.04.2005)
- EGO no. 243/2000 on atmosphere protection (Of. J. no. 63/06.12.2000) adopted by Law no. 655/2001 (Of.J.no.773/04.12.2001).
- DG no. 541/2003 amended and supplemented by GD 322/2005 on establishment of certain measures for limitation of emissions of certain pollutants into the air from large combustion plants through are transposed the provisions of Directive 2001/80/EC;
- Order of the Minister of Environment and Water Management no. 592/2002 on the approval of the Norms regarding the establishing of the limit values, of the threshold values and of criteria and methods of assessment for sulphur dioxide, nitrogen dioxide and nitrogen oxides, particulate matters, (PM10 and PM2.5) lead, benzene, carbon monoxide and ozone in ambient air - (Of.J.no.765/21.10.2002);
- National Sustainable Development Strategy (1999).
- EGO no.195/2005 on Environmental protection (Of. J. no. 1196/30.12.2005) approved by Law no. 265/2006 (Of.J.no.586/06.07.2006);
- GD 321/2005 for reassessment and management of the environmental noise;
- Law no. 24/1994 (Of.J.no.119/12.05.1994) ratified the UN Framework Convention on Climate Change (hereinafter UNFCCC)
- Law no.3/2001 (Of.J.no.81/16.02.2001) ratified the UNFCCC's Kyoto Protocol
- National Strategy on Climate Change 2005-2007, approved by GD no.645/2005 (Of.J.no.670/27.07 2005
- National Action plan on Climate Change 2005-2007, approved by GD no.1877/2005 (Of.J.no.110/ 06.02.2006);
- MO of Waters and Environmental Protection no. 860/2002 (Of.J.no.52/03.01.2003) on the approval of the procedure for environmental impact assessment and issue of the environmental agreement;
- GD no. 918/2002 (Of.J.no.686/17.09.2002) establishing the framework procedure for the environmental impact assessment and approving the list of public and private projects which the procedure must be applied.

Some of the above mentioned documents are being referred and linked with the strategy of the SOPT, such as Law 3/2001 for ratifying the Kyoto Agreement and Government Decision 321/2005 for reassessment and management of the environmental noise. Others are important from the environmental assessment point of view.

European documents referred to in the SOPT were: European strategies for growth, jobs (Lisbon Agenda, 2000), Community Strategic Guidelines for the Cohesion Policy in support of growth and jobs, 2007-2013, Negotiation Chapter 9-Transport, White Paper on European transport policy (EC, 2001) and Conclusions of the European Council from Goteborg 2001.

Direct link is drawn in the SOPT to the international strategic framework with references to sustainable development (Gothenburg, 2001), which is underlined in the SOPT.

EU Strategy for Sustainable Development (Gothenburg 2001)

The European Council in Gothenburg (2001) adopted the first EU Sustainable Development Strategy (hereinafter EUSDS), which was renewed in Brussels in 2006 with the view of the proposals of the World Summit on Sustainable Development in Johannesburg (2002). It made synergies with the Lisbon strategy therefore amending the SDS with the objectives aimed at social and economic dimension of the development.

The EUSDS points out to the unsustainable trends in relation to climate change and energy use, which threatens public health, poverty and social exclusion, management of natural resources, biodiversity loss, land use and transport. The EUSDS posed new targets to European countries, with some of them directly or indirectly linked to the transport sector. Key challenges presented in the EUSDS are directly linked with the transport. First of them is Climate Change and clean energy and the second is sustainable development. Operational objectives that are related to transport include:

- Adaptation to, and mitigation of, climate change should be integrated in all relevant European policies.
- By 2010 5,75% of transport fuel should consist of bio-fuels, as an indicative target;
- Reaching an overall saving of 9% of final energy consumption over 9 years until 2017;
- Decoupling economic growth and the demand for transport with the aim of reducing environmental impacts.
- Achieving sustainable levels of transport energy use and reducing transport greenhouse gas emissions.
- Reducing pollutant emissions from transport to levels that minimise effects on human health and/or the environment.
- Achieving a balanced shift towards environment friendly transport modes to bring about a sustainable transport and mobility system.
- Reducing transport noise both at source and through mitigation measures to ensure overall exposure levels minimise impacts on health.
- Modernising the EU framework for public passenger transport services to encourage better efficiency and performance by 2010.
- In line with the EU strategy on CO2 emissions from light duty vehicles, the average new car fleet should achieve CO2 emissions of 140g/km (2008/09) and 120g/km (2012).
- Halving road transport deaths by 2010 compared to 2000.

The introduction of policies to promote railways (both in passenger and freight transport) and public road transport leads to more favourable development of the EU transport sector. Improvements are even greater if policies towards the more rational use of transport modes (through improving vehicle load factors) are also implemented. In this case energy requirements in the transport sector may fall by -13.0% from actual levels in 2010 and remain quite significant even in the long run (-8.7% in 2030).

There was a limited response of consumers to several policy instruments used in the past, e.g. a very high taxation on private road transport fuels. The increasing importance of the transport sector in the future evolution of the EU energy system resulted in the White Paper for Transport, which can play a significant role in easing the pressures caused by rapid growth of the transport use. That kind of policy options also will contribute to improvements in congestion, air quality etc.

In order to obtain a better analytical insight into the results of this scenario, two alternative cases were defined:

- A scenario assuming that the share of rail (both passenger and freight) and public road transport activity will remain essentially stable at the 1998 level up to 2010, in contrast to the actual trend of continuously diminishing shares of these modes. This growth will occur to the detriment of other transport modes, thereby leading to a higher share of rail and public road transport.
- A scenario involving the assumptions made above for rail and public road transport activity but assuming, additionally, that load factors of all transport modes will increase significantly by 2010 in comparison to actual trends. This means that all transport modes will be used in a much more efficient way than today. This scenario is in line with the Commission's White Paper on Transport. It can therefore be considered as the scenario involving virtually all measures that can be implemented up to 2010 to curb energy consumption and CO2 emissions from transportation under future economic developments.

The Commission's November 2000 Green Paper on Security of Supply highlighted the important role of transport in the growth of energy demand and CO2 emissions. Transport in the enlarged Union accounted for 26% of overall CO2 emissions in 2000. According to TEN-STAC estimates for the enlarged EU, greenhouse gases are expected to increase for all transport modes between 2000 and 2020 by 40%. Emissions are set to increase by almost 34% for current and new Member States and approximately by 70% in the acceding countries. The highest growth is forecast for the air transport sector, 67% for the enlarged EU as a whole.

The European Environment Agency report (No 3/2006) "Transport and environment facing a dilemma: TERM 2005: indicators tracking transport and environment in the European Union" underline few very important key messages for transport sector:

- Freight transport volumes are growing with no sign of decoupling from GDP;
- Passenger transport volumes have paralleled economic growth;
- Greenhouse gas emissions from transport are growing;
- Harmful emissions decline, but air quality problems require continued attention;
- Road freight continues to gain market share;
- Air passenger transport grows while share of road and rail remain constant;
- Developments in fuels contribute to emission reductions;
- Car occupancy and lorry load factors decline in countries for which data are available;
- New technology can cut emissions and fuel consumption, but more effort is needed to achieve CO2 targets;
- Price structures increasingly aligned with and yet well below external costs level.

The Commission's White Paper proposes some 60 specific measures on transport policy to be taken at Community level, which address the following issues, and are be a part of Romanian SOPT:

- Revitalizing the railways;
- Improving quality in the road transport sector;

- Promoting transport by sea and inland waterway;
- Striking a balance between growth in air transport and the environment.
- Turning inter-modality into reality;
- Building the trans-European transport network;
- Improving road safety;
- Adopting a policy on effective charging for transport;
- Recognizing the rights and obligations of users;
- Developing high-quality urban transport;
- Putting research and technology at the service of clean, efficient transport;
- Developing medium- and long-term environmental objectives for a sustainable transport system.

Elaborating major developments strategies, as SOPT, to produce an overall impact greater than could be produced by any other programs is a major thrust of sustainable development plans. Documenting and evaluating these sustainability initiatives—both their institutional framework and the substance of their accomplishments—could provide valuable models for further developments of transport in Romania according to sustainable principles.

The emerging view, then, is that economic development and environmental protection are both desired objectives along with social justice (equity); that transportation planners should be pursuing strategies, as is the SOPT, that deliver on all counts, not just on the economic front; and that analyses should reflect the full range of concerns about projects—economic, social, and environmental.

It would further recognize that a continuing policy of unrestricted car use is not sustainable – economically, socially or environmentally. An alternative and sustainable transport strategy would contain specific targets and measures to reduce car use. This would be achieved by a number of means, which would fall broadly into two categories:

a. reducing travel demand (via means such as better urban planning practices including mixed use zoning, urban infill rather than continuing sprawl, development of more effective activity centres, etc), and

b. reversing the current hierarchy of transport priorities so that planning and funding are consistently directed to facilitating the following priorities (in this order): public transport, rail, multi modal, walking, cycling and other transport modes (including private motor vehicles).

The EU has initiated a number of policy initiatives to limit the negative effects of the growing transport development trend. It is encouraging a shift from road transport to modes with lower environmental impacts, such as clean buses, shipping and rail. The Commission has also proposed that Member States introduce infrastructure charging to influence transport demand, by moving towards a situation where prices paid by transport users reflect the full costs to society (e.g. the Euro vignette directive), but implementation remains limited. Moreover, significant progress albeit offset by increase in demand and volume of transport, has been made in vehicle and fuel technology, driven by EU legislation and initiatives. Finally, actions are being pursued to improve the urban environment and land-use management, for example through the EU Research Framework Programme.

Complete list of relevant national and European strategic documents is provided in the Annex 3 to this document. Relevant objectives and priorities proposed by the existing international and national conceptual documents have been used by

the SEA team when compiling a set of reference objectives in the environment and health protection area (as provided in the Chapter 5 below).

3 An outline of the reasons for selecting the options (alternatives) examined and issues related to collection of data required

3.1 **Choosing the options to be examined**

Relevant legislation – both Directive (2001/42/EC) and Governmental Decision (1076/2004) – require the reasonable alternatives of the programme to be considered within the SEA.

In the case of the programming for SF the SOPs are a one option programmes and a no-programme (or no-SOPT) alternative is a default alternative to the programming document. The no-programme has been examined in the chapter 4 on the Current state of the environment and the likely evolution thereof without implementation of the SOPT, which revealed that the no-SOPT alternative would mean further deterioration of environmental situation and as such, no action is likely to have significant negative effects on the environment. Therefore the analysis further concentrated not on the alternatives of the SOP, but on the alternatives and possible improvement of positive effects on the environment of components of the SOP, such as objectives, priority axes and key areas of intervention (KAIs).

SEA Directive guidance of the EC "Implementation of Directive 2001/42 on the Assessment of the Effects of Certain Plans and Programmes on the Environment" provides the most clear explanation on the treatment of the alternatives in the plan or programme elaboration process.

Para 5.11 of the guidance refers to the fact that "the obligation to identify, describe and evaluate reasonable alternatives must be read in the context of the objective of the Directive which is to ensure that the effects of implementing plans and programmes are taken into account during their preparation and before their adoption". Since the SEA process takes place before the adaptation of the SOP and enables analysis, it complies with the requirement to have analysis performed before the adaptation process.

Additionally, the para 5.14 refers to the fact that the "alternatives chosen should be realistic". The assessment should not engage into a process of elaboration of unrealistic alternatives and focus on the work, which can bring the biggest benefits to the process and minimization of negative and increase of positive effects to the environment.

Further Para 5.14 refers to the process of the studying process: "Part of the reason for studying alternatives, is to find ways of reducing or avoiding the significant adverse environmental effects of the proposed plan or programme. Ideally, though the Directive does not require that, the final draft plan or programme would be the one which best contributes to the objectives set out in Article 1. A deliberate selection of alternatives for assessment, which had much more adverse effects, in order to promote the draft plan or programme would

not be appropriate for the fulfillment of the purpose of this paragraph." This approach presented in the Guidance enabled the SEA team, due to programming process and available time, to focus on the programme as the core alternative and worked on options for internal levels of the programming process.

In case of operational programmes, the alternatives were discussed during the elaboration of SOPT. The SEA team assessed the **alternative objectives, priority axes** (except the Priority Axis focused on Technical Assistance) **and priority areas of interventions** contained in the draft working version of SOPT, and provided recommendations **for choosing their optimal formulation** (from the environmental point of view).

The analysis of objectives, priority axes and KAIs resulted in formulation of more environmentally sound alternatives to the options presented in the SOP. When SEA identified a possible significant negative effect on the level of KAI, proposed alternative formulations were suggested of the KAIs or in the form of the system for environmental evaluation and selection of project applications. All these options have been suggested to the relevant authorities through internal submissions (SEA working group) and internal meetings with MAs. They were also presented to the public as in the draft environmental report. Some options generated by the SEA experts have been deemed too extreme and therefore were not supported by the Managing Authority

Final draft of SOPT is being submitted as a "one-option" document accompanied by ex-ante evaluation and environmental reports and the statement of the SEA Authority on how the environmental considerations have been integrated in the plan or programme, and how the environmental report have been prepared.

SEA team is well aware that many real alternatives for implementation of the programme will be when the specific projects. These projects will vary in size, type, location, etc and will inevitably have differing environmental impacts. In order to select those alternative projects with the best environmental performance, SEA team suggested environmental indicators and projects selection criteria that should be included into the implementation and monitoring system of SOPT.

3.2 **Assessment of alternative SOPT versions**

The draft environmental report was completed on 15th of November and was prepared for the version SOP dated April and included modifications of November versions of 2006. The SOPT and the draft environmental report were made available for public consultations at the end of November 2006. Based on the request of the Ministry of Finance, that wished to ensure that SEA considers alternatives options, another draft / version of the SOPT was provided to the SEA team on 23rd of January 2007. This version has been consequently still included in the final version of the environmental report.

Results of the assessments covered two versions of the SOPT: i) 2005 version of this SOPT and ii) April 2006 version of the SOPT.

Both versions of the SOPT differ by the scope. Earlier version lacked the objective "Promote sustainable development especially by minimizing adverse effects

of transport on the environment and improving safety" and KAI 4.3 within Priority axis 4 "Sustainable development of the transport sector" called "Minimise adverse effects of transport on the environment".

Assessment of the Key Area of Intervention "Minimise adverse effects of transport on the environment" proposed in later SOPT versions indicates that this intervention as well as adding a separate objective of the SOPT on sustainable transport development is likely to have significantly positive environmental effects and its inclusion improves an overall balance of positive and adverse environmental impacts of the SOPT.

Comparison of both versions of the SOPT thus leads to a conclusion that the latest version of SOPT (April and November 2006) is likely to have more positive environmental effects then the previous (2005) version of the SOPT, since

- the new objective "Promote sustainable development especially by minimizing adverse effects of transport on the environment and improving safety" brought into the SOPT will clearly add to the environmental safety of the transport sector;
- KAI 4.3 "Minimise adverse effects of transport on the environment" is likely to have significant positive effects by expending activities under priority axis 4, then the originally proposal
- the last version enables better integration of sustainable development and environment to the SOPT.

3.3 **Issues related to collecting required data and other**

The Ministry of Public Finance and the Managing Authority have provided to the SEA team sufficient amount of relevant documents to work out the assessment. To date the April (second) and and November (third) drafts of SOPT were assessed for significant environmental effects.

Considering that the SEA started in a moment when the second draft of the SOPT was prepared, the benefits of the assessment would have been more efficient, if the process had started earlier together with the programming process (The first draft of the SOP was produced in December 2005). The SEA team emphasizes that it's rather difficult for the MA to introduce changes into the document, which has been in preparation for more than a 1 year. Parallel start of the SEA with the programming would have enabled a gradual optimization of the SOPT from the environmental point of view and would have facilitated a deeper mutual cooperation among the MA and SEA teams.

The analysis, recommendations and observations of the environmental effects of the SOPT presented in this report were elaborated during the period between of September and October 2006. Nevertheless, the SEA team produced the Environmental Report adhering to the requirements of the SEA Directive (2001/42/EC) and Romanian DG no.1076/8.07.2004 in the best scope achievable within the available time limits.

The Draft Environmental Report is a self-standing document which is also annexed to the Ex-ante Report.

4 The current state of the environment and the likely evolution thereof without implementation of the SOPT

4.1 Environmental analysis and likely evolution thereof without implementation of the SOPT

The environmental situation analysis was prepared for all environmental issues identified during the scoping phase of the project. The issues are as follow: air, water, soil, climate change, biodiversity, human health, environmental risk management, resource efficiency and conservation/ sustainable resource management, landscape and cultural heritage, energy efficiency and renewable energy sources, awareness raising on environmental issues and sustainable transport

In this section, the key topics and problems of the environment and public health are identified, with attention being paid to the link towards issues caused by transport sector in particular.

Table 1. Current state of the environment and likely evolution of thereof without implementation of the SOPT

Env. issues	Current state of the environmental	Likely future trends
Air	The impact of transport to the air quality has increased due to an increase in numbers of new private and public vehicles and of the mobility for both passengers and freight, both for domestic and international transport. The main transport emissions are NOx, SOx, PM (particulate matter), VOCs, as well as heavy metals (e.g. lead). Romania planed a total phase-out of vehicles without exhaust emission control by 2005, though the objective was difficult to reach given the slow progress that has been made so far in introducing unleaded petrol. To date less than 40% of petrol sold is unleaded. Furthermore, in order to ensure the correct functioning of vehicles' exhaust-emission control the fuel quality in general should be improved. In 1996 a very small fraction of the petrol-driven vehicles had catalytic converters in the Romania, having the lowest share in 1996 among EU (close to 0 %). The situation gradually improved due to improvements	With transport sector being on a rise, the air quality problems caused by transport will rise, especially on specific corridors, in the high sensitive areas (mountain passes), on the congested network and in the urban areas. PT, which is an internationally recognized way to reduce the air pollution (especially urban), is used less and less in Romania (see more under "Sustainable transport" issue) due to unsatisfactory maintenance level, limited number of cars and bad management of time (time schedule). If no action is taken, usage of public transport and its share will continue to drop sharply and private cars will grow further diminishing poor urban air quality. If no real measures and amendments will take place, the incidence of respiratory diseases will increase in big cities, given the increasing number of cars, until less polluting cars will be introduced to partly reduce the problems. With regards to pollution due to PM, if there will be no improvement

Env. issues	Current state of the environmental	Likely future trends
	in economy, but still large way to go before it reaches the EU average. The air pollution in the cities is largely caused transport, though there is no data in Romania on the comparison of pollution caused by private transport vs. PT or other means of pollution.	in Bucharest on the short and medium term, the already alarming situation in relation to human health will continue to deteriorate not only in the city, but also in the surrounding areas. An indirect impact is likely from the transfer of the impact on environment to the impact on the socio-eco system, as a result of life quality deteriorating. Trains are seen as more ecological means of transportation but if the transportation costs and the quality as well as the accessibility to more communities in country will not improve it is unlikely the reducing usage trend will be overcome.
Water	Though transport is not the major contributor to the water pollution, it is contributing to the quality of the water of the surface and indirectly to the underground water quality due to soil pollution. ***Danube and the Black Sea water*** The Danube collects the surface water of most tributaries in Romania and is affected by direct pollution (waterborne transport and waste disposal), underground water quality and run of from soil. The water quality in the Danube is largely polluted by nitrogen and phosphorus compounds as well as other chemicals released to the surface mostly by the economic and social activities on land. Danube water was classified as class II by its ecological status and it as significant amounts of organo-chloride pesticides type, toxic and carcinogenic substances, concentrations of which exceed sometimes the maximum admissible limits. In 2003 the Danube got very low due to a very sever droughts and it affected the overall quality of water as well as navigation conditions in the river.	***Danube and the Black Sea water*** The Black Sea ecosystem mostly suffers from eutrophication and insufficiently treated sewage flowing into the Danube or the other tributary rivers. If environmental measures to the transport network will not be carried out, pollution of the Danube and the Black Sea will continue from oil discharges to the surface and the marine waters by boats and ships with the incidents increasing due to outdated fleet and service facilities in the harbours and docking stations. The pollution accidents of releases of harmful substances from cargo ships can be curbed or tackled only if well qualified personnel have tools and materials to deal with such pollution. With increased trade by water and roads will increase the risk of such accidents and if no measures are taken, there will be more harm done to the aquatic eco-systems and indirectly to human health.
Soil	Soil pollution from transport sector is caused largely due to emissions to the air, by direct spills (oil, petrol and chemicals) and discharges on the road surfaces which are washed off with rain waters. Data on the soil pollution due to traffic is scares in Romania, though the problem, even if localized is of significance in relation to indirect effect on surface and underground water quality. Means of keeping road surface free from ice in winter time is of specially concern. Soil erosion is being caused by new constructions of infrastructure if anti-erosion measures are not well	With intensification of traffic, pollution from transport sector and impact on soil will continue to grow. The risk of accidents and accidental and routine (winter ice clearance) spills of chemical will increase putting more pressure on this natural resource. With slow efforts to reduce lead and sulphur pollution from petrol and oil, transport sector will continue to contribute to acidification and lead pollution of the surrounding of the roads.

Env. issues	Current state of the environmental	Likely future trends
	planned. Especially the problem is being exacerbated if the sections of forest are cleared for the new roads. In such cases where anti-erosion measures are mostly degraded, significant soil losses occur and leakage of pollution to the underground waters. Acidification is an issue largely caused by emissions from LCPs and thermal municipal units with the transport sector being the third largest source of emissions containing sulphur. The outcome of it is soil acidification and pollution of open water bodies, impact on ecosystems, as well as erosion of buildings, degradation of archaeological and cultural sites.	
Climate change	According to the 3rd National Communication on CC in 2001 11% of GHG emissions belonged to transport sector in Romania. The total net GHG emissions decreased by about 50% in 2002 compared to the reference year 1989. This large decrease is mainly due to industrial production decrease (decrease of power consumption and closure of some industrial branches/outputs) and the restructuring of the economy in the transition to a market economy rather than climate change reduction measures and policies. Due to reduction of emission of GHG from industry, share of transport emission on GHG increased in Romania, the trend noted by EEA in its TERM 2005 report (No.3/2006)..	As Romania is making efforts to accelerate economic growth, the transport demand and traffic flows will further grow in Romania, the idea is to limit the growth of GHG emissions from transport by making efforts to optimise the use of different transport modes. More use of environmentally friendly transport modes as rail, inland water and PT will limit the increase of the GHG from the transport sector. The largest growth in emissions in relative terms can be witnessed in the transport sector. The increasing trends of usage of private transport will further increase grow of GHG emissions share because of transport.
Biodiversity	***Natura 2000 network*** There are 5 of 11 bio-geographic regions in Romania, which is the highest number of bio-geographic regions found within a single EU Member State. Natura 2000 network is under development and should be finalized by the end of this year. 190 SPA (special avifauna protection areas) have been identified representing about 27% of the Romanian territory and 370 SCI (sites of community importance) representing about 14 % of the Romanian territory have been identified. There are areas where anthropogenic activities have had negative effects on the conservation of wild species. Construction of roads and transport corridors has a direct and mostly irreversible impact on the ecosystems and biodiversity. At the moment Romania enjoys one of the smallest segmentation of the habitats, which has the biggest value	If no measures are taken to preserve biodiversity due to new transport corridors, further segmentation of landscape and habitats will take place which could reduce natural diversity both in natural species quality and compositions. Intensification of investments into the transport sector (development of this sector has a strong impact on biodiversity and protection areas) with no measures taken to reduce the impacts on biodiversity, forest and habitats will lead to further habitat fragmentation and biodiversity loss. The loss will be accelerated by intensification of economy development and especially linked with the forest product use and illegal or large scale uncontrolled forest cuttings. ***Natura 2000 network*** If the Natura 2000 sites list will not be approved by the end of the

Env. issues	Current state of the environmental	Likely future trends
	from nature conservation point of view.	year, many projects of the SOPT may start without assessment and measures which would take into account the network.
Human health	***Noise*** Noise is a matter of concern especially in the urban agglomerations which are high sensitive areas due to the high density of population. The main source is the road traffic (in and outside the cities) as well as railway. As a result of the intense traffic levels of noise beyond the standard admissible norms are registered. PT vehicles are also a major noise and vibration source. The existence of surface PT increase the phonic pollution, especially on the main roads, where more transportation lines are concentrated and PT lines are not separated and prioritised. Noise and vibration generated by the road traffic is clearly a Romanian phenomenon, with a significant effect on the people which live or work in the proximity of intensive traffic zones. The noise and vibration caused by the road traffic in the urban areas comes mainly from the engines and exhaust gas devices and in the rural areas it is caused by the interaction of tiers with the carriage road. The percentage values of the population quota which is estimated to be affected by the corresponding noise levels (Leq), per 24 hours 2 m far from the building frontage, vary from one noise source to other. So, the road traffic affects 32% of population with noise levels up to 55 dB(A), 23% with noise levels up to 60 dB(A) and 10.5% with noise levels between 65-75 dB(A). The rail traffic affects only 5% of population with noise levels up to 60 dB(A), and only 1.5% with noise levels between 65-70 dB(A). The air traffic affects only 0.05% of entire population with noise levels up to 60 dB(A) One of the sources of noise pollution in Romania is air traffic (due to use of noisy aircrafts). Air passenger traffic has been growing strongly since 1998 at an average rate exceeding 10% per annum, recording in 2005 over 4 millions passengers transported (70.9% of them via the Henri Coanda Airport, Bucharest). Domestic travel accounted for just over 11% of all passenger traffic at	***Noise*** Due to intensification of the traffic in the urban areas as well as outside the towns and cities, the road noise traffic is likely to grow. The noise arising from air traffic will grow as well due to increase in number of flights and passengers. ***Traffic safety*** According to Romanian statistics, the number of serious road accidents has declined from around 9,000 per year in the early 1990s to 6,900 in 2003. However, according to the Road Policy data, the number of serious accidents rise with 5.3% between 2004 and 2005, the number of people killed rising in the same period with 8.2%. This trend is likely to continue due to increasing number of vehicles if no measures are taken and safety of roads and pedestrians stays the same. The grow rate of 6,800 AADT in 2015 is forecast raising the concern.

Env. issues	Current state of the environmental	Likely future trends
	Romanian airports. Henri Coanda Airport handles around 80% of all air cargo in Romania. ***Traffic safety*** After the Statistical data in 1991 in Romania was 8,948 car traffic accidents and in 2005 the number was declined up to 6,905 (from which 36.1% are with death people). About 40% of the serious accidents occur on national roads, another 40% in urban area and the remaining 20% on other roads. The number of deaths from road accidents appears to be similar to other countries, at 11 per 100,000 inhabitants. However, considering a low level vehicle ownership in Romania, the accident rate per million vehicle-km is significantly higher than in other countries.	
Environmental risk management	Transport accidents have a big impact on the environment by causing intense air and water pollution by discharges of harmful substances into air (traffic accidents often result in fires) as well as water (spills from vehicles transporting harmful substances on surface and in waters, which are very toxic to humans as well as nature). Information on the extent of the phenomenon was not obtained during the study and though such accidents are rate, the intensity of traffic on the roads and road congestion increased the risk of such accidents additionally due to worsened cover of rails and road surfaces. Additional environmental risks comes from oil pipes breaking, illegal waste deposits from ships, leakages of detergents and organic pollutants and illegal discharged of oil from ships, etc.	With increase in transport use and transportation of good within Romania and on Romania's transit routs such accidents and risk is likely to grow. If no measures are taken to make the roads more secure (with better surfaces, marking and measures ensuring traffic safety), improved rail infrastructure as well as port facilities, such risk is likely to grow. Oil spills to marine areas have a significant impact on environmental quality affecting all aspects of marine ecosystems. The impacts of accidental spills can be catastrophic on coastal zones that are often sites designated for their high ecological quality. Spills can also have severe repercussions for tourism, aqua-culture and fisheries in affected areas.
Resource efficiency and conservation/ sustainable resource management	Resources used in transport sector relate to transport infrastructure (e.g. land, stone, sand, wood), transport vehicles (e.g. iron, metals) and fuel. Up to date, transport sector experience relatively low pressure related to natural resources used to develop transport infrastructure due to low investments, though in the last few years the trend of the development accelerated, which is putting more pressures on the resources related to infrastructure development especially land. Due to increased number of cars and transporting vehicles the consumption of fuel increased. Though the car fleet remains rather old, especially in PT (including trains). Energy	Energy efficiency is one of the major targets for transport sector and if no measures will be implemented from SOPT, the private car fleet will continue to improve due to overall development of the country's economy, but the PT transport, which is the solution to reduce pollution caused by transport vehicles and reduce congestion in the urban cities will continue to deteriorate. If no investments are made into infrastructure, the pressure on natural resources will be less to be used for the development of the roads and rail roads, but the pressure on the energy resources used to continue to grow due to ineffi-

Env. issues	Current state of the environmental	Likely future trends
	efficiency in the transport sector is one of the most important issues which is exacerbated by the old infrastructure which is energy intensive.	cient transport infrastructure.
Landscape and cultural heritage	Transport and transport infrastructure directly impact landscape of the country. The motorway construction speed has increased in the last years in Romania, which is rapidly changing the landscape of the country. Land is under continuous pressure from new transport infrastructure. Road is the biggest land consumer, followed by rail. After economic and social changes of the last decade of XX c., Romania has accumulated abandoned factory and infrastructure areas, sites with unfinished constructions and dilapidating abandoned housing units. Data on the area covered with brownfields is scares. Transport infrastructure brownfields constitute environmental potential, but unmanaged they reduce the attractiveness of the country even having in mind rich natural and cultural resources, examples of which are roads with bad maintenance as well as abandoned rail roads (especially narrow ones used for industrial purposes). Romania can be proud of the largest non-fragmented forest areas found in Europe (up 3,400 km², EEA-ETC/TE, 2002). ***The Black Sea side*** Development of the water born transport as well as development of the harbours on the sea side transformed the landscape of the Black Sea. Shipping is both the mean of transportation of industrial products as well as PT and had a strong effect on the transformation of the cultural and economic landscape of the cities such as Constanta, Mangalia and Midia. The major river/sea ports of Romania are Braila, Galati, Tulcea and Sulina on the Danube. Conditions of the ports are deteriorated and constitute not only threat to natural eco-systems but also to cultural landscape attractiveness of Romania.	If the actual tendencies related to the construction of new and major motorways without measures to reduce impacts on landscape will continue, they will cause further landscape fragmentation and cultural heritage deterioration due to the negative impacts of the traffic. Current situation and past trends with brownfield revitalization or the lack of thereof will further put pressures on green zones in and around urban areas threatening cultural landscape and elimination of green spaces in the cities which are already suffer from congestion and pollution. In the long run deterioration of the cultural and natural landscapes is inevitable. The take over of green fields in opposite to brownfields come from construction of new housings, urban development, shopping and administrative centres as well as industrial/production centres and business areas. Land taken by transport is withdrawn from other uses. Land take in natural areas may lead to a decrease of biodiversity, as may fragmentation by linear infrastructures such as roads, railways or canals. Land taken from agriculture or forestry may have harmful environmental effects (e.g. visual impact on landscapes) as well as socioeconomic impacts. Disused railway land is a valuable resource. Environmentally, the best alternative is to return this land back to nature. ***The Black Sea side*** Considering the global climatic changes and the general rise in the sea level, as well as the regional geo-ecological conditions that characterize the Danube - Danube Delta - Black Sea geo-system, one can estimate that the medium-term erosion process will be at least as active as in the past two decades. The long-term predictions reveal an extension of beach erosion, especially because of the continuous decrease of sand material in the coastal area, because of the permanent rise in the sea level and an ever-higher energy level of the hydro-meteorological factors.

Env. issues	Current state of the environmental	Likely future trends
Energy efficiency and renewable energy sources	Transport is nearly fully dependent on fossil fuels. Increased economy development enabled improvements in energy efficiency of public and private transport in Romania. It showed the greatest decline in energy consumption, corresponding to economic decline among AC-12, where Romanian energy consumption by transport sector decreased by around 15%. The improvements in economy reversed in the last years. 80% of energy is consumed in Romania by road transport. Final energy consumption between 1990 and 2000 has reduced in Romania by 23%. The impacts occurred mainly due to new vehicles being important or old ones being gradually replace on the market. Road is the only growing transport energy consumer in Eastern European countries, as noted by the EEA (2003).	Energy consumption by transport sector will follow the current trends if no investments will take place in public transport sector, which showed a drafting decline during the last 2 decades. Road transport will continue to be the largest energy consumer due to PT and rail being gradually withdraw from the infrastructure due to inefficiency. If no support is given to renewable energy sources (such as bio-fuel), this sphere will not pick up by itself and Romania will continue to stand aside from developments of bio-fuel and bio-fuel market in terms of production as well as use.
Awareness raising on environmental issues	There are very few initiatives on public awareness and mostly coming from the NGO sector. There are limited funds available for NGOs and the government does not provide resources for such activities. Public's environmentally responsible behaviour was badly damaged by lack of investments in public transport system and neglect of its development in Romania in the last decade or more. Public switched to and increased investments into private car ownership. This practice has accelerated with the recent economic development trends. Alternative transport means such as cycling and walking have not been promoted in Romania and deteriorating environmental situation (increasing air pollution in the urban locations especially) is not in favour to support and promote such means. Further more, access to public transport by elderly and handicapped people is not enabled and such infrastructure is absent at large. Little has been done in the past to promote and raise awareness of environmentally friendly behaviour of public in relation to transport.	Unless public awareness raising activities efficiently moves to the level of interactive information and the framework for response and involvement of the public, the objective will take more time to achieve. With other national priorities existing in governmental policy, such as road development, awareness raising on the PT and rail transport usage as well as environmental effects of transport system in general will remain low and supported only by a handful of NGOs and environmentally informed citizens. If awareness raising on environmental effects will not becomes a part of the environmental strategy for transport sector, the objective will be sustained on a grass root bases at large and no significant positive effect may be expected from the public in a long run.
Sustainable transport	Lack of investment during 1990-2004 and a poor service quality has led to a fall in the public transport use. Strong increase in the number of road vehicles and particularly passenger cars (from 1.29mln in 1990 to 3.23mln in 2001, i.e. from 55.7 passenger cars per 1,000 inhabitants in 1990 to 144.3 in 2001 was ob-	PT, which is not the core subject of the SOPT, but is linked with overall development of transport sector due to sharing the national transport infrastructure as well as some sub-sectors such as waterborne transport and railway covered. Improvements linked with renovation of the PT fleet and making it

Env. issues	Current state of the environmental	Likely future trends
	served in the past. Freight motor vehicles grew from 258,701 in 1990 to 597,047 in 2001 that is an increase of about 230%. The freight and passenger railway transport (in tons-km/year and respectively passengers-km/year) has been characterised by a sharp decline between 1990 and 2001: -71.8% and -64.1% respectively. Increase in road traffic resulted in congestion not only in the cities but in the narrow rural and international roads. During the same period, a similar situation was in the freight transport (in tons-km) and passenger transport (in passengers-km) of other transport means: inland waterways transport (- 16%, respectively -67%), maritime transport (- 98%) and air transport (- 79%, respectively - 41%), except road. Significant decrease in bus (3.5 times) and mini-bus passenger transport (2.5 times) usage over 1990 – 2004. Compared with the EU countries, the interurban bus and mini-bus passenger-km per inhabitant per year are by far the lowest in Romania. The average in the EU is around 1,000 passenger-km, compared with just 242 passenger-km in Romania. After a decrease between 1990 and 1999, the traffic in the port of Constanta reached 33 millions tons in 2001 (compared with 42.4 mil. tones in 1990). From 2000 to 2005 number of the air passengers grew 1.77 times. Railway transportation is an ecological transportation and one of the most effective measures in order to reduce pollution, with positive results both on the short and medium run. The poor condition of the rail infrastructure has triggered a reduction of the operational speed while the level of comfort is affected by the ageing passenger fleet. In addition, the train timetable does not appear to be suited to the current needs, in particular because of the extensive use of large train units at low frequencies. It appears that the rail passenger company is primarily operating trains before meeting passenger needs; in other words, it is still not customer-oriented enough as remains the case in many other countries.	more attractive to the public and private users contribute to the private and public transportation and traffic congestion. The rapid growth in car ownership will be experienced over the next 10 years. If the status of public rail and public transport will continue to deteriorate, the usage of it will continue to drop. It is estimated that overall passenger transport average increase (in passengers-km) will be of 3.7% per year between 2005 and 2015 (from General Master Plan for Transports in Romania), with higher rates for road transport and lower rates for rail transport. It is estimated that overall freight transport (in tons-km) will increase in average by 1.1% per year between 2001 and 2006 and by 5.3% per year from 2006, with higher rates for road transport and lower rates for rail transport. If no SOPT measures will be carried out, already poor condition of the rail infrastructure will further continue to deteriorate and a further reduction of the operational speed and safety movement will take place, while the level of comfort will be affected by the ageing passenger fleet. In the same time the rail passenger company is primarily responsible for operating trains and is not customer-oriented. All these issues will persist in the close future, if no improvements both to infrastructure and fleet will be made. Water transportation infrastructure condition is further deteriorating and in many cases the equipment is operating 20 years beyond its economic life. The Danube River is under a "natural flow". There are few and unsatisfactory measures for improving the conditions of navigation and safety of operation of the river. In addition the quality of navigation on the Sulina Channel is in great need of consolidation of the riverbanks, and establishing topo-hydrographic measurement and signalling systems on the Romanian section of the Danube River. Otherwise, the current traffic flow can drastically decrease in the future. The average EU urban and interurban passenger-km per inhabitant is around 1,000 while in Romania it is only 242, which means, unless

Env. issues	Current state of the environmental	Likely future trends
		the public transport will become more attractive immediately, the number of private cars will continue to grow or at least will not help decrease the traffic in towns. The rail network needs significant improvement given the usage and poor condition of the infrastructure for efficient connections – on several tracks sectors the speed is restricted - before the interoperability will be possible. Frequency, journey time, level of comfort and higher accessibility to more areas of the country, need a lot of improvement otherwise is unlikely that railway transport will play a significant role in transport, in the detriment of other means. If there will be no measures to justify the price it is unlikely that trains will become a favourite mean of transportation, but rather necessary, therefore not contributing too much to the option of increasing the environmentally friendly transport options in Romania.

4.2 Issues proposed to be included into SWOT analysis of the SOPT

Based on the environmental analysis the SEA team proposed amendment of the SWOT table with the issues presented in the table below.

Table 2. Recommended issues to be included into the SWOT table of the SOPT

Strengths	**Weaknesses**
- Existing public transport system. - SEA and EIA as the basic legislative tools to support environmental protection and sustainable development.	- Growing proportion of long-distance transport (transport of goods, raw materials, parts, etc.); - Reduced usage of public transport will be difficult to recover once lost; - Exceeding of noise limits in the cities - High contribution to the air pollution from traffic.
Opportunities	**Threats**
- supporting the less polluting transport modes (by developing sustainable transport infrastructures) will contribute to the human health, the environmental situation and at the same time, the economic competitiveness; - Growing individual transport costs (internalization of externalities); - Plans and actions to phase-out vehicles without exhaust emission control; - Further development of public transport systems - Plans and actions to phase out sales of unleaded petrol; - Adopting global environmental standards (ISO, EMAS) - New engines and techniques will improve energy efficiency and reduce air pollution	- Complicated (often applied bureaucratically) regulation tools, unsuitably transposed EU legislation - Growing fleet of vehicles causing high greenhouse gas emissions; - Construction of roads in green areas causing biodiversity degradation and increased usage of raw materials - Further development of means of transport causing significant adverse environmental effects (e.g. habitat fragmentation, landscape degradation)

5 The environmental characteristics of areas likely to be significantly affected

The SOPT is prepared for the whole territory of the Romania. Since its not possible to identify the territorial locations of the priorities and activities planned within the SOPT (the strategic level of the Sectoral Operation Programme is on the scale of the country) the environmental analysis of the characteristics and issues provided in the chapter 4 is applicable and responds to the needs of this particular item of the content, as required by the national law and the EC Directive.

Environmental characteristics of the areas, where the certain projects to be supported under the SOPT will be carried out shall be assessed by EIA procedure where applicable.

6 Any existing environmental problems which are relevant to the SOPT including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to the GDO 236/2000 on the regime of the natural protected area, conservation of natural habitats, of wild flora and fauna, approved by Law 462/2001

6.1 **Key environmental problems related to SOPT**

This chapter points out to the key environmental problems in the transport sector which have been identified from SOPT and environmental analysis conducted for the assessment found in the Chapter 5

Table 3. Key environmental problems related to the SOPT

Env. issues	Key env. problems related to the SOPT
Air	Significant impact on air quality and human health due to emissions from traffic congestion and old vehicles, damaged and incomplete infrastructure as well as low quality fuels
Water	Water pollution from roads and rail due to impact of vehicles with damaged surfaces, old vehicles and indirectly from the run off water; Illegal and uncontrolled discharges to water from waterborne transport; Negative effects on waste ecosystems due to hydrotechnical works (dragging, drainage, etc.).
Soil	Direct soil pollution due to precipitation of discharges from emissions from transport and run off from the surfaces with effects on the environment and human health
Climate change	Growing GHG emission from transport means, elevated emissions cased by old vehicles, traffic congestion and low quality infrastructure

Env. issues	Key env. problems related to the SOPT
Biodiversity	Problems related to habitat fragmentation and deforestation caused by transport infrastructure development Potential problem related to Natura 2000 network development (to be addressed in more details in the section below)
Human health	Significant environmental and human health problems related air pollution due to transport emissions; Environmental and human health problems cased by noise and vibration from transport means (vehicles) due to infrastructure deficiencies and old transport means; Water pollution from river and sea traffic with toxic substances (continuous and accidental pollution) Traffic safety issues due to traffic intensification. Soil pollution with hydrocarburants and heavy metals, continuous or accidental pollution
Environmental risk management	Environmental and human health risk due to transport accidents (release of pollution) due to overcrowded transport network, deteriorated traffic conditions and traffic congestion (road, rail, water born transport)
Resource efficiency and conservation/ sustainable resource management	Significant share of old vehicles which have no converters and do not comply with up-to-date emission and efficiency standards (obsolete fleet) Increasing problem of outdated vehicles and rail road infrastructure as well as vehicle waste oils and tires
Landscape and cultural heritage	Problem due to landscape fragmentation due to new traffic corridors badly planed without SEA enabling the assessment of cumulative effects and impacts on natural and cultural heritage
Energy efficiency and renewable energy sources	Increase in total usage of energy by transport (road mainly) and reduction of usage of rail and water due to aging infrastructure and fleet Significant lagging behind with quality fuel availability as well as availability of bio-fuel for transport means
Awareness raising on environmental issues	Lack of awareness about significance of PT and railroad development
Sustainable transport	Significant investments going into development of road transport infrastructure development where as support and facilitation of PT is lagging behind and has no development strategy on the national scale

6.2 The network of protected areas (future Natura 2000 sites)

The terrestrial protected areas national system represents about 8% of the Romania's territory with 26 old large biosphere reserves, national parks and natural parks and 8 new large protected areas established in 2004 and 2005. Outside the areas mentioned above there are 935 scientific reserve, nature monuments and natural reserves with a total area approximated at 18,000 ha.

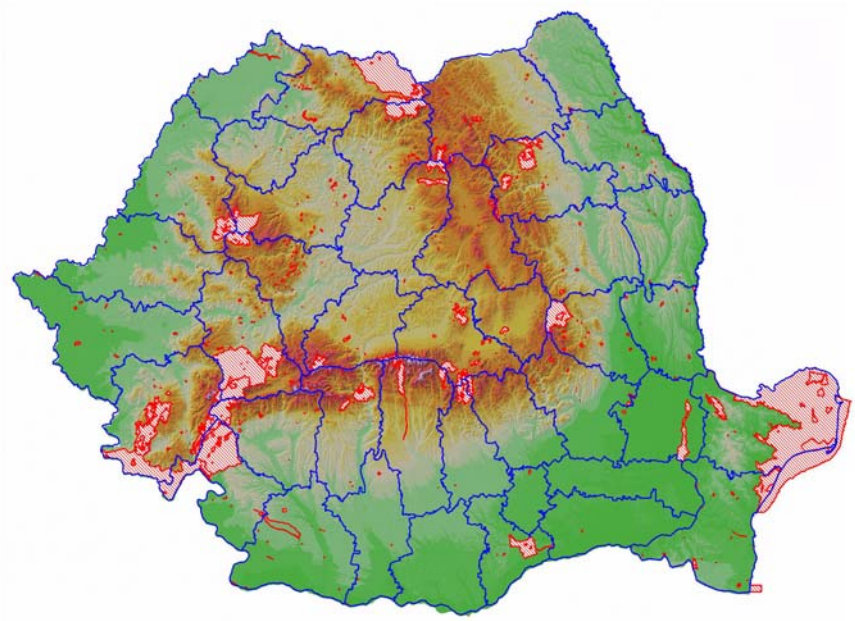

Figure 1: Network of protected areas in Romania

The national forest fund covers 6,368,000 ha, of which 6,227,000 ha are forests and 141,000 ha represent afforested, cultivated or for forestry administration areas or other.

In order to meet the requirements of the EU Birds and Habitats Directives the Natura 2000 network is under construction in Romania.

Habitats, fauna and flora species from Birds and Habitats Directives were identified on the territory of Romania and presented in the annex of the Law 462/2001 (updated with Law no. 345/19.07.2006) on the status of natural protected area, natural habitats and species of wild flora and fauna conservation.

MoEWM has developed a national strategy for harmonization of EU requirements in terms of natural conservation and developed action plans for the implementation of the national strategy. Furthermore, implementation plans have been elaborated with time schedules for the implementation of the EU Birds and Habitats Directives.

Identified and selected natural protected areas and other landscape components must be included into the European Network of protected areas Natura

2000. At this moment 28 Special Protected Areas have been identified that are in compliance with the requirements of Birds Directive to become a part of the Natura 2000 network, which constitutes only the beginning for the work (approved between 2004-2005).

The Natura 2000 network will cover all five bio-geographical regions (Alpine, Continental, Pannonic, Steppic, Pontic), therefore there is a potential interference of transport network development activities since all regions of Romania are important from Natura 2000 point of view.

The obligation to carry environmental assessments for all plans and projects with potential impact on environment was set up. EIA process has to assess potential impacts on Natura 2000 sites and since the network establishment is on a way, it will constitute a challenge to the transport and other projects planned within the SOP. ”A Methodological Guide for the biodiversity considerations insertion within the environmental impact assessment procedures” was elaborated as relates to the impact assessment on Natura 2000 network and based on the “Methodological Guide” elaborated by the European Commission. It should be a helpful tool in the assessment of process.

To enable smooth assessment and problem (if any) solving, impact assessment procedures have to have a strong consultation component with all key stakeholders of the process. The key stakeholders of Natura 2000 network are the authorities involved with the implementation and future management of Natura 2000, which are the Ministry of Environment and Water Management, other competent authorities involved in nature conservation (NEPA, REPAs, LEPAs and the National and Natural Parks Administrations including Romsilva) the Romanian Academy (which is responsible for the scientific approval of regulatory documents in relation to protected areas) and NGOs that work in the area of nature conservation.

Since the process of establishing Natura 2000 network as well as establishing the structures and framework for sound and effective management of the system is under early stages of development, it is strongly recommended not only to have consultations, but also to involve key stakeholders in the project assessment, i.e. invite environmental authorities, researchers and NGOs to provide inputs into the mitigation of possible negative impacts of the projects (please, see more under Chapter 9 and 10 under management and monitoring arrangements).

The environmental protection objectives, established at international, Community or national level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation

6.3 The list of environmental objectives with explanation of its preparation

For the purpose of the assessment of environmental effects on the SOPT, a number of relevant environmental issues and objectives have been selected and formulated based on the national and international (European and Global) objectives and obligations that Romania has in the field of the Environment.

For the purpose of proposing a list of relevant environmental objectives, a reference list of key national and international environmental documents was collected and key strategic documents were consulted, the list of which is presented in the Annex 3.

Proposed set of relevant environmental issues and objectives for the purpose of assessment of the SOPT have been presented to the working group established for the purpose of SEA by the MA (Ministry of Transport, Construction and Tourism) during the scoping meeting which took place in September 2006. Comments received during and after the meeting were taken into account by the SEA team of experts. The table bellow presents the proposed final framework of the environmental issues and objectives for the purpose of SEA of SOPT.

Table 4. Relevant environmental objectives for the strategic environmental assessment of the SOPT

Env. issues	Relevant Environmental Objectives
Air	Maintain and improve the quality of ambient air within the limits set by the legal norms
	Minimize the transport impacts on the air quality at rural and urban level
Water	Limit water pollution from point and diffuse pollution sources
Soil	Limit point and diffused pollution of soil
Climate change	Decrease GHG emissions from transport
Biodiversity	Protect and improve the conditions and functions of terrestrial and aquatic eco-systems against anthropogenic degradation, habitat fragmentation and deforestation
	Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites
Human health	Facilitate improvement of human health by implementing measures aimed at pollution prevention
	Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration

Env. issues	Relevant Environmental Objectives
	Increase population protection from risks associated with traffic accidents
Environmental risk management	Increase population protection from risk associated with natural disasters and industrial accidents caused by transportation
Resource efficiency and conservation/ sustainable resource management	Limit use of different natural resources used in transport sector
	Reduce waste generation, increase waste recovery, and facilitate recycling of all waste
Landscape and cultural heritage	Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors
	Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including aquatic and terrestrial ecosystems) and cultural heritage in order to achieve the sustainable development of the region
Energy efficiency and renewable energy sources	Improve energy efficiency and use of energy resources
	Improve the quality of fuels used by the transport vehicles in order to reduce the consumption of lead gasoline and sulphur diesel and support the use of eco-fuels (e.g. biofuel)
Awareness raising on environmental issues	Improve environmentally-responsible behaviour of the public by promoting usage of public transport and other env. friendly means of transport (e.g. cycling, walking)
Sustainable transport	Develop environmentally friendly transport (especially public transport system and multi modal transport)
	Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)
	Reduce the intensity of the car traffic

6.4 **The evaluation of general and specific objectives and priority axes**

The objective of the SOPT is to **promote a transport system in Romania, which will facilitate safe, fast and efficient movement of persons and goods with appropriate level of service at European standards, nationally, Europe-wide and between and within Romanian regions.**

Based on the analysis of the environmental status in Romania, focus on links between transport and environment, and based on the assessment of specific

objectives, the SEA team proposes the following reformulation (alternative) of proposed global objective: is to promote a **sustainable** transport system in Romania, which will facilitate safe, fast and efficient movement of persons and goods with appropriate level of service at European standards, nationally, Europe-wide and between and within Romanian regions.

The assessment of specific objectives was focused on the likely environmental effects of the SOPT specific objectives to the relevant environmental objectives. The evaluation was done in the form of comments, explaining what effects (both positive and negative effects) might be caused by the implementation of the SOPs´ specific objective and resulted in a possible reformulation of specific objectives and priority axes.

Table 5. Proposed alternatives of the specific objectives of the SOPT

Original specific objectives	Proposed alternatives of specific objectives
Promote international and transit movements of people and goods in Romania by providing effective connections of the port of Constanta, as well as Greece, Bulgaria and Turkey, with the EU through the modernization and development of the relevant TEN-T priority axes	Promote international and transit movements of people and goods in Romania by providing effective connections of the port of Constanta, as well as **transit transport from EU to the south** through the modernization and development of the relevant TEN-T priority axes **applying necessary environmental measures**
Promote effective movement of persons and goods among Romanian regions and their transfer from the hinterland to priority axes by modernizing and developing national and TEN-T networks	Promote effective movement of persons and goods among Romanian regions and their transfer from the hinterland to priority axes by modernizing and developing national and TEN-T networks **according to sustainable development principles**
Promote the development of a balanced transport system of modes, based on the respective competitive advantage of each, by encouraging the development of rail, waterborne and inter modal transport	n/a
Promote sustainable development especially by minimizing adverse effects of transport on the environment and improving safety	Support sustainable transport development by minimizing adverse effects of transport on the environment and **improving traffic safety and human health**

Suggestions for modifications of Priority Axes (PA) were as follows (text in red presents alternatives for the option of the PAs provided in the SOPT):

PA 1: Modernization and development of TEN-T priority axes **aiming at sustainable transport system integrated with EU transport networks**
PA 2: Modernization and development of the national transport infrastructure outside the TEN-T priority axes **aiming at sustainable national transport system**
PA 3 Upgrade the railway passenger rolling stock on the national and TEN-T railway networks
PA 4 **Modernization of** transport sector **aiming at higher degree of environmental protection, human health and passenger safety**

Full assessment is available in the Annex 4 to the report.

SEA came to the conclusion that due to implementation of the objectives and priority axes of the SOPT there may be significant environmental effects on the environment. The most likely negative effects are from implementation of priority axes 1 and 2. Most likely neutral and positive effects are to be expected from carrying out measures planned under PA 3 and 4.

It is important to apply mitigation measures recommended by the SEA and as prescribed by national Romanian legislation. Such measures should be developed within EIA carried out for new and upgrading go old transport infrastructure sections, implementation of river and marine port development, environmental infrastructure development as well as other projects identified via screening procedure for EIA.

Since the exact locations of the projects are not known, special attention should be given to overlap and interaction of the developments with Natura 2000 network which is to be approved at the end of 2006.

Key mitigation measures proposed for SOPT:

- all projects should have EIA carried out with special focus given on alternatives to reduce impact on Natura 2000 and landscape fragmentation;
- priority support should be given to the investments that promote BATs;
- priority support should be given to the investments that promote minimization of energy consumption, increase energy efficiency and energy demand (e.g. oil and gas) and promote reuse of the natural resources.

For other mitigation measures please see Chapters 8.1 and 9.

7 The likely significant effects[1] on the environment

7.1 Evaluation of areas of intervention and suggestion of specific measures to minimise, reduce or offset their likely significant environmental effects

After assessment focusing on whether the SOPT can have substantial effects on the environment (see Chapter 7 and Annex 4), further assessment was carried out on the proposed key areas of intervention in relation to the relevant environmental objectives, in other words, whether and how the key areas of support contribute (or do not contribute) to fulfilment of the relevant environmental objectives.

The evaluation was carried out in two phases.

In the first phase, the single areas of support were evaluated according to the following scale:

+ 2: substantial positive effect of the area of support on the given reference goal

+ 1: positive effect of the area of support on the given reference goal

0: no impact

- 1: negative impact of the area of support on the given reference goal

- 2: substantial negative impact of the area of support on the given reference goal

?: the impact cannot be identified

Comments on an important part of the evaluation, especially if a negative impact was identified were specified.

The evaluation was carried out independently by the SEA team experts (altogether 5 assessments). The outputs from the assessments were summarised in tables (MS Excel) and examined statistically (median and the standard deviation were calculated). In case standard deviation was more than 1 (substantial evaluation differences among the team members) the evaluation was discussed within the team and modified accordingly.

The assessment aimed at identification of potentially important negative conflicts of the SOPT areas of support with the reference goals in environmental protection. Those negative conflicts were considered important for which the median was – 1 and lower. For those conflicts the mitigation measures were further proposed in order to minimize the adverse environmental effects of the SOPT implementation.

[1] secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors

The following tables present the joint evaluation of the SEA team, as it has been agreed during the discussion on the results from independent evaluation.

Table 6. Assessment of the Key Areas of Intervention of the SOPT

Priority axis 1 - *"Modernization and development of TEN-T priority axes"*

Key area of intervention 1.1: Modernization and development of road infrastructure along the TEN-T priority axis 7		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Maintain and improve the quality of ambient air within the limits set by the legal norms	-2	The construction of new motorways will increase the car traffic along the TEN-T priority axis 7, so the air pollution levels will increase in these areas. Road construction process itself will have an important negative impact as well.
Minimize the transport impacts on the air quality at rural and urban level	1	The motorways network is developed to bypass urban and rural areas, so it is anticipated that the negative impacts of car traffic on the air quality of settlements will be minimized. The effect will be the intensification of car traffic and increased air pollution, therefore some negative general impact is expected.
Limit water pollution from point and diffuse pollution sources	-0.5	Modernization of roads will reduce relative water pollution due to transport by enabling better and more efficient traffic movement, if water collection or removal systems are in place as well.
Limit point and diffused pollution of soil	0	Relative decrease of emissions is expected given an improved transport systems. There will be relative reduction in soil pollution, but new roads and sections will expose new areas of soil to diffused pollution. Some negative impact is expected.
Decrease GHG emissions from transport	-1	The development of new and modernized road corridors will always increase the car traffic and fuel consumption therefore emissions, including GHGs. However, modernized roads can contribute to the reduction of fuel consumption, so the emissions will be lower.
Protect and improve the conditions and functions of terrestrial and aquatic eco-systems against anthropogenic degradation, habitat fragmentation and deforestation	-1	The activities within this key area are focused on the construction of new motorways and bypasses for cities located on, or adjacent to TEN-T priority axis 7. New and modernized roads could affect badly the eco-systems and cause habitats fragmentation, not only during the construction period but also after, especially if new sections of roads are built. The development of road infrastructure will cause significant anthropogenic degradation, habitat fragmentation and deforestation therefore EIA procedures should be performed.

Key area of intervention 1.1: Modernization and development of road infrastructure along the TEN-T priority axis 7		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites	-1	The development of road TEN-T infrastructure will cause further habitat and landscape fragmentation. It's necessary to pay attention to mitigation measures which should be implemented in parallel with the construction of transport infrastructure aimed at reducing landscape fragmentation, protected areas and Natura 2000 sites. It is recommended to fully observe the EIA procedure to enable the best solutions for sections intersecting protected areas and Natura 2000 sites.
Facilitate improvement of human health by implementing measures aimed at pollution prevention	1	Contribution to air and noise pollution is expected but at the same time relative decrease of the noise and air pollution per km travelled, due to improved infrastructure and shortened road. The development of road TEN-T will lead to the improvement of air quality in urban areas by shifting car transport out of cities and therefore enabling better environment in urban locations.
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration	1	Contribution to air and noise pollution is expected from road construction, but if bypasses are developed for road transport they will reduce and shift noise and vibration from cities to rural areas.
Increase population protection from risks associated with traffic accidents	1	The development of road TEN-T infrastructure will lead to the improvement of transport conditions, shortening the travel time, reducing number of settlement bypassed by the road and diminish the number of accidents. Enabling higher speed and more cars in traffic will increase the risk of accidents.
Increase population protection from risk associated with natural disasters and industrial accidents caused by transportation	1	The development of road TEN-T infrastructure will lead to the improvement of conditions for dangerous goods transport and diminish the number of accidents. The impact on reduction of risks associated with natural disasters is minimum or zero.
Limit use of different natural resources used in transport sector	-1	Development of road infrastructure will increase the use of natural resources not only during the construction period but also after, due to increased fuel consumption, but it will increase fuel efficiency per km and tone of goods transported. It will be very difficult to evaluate the economy in fuel consumption due to better driving conditions, versus additional fuel consumption due to the rise of car traffic in these new and modernized roads. Experts consider that fuel economy could be greater than additional fuel consumption, because, on short and medium terms, car traffic could raise but fuel consumption economy will be higher.

Key area of intervention 1.1: Modernization and development of road infrastructure along the TEN-T priority axis 7		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste	0	Enabling construction waste's recycling during road construction can have positive effect. Better roads will lead to the use of more and new cars and, subsequently to increased waste production from old cars. Lack of infrastructure for cars' recycling will have indirect negative impact.
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors	-2	Development of road TEN-T infrastructure will cause further habitat and landscape fragmentation. It's necessary to pay attention to mitigation measures which should be implemented in parallel with the construction of transport infrastructure. Those measures can be planned only if proper EIAs are conducted.
Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including terrestrial and aquatic ecosystems) and cultural heritage in order to achieve the sustainable development of the region	0	No or indirect link which can not be assessed
Improve energy efficiency and use of energy resources	1	Better road and railway infrastructure will enable better energy efficiency (better usage of petrol and oil per km travelled and tone of freight transported) therefore positive effect is expected.
Facilitate energy generation from renewable resources	0	No or indirect link which can not be assessed
Improve the quality of fuels used by transport vehicles in order to reduce the consumption of lead gasoline and sulphur diesel and support the use of eco-fuels (e.g. biofuel)	0	Better transport infrastructure will lead to more fuel consumption and therefore to more demand for fuel. Indirectly it will lead to the promotion of eco-fuel development, but the effect will be small and hard to estimate and other measures are needed in parallel.
Develop environmentally friendly transport (especially public transport system and multi modal transport)	1	The improved and modernized roads will increase the car traffic, so the road transport demand will be increased. If proper connections are provided with cities and with the regional transport, the effect will be increased.
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)	1	The construction of road TEN-T infrastructure will cause the intensification of car traffic (and so increase the external costs) in specific areas (not including urban and rural areas). If development will be linked with new payment schemes for travelling on modern roads, there will be some internalization of the environmental effects. Reduction of traffic congestion and air pollution reduction due to bypasses is expected and therefore positive effect is anticipated.

Key area of intervention 1.1: Modernization and development of road infrastructure along the TEN-T priority axis 7		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Reduce the intensity of the car traffic	0	The construction of road TEN-T infrastructure will cause the intensification of car traffic (and so increase the external costs). The potential contribution to the reduction of trucks circulating on the main roads would have a positive effect.
Proposed reformulation of key area of intervention (if any): Modernization and development of **sustainable** road infrastructure along the TEN-T priority axis 7		
SEA recommendations (e.g. conditions for implementation, selection criteria etc.): The development of road infrastructure will bring significant anthropogenic degradation, habitat fragmentation and deforestation therefore it is proposed to have not only EIAs conducted for sections of roads but, in order to reduce the negative impact, to have SEAs conducted for the entire length of the road to eliminate "salami slicing" effect. Attention should be paid to habitat fragmentation, recycling of construction materials in road construction and to measures aimed at reducing vibration and noise.		

Key area of intervention 1.2: Modernization and development of railway infrastructure along the TEN-T priority axis 22		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Maintain and improve the quality of ambient air within the limits set by the legal norms	2	The development and modernization of rail transport infrastructure on the TEN-T priority axis 22, will minimize the air pollution levels along this corridor. Improvements in rail infrastructure will attract more passengers and the air pollution per passenger will reduce. Development of the railway on the TEN-T-& axis will reduce relative air pollution enabling more travel and better freight transport by rails, therefore positive effect is anticipated.
Minimize the transport impacts on the air quality at rural and urban level	2	The development and modernization of railway on the TEN-T priority axis 22, will minimize the air pollution levels along this corridor and has a potential to reduce the car traffic.
Limit water pollution from point and diffuse pollution sources	1	The effect of the development will be the intensification of rail traffic, construction of new branches of railroads and increased runaway water pollution. Measures for the reduction of water pollution and erosion must be elaborated to reduce the negative impact.
Limit point and diffused pollution of soil	0.5	The effect of the development will be the intensification of rail traffic, construction of new branches of railroad and increased soil pollution. Measures for the reduction of soil pollution and erosion have to be elaborated to reduce the negative impact.
Decrease GHG emissions from transport	2	Improvement of rail infrastructure will attract more passengers and the GHG per passenger will reduce. Positive effect is expected.

Key area of intervention 1.2: Modernization and development of railway infrastructure along the TEN-T priority axis 22		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Protect and improve the conditions and functions of terrestrial and aquatic eco-systems against anthropogenic degradation, habitat fragmentation and deforestation	-1	Construction of new rail infrastructure will impact also eco-systems, habitats and deforestation, especially if new branches are built. The activities within this ax aim at making the railway infrastructure inter-operable along the TEN-T priority axis 22, as well as at improving the quality of rail services by modernizing the railway infrastructure and raising the maximum operational speed to 160 km/h for passengers trains and 120 km/h for freight trains. So, it could badly affect the eco-systems and fragment the habitats that will be crossed by these infrastructures.
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites	-1	The development and modernization of the transport infrastructure, including railways, will harm the natural habitats in protected areas if the chosen corridors will cross these areas. In parallel, the impact of railways is less dangerous, environmentally speaking, than other infrastructure modes' (e.g. roads) because those ones support non environmentally friendly transport modes. It is recommended to carry out EIAs to reduce the negative impact.
Facilitate improvement of human health by implementing measures aimed at pollution prevention	1	Reduced pollution due to increased speed of trains and from enabled faster and increased freight transportation, as well as from the potential shift of freight from roads to rails will contribute to the improvement of human health.
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration	1	Improved railways will have some additional impact due to increased traffic on the rails and speed of travel. Measures have to be planned to protect inhabitants from increased exposure to noise and vibration by restricting speed and travel frequency at night.
Increase population protection from risks associated with traffic accidents	1	The development and modernization of railway infrastructure by improved infrastructure on the TEN-T priority axis 22, will strongly minimize the number of traffic accidents.
Increase population protection from risk associated with natural disasters and industrial accidents caused by transportation	1	Risk associated with industrial accidents and transportation of dangerous goods on the railroads will be reduced due to modernized and strengthened infrastructure. The development and modernization of railway infrastructure on the TEN-T priority axis 22, will strongly minimize the number of accidents, including the dangerous goods transported but will have no effect on the natural disasters.
Limit use of different natural resources used in transport sector	1	There will be some increase in the use of natural resources due to traffic intensification, but the efficiency will be increased.

Key area of intervention 1.2: Modernization and development of railway infrastructure along the TEN-T priority axis 22		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste	0	The intensification of the use of rail infrastructure will lead to some increase in waste generation due to the ware out of the old equipment. Mitigation measures must be proposed in order to reduce the potential indirect and direct (due to removal of old rails) impact.
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors	-1	Construction of new railway infrastructure will impact the natural and cultural landscape, especially through extension works. The activities within this axis aim at making the railway infrastructure *interoperable* along the TEN-T priority axis 22 and also at improving the quality of rail service by modernizing the railway infrastructure and raising the maximum operational speed to 160 km/h for passengers trains and 120 km/h for freight trains. So, it could affect (but not so badly) the eco-systems and fragment the habitats crossed by these infrastructures. It's necessary to pay attention to mitigation measures which should be implemented in parallel with the construction of transport infrastructure, measures that can be elaborated with the help of SEA and EIA procedures.
Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including terrestrial and aquatic ecosystems) and cultural heritage in order to achieve the sustainable development of the region	0	No direct link or some indirect secondary link
Improve energy efficiency and use of energy resources	1	Promotion of railway transport will contribute to the efficient use of fuel consumption. Development has a potential significant positive effect.
Facilitate energy generation from renewable resources	0	No direct link
Improve the quality of fuels used by the transport vehicles in order to reduce the consumption of lead gasoline and sulphur diesel and support the use of eco-fuels (e.g. biofuel)	0	No direct link. There will be some indirect secondary effect given the need for more fuel and the development of bio-fuel for rail transport.
Develop environmentally friendly transport (especially public transport system and multi modal transport)	1	Railway infrastructure modernization is directly linked with the development of environmental friendly transport. The development and modernization of railway transport infrastructure on the TEN-T priority axis 22 will encourage the use of the railways and will have significant positive effect.

Key area of intervention 1.2: Modernization and development of railway infrastructure along the TEN-T priority axis 22		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)	2	The development and modernization of railway transport infrastructure on the TEN-T priority axis 22, will encourage the development of environmentally-friendly transport which will lead to important reductions of the external costs, especially regarding transport congestion and pollution.
Reduce the intensity of the car traffic	1	Railways' improvement will probably lead to the reduction of the car traffic intensity. The development and modernization of railway transport infrastructure on the TEN-T priority axis 22, will encourage the development of environmentally-friendly transport as an alternative to the road transport.
Proposed reformulation of key area of intervention (if any): Modernization and development of **sustainable** railway infrastructure along the TEN-T priority axis 22		
SEA recommendations (e.g. conditions for implementation, selection criteria etc.): Attention must be paid to habitats fragmentation for new infrastructure and noise near settlements. SEA is recommended for the entire section of road, to eliminate 'salami slicing' effect and to ensure the best solutions against habitat fragmentation, enable better preservation of natural habitats and optimal solutions for intermodal access of the railroads.		

Key area of intervention 1.3: Modernization and development of water transport infrastructure along the TEN-T priority axis 18		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Maintain and improve the quality of ambient air within the limits set by the legal norms	0	The effect of development will be the intensification of traffic and increased air pollution. The development and modernization of water transport infrastructure will improve the quality of ambient air because it will support the reduction of car traffic by switching the road transport demand towards water transport. to reduce the effect it is recommended to ensure the use of the high quality fuel.
Minimize the transport impacts on the air quality at rural and urban level	0	The effect of development will be the intensification of traffic and increased air pollution. The development and modernization of water transport infrastructure will improve the quality of ambient air because it will support the reduction of car traffic by switching the road transport demand towards water transport. In parallel, air quality of the urban areas, with great harbours, will be negatively affected by the intensification of water transport, but this situation is true only in very few locations (e.g. Giurgiu or Braila harbours). Mitigation measures have to be proposed via EIA procedures

Key area of intervention 1.3: Modernization and development of water transport infrastructure along the TEN-T priority axis 18		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Limit water pollution from point and diffuse pollution sources	-1	The intensification of traffic on water will cause the increase of water pollution. The development and modernization of water transport infrastructure will diminish the water pollution by adopting the necessary measures.
Limit point and diffused pollution of soil	0	Modernization and improvement of water infrastructure will reduce soil pollution. Some positive effect can be expected although water and air pollution intensification due to increased traffic will have some negative impact.
Decrease GHG emissions from transport	0	The effect of development will be the intensification of traffic and increased air pollution and GHG emissions. Increased efficiency of travels will have a positive effect.
Protect and improve the conditions and functions of terrestrial and aquatic eco-systems against anthropogenic degradation, habitat fragmentation and deforestation	-1	The development of water transport infrastructure will have a significant impact on the functions of aquatic ecosystems of the Danube and its delta. The development and modernization of water transport infrastructure will affect the eco-systems by deepening the riverbeds and with the intensification of traffic and regularization of river flow.
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites	-1	The development of water transport infrastructure will have significant impact, affecting the functions of aquatic ecosystems of the Danube linked with the protected areas and Natura 2000 sites. The development and modernization of transport infrastructure, including water transport, will harm the natural habitats in protected areas, especially in Danube Delta. Minimization of impacts can be achieved if measures are proposed within the EIAs carried out for the projects.
Facilitate improvement of human health by implementing measures aimed at pollution prevention	1	The modernization of the water transport infrastructure will improve the human health because it will support the reduction of car traffic intensity. By switching the road transport demand towards water transport there will be some reduction in air pollution. In parallel air quality, noise and vibration of the urban areas, with great harbours, will be negatively affected by the water transport activities, but this situation is true only in a some locations (e.g. Giurgiu or Braila harbours). But, generally speaking, the modernization effects will be positive.
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration	0	Air quality, noise and vibration, of the urban areas with great harbours, will be negatively affected by the water transport activities. Noise along the navigation routes will be increased due to the intensification of travels.

Key area of intervention 1.3: Modernization and development of water transport infrastructure along the TEN-T priority axis 18		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Increase population protection from risks associated with traffic accidents	0.5	Modern waterways will reduce the risk of industrial accidents (better conditions for transportation of dangerous good on water) as well as risks associated with general traffic accidents on water, although intensification of water traffic will relatively increase the risk.
Increase population protection from risk associated with natural disasters and industrial accidents caused by transportation	1	Rivers regularization will reduce the risk associated with industrial and water traffic accidents, but the impact on natural disasters can be indirect or secondary. Some protection increase can be expected if river flood barriers are being supported within the KAI.
Limit use of different natural resources used in transport sector	0	Intensification of water traffic will increase the use of natural resources (oil and petrol) therefore some negative impact is expected , but the efficiency of use will be increased.
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste	0	There will be some waste generated due to activities, therefore measures to ensure the recycling and reuse of water transport waste should be developed.
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors	-1	The development of water transport infrastructure will have a significant impact affecting the functions of aquatic and marine eco-systems, especially in Danube Delta. Modernization and renovation works in some harbours will have some positive effect on the cultural landscape.
Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including terrestrial and aquatic ecosystems) and cultural heritage in order to achieve the sustainable development of the region	0	This OP addresses TEN-T Priority axis 18, which includes the River Danube along its full length, the Black Sea canal to the port of Constanta as well as the Midia - Poarta Alba canal. It aims at developing the inland water transport infrastructure in Romania for increased utilization, therefore there is no connection with the Romanian coastal zone.
Improve energy efficiency and use of energy resources	1	There will be improvements of energy efficiency for the water transport sector given the infrastructure renovation and rehabilitation.
Facilitate energy generation from renewable resources	0	No direct link. Due to the national commitment to achieve 2% increase in biofuel consumption, there is a potential to encourage beneficiaries to utilize this kind of fuel and give priorities to such projects.
Improve the quality of fuels used by the transport vehicles in order to reduce the consumption of lead gasoline and sulphur diesel and support the use of eco-fuels (e.g. biofuel)	1	No direct link

Key area of intervention 1.3: Modernization and development of water transport infrastructure along the TEN-T priority axis 18		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Develop environmentally friendly transport (especially public transport system and multi modal transport)	1	The development and modernization of water transport infrastructure directly supports an environmentally friendlier infrastructure given its potential to reduce private car traffic, which is very energy intensive and environmentally harmful. Switching from the road transport to water transports is considered environmentally friendly and therefore there is a significant potential positive effect.
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)	1	The development and modernization of water transport infrastructure will diminish the external costs of transport because it will support the reduction of car traffic by switching the road transport demand towards water transport, reduce congestion in the urban and regional roads and will reduce the accidents.
Reduce the intensity of the car traffic	1	The development and modernization of water transport infrastructure will support the reduction of car traffic by switching the road transport demand to water transport.
Proposed reformulation of key area of intervention (if any):		
SEA recommendations (e.g. conditions for implementation, selection criteria etc.): Se recomanda ca lucrarile structurale ce vizeaza modificarea albiei rurilor sa se realizeze prin utilizarea de materiale si tehnologii ecologice. EIAs have to be carried out to ensure minimization of the impacts on natural aquatic and delta habitats as well in order to propose measures supporting the rehabilitation and preservation of cultural and natural landscape and energy conservation. Pe de alta parte propunem ca atunci cand un proiect impune modificari morfologice ireversibile, cu impact de mediu sa fie impuse ***masuri ecologice compensatorii*** (renaturarea altor zone, inundarea altor suprafete etc.).		

Priority axis 2 - "Modernization and development of the national transport infrastructure outside the TEN-T priority axes"

Key area of intervention 2.1: Modernization and development of national road infrastructure		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Maintain and improve the quality of ambient air within the limits set by the legal norms	-1	Each modernization and development of road infrastructure provides better conditions for traffic, so it would be very possible to obtain the reverse effect desired, lower quality of ambient air. At least during the road construction period there will be an important negative impact. The development of new national roads has as consequences the intensification of car traffic and increased air pollution, but new sections of roads have a potential to remove the traffic from congested towns and settlements therefore there will be some positive effect too.
Minimize the transport impacts on the air quality at rural and urban level	-1	Better road infrastructure stimulates the demand for cars and traffic. Without adopting any complementary measures, the air quality, especially in the urban and rural areas will be negatively affected, with hot spots in congested intersections. During the operation period there will be a slightly positive effect due to car traffic optimization. These operations aim at the modernization and development of national road infrastructure sections that are located outside the TEN-T priority axes. This infrastructure will mainly cross through cities so the negative impact will be major.
Limit water pollution from point and diffuse pollution sources	0	The development of new road sections will reduce the water pollution given the better quality road surface, but it will increase the overall water pollution due to intensification of traffic along the new sections of roads.
Limit point and diffused pollution of soil	0	The development of new national roads has as consequences the intensification of car traffic and increased soil pollution and erosion. If mitigation measures are implemented soil erosion will be partially mitigated.
Decrease GHG emissions from transport	-2	Development and modernization of new sections of roads will increase the car traffic and fuel consumption and also increase the GHG emissions. The effect of the development will be the intensification of traffic and it will increase air pollution and GHG emissions.
Protect and improve the conditions and functions of terrestrial and aquatic eco-systems against anthropogenic degradation, habitat fragmentation and deforestation	-1	There will be a major impact on ecosystems and habitat fragmentation not only during the construction period but also after, due to the development of new sections of national roads (especially motorways). It's necessary to pay attention to mitigation measures which should be implemented in parallel with the construction of road infrastructure.

Key area of intervention 2.1: Modernization and development of national road infrastructure		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites	-1	The development of new national roads will have significant impact because it will affect functions of terrestrial and aquatic eco-systems in protected areas and Natura 2000 sites (especially motorways). It's necessary to pay attention to mitigation measures which should be implemented in parallel with the construction of road infrastructure.
Facilitate improvement of human health by implementing measures aimed at pollution prevention	-1	Constructions (short term) and intensification of traffic (long term) will contribute to air and noise pollution, especially at the periphery, and human health will be negatively affected. Overall negative impact is expected, but improvements of infrastructure will lead to the alleviation of congestion in settlements and therefore to improvements of health conditions there. During construction phase mitigation measures have to be proposed to minimize negative effects.
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration	-1	Contribution to noise and vibration will happen during the construction and modernization, for a short period, but some decrease in noise and vibration is expected due to modern roads especially if settlement areas will be bypassed. Mitigations measures have to be planned if traffic intensification is to take place in the heavily populated areas or in the road branches laying near by houses and settlements.
Increase population protection from risks associated with traffic accidents	1	Increased traffic in the area will lead to higher number of accidents for pedestrians, but the number of car accidents will decrease.
Increase population protection from risk associated with natural disasters and industrial accidents caused by transportation	1	Indirect secondary effect can take place if the general road infrastructure is improved.
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste	-0.5	There will be some secondary negative impact on waste generation due to increased traffic, which can be mitigated by measures such as the recycling of old vehicles introduced or the use of e.g. rubber and plastic waste in road construction or accident risk management. Limited recycling of construction waste during the road construction period is possible.
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors	-1	The modernization of national road infrastructure will cause damages on natural and cultural landscapes, but lower than the ones caused by the construction of new corridors (especially motorways). It's necessary to pay attention to mitigation measures which should be implemented in parallel with the construction of road infrastructure. SEA and EIA should be carried out to mitigate the effects on landscape.

Key area of intervention 2.1: Modernization and development of national road infrastructure		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including aquatic and terrestrial ecosystems) and cultural heritage in order to achieve the sustainable development of the region	-1	The modernization of national road infrastructure, along the Romanian coastal zone of the Black Sea, will cause damages on natural and cultural heritage. It's necessary to pay attention to mitigation measures which should be implemented in parallel with the construction of road infrastructure by carrying out SEAs and EIAs according to the size of the projects.
Improve energy efficiency and use of energy resources	-0.5	Better roads will improve energy efficiency (travel time and use of petrol), but the use of natural resources will increase, not only during the construction period but also after due to the increased fuel consumption.
Facilitate energy generation from renewable resources	0	No direct link
Improve the quality of fuels used by the transport vehicles in order to reduce the consumption of lead gasoline and sulphur diesel and support the use of eco-fuels (e.g. biofuel)	1	No direct link
Develop environmentally friendly transport (especially public transport system and multi modal transport)	1	If measures are enabled to such as developing cycling paths and multi modal transport access from national road system, there can be a link and a positive effect towards environmentally friendly transport development. Projects that have such components have to get a priority
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)	-1	Car traffic will increase also pollution, noise and risk of accidents, increasing thus the external costs. Some reduction of congestion will result if bypasses are planed and constructed near towns and settlements, but general impact on climate change and further pollution will exist. It is obvious that modernized infrastructure will encourage the increase of car traffic, especially in settlements, so the external costs of transports (that are mostly related to car activity) will badly rise.
Reduce the intensity of the car traffic	-1	Modernizing the road infrastructure will increase car traffic on the medium and long term.
Proposed reformulation of key area of intervention (if any): Modernization and development of national road infrastructure **adopting sustainable transport principles and ensuring the highest possible environmental protection.**		
SEA recommendations (e.g. conditions for implementation, selection criteria etc.): It's necessary to pay attention to mitigation measures which should be implemented in parallel with the construction of road infrastructure (paying special attention to habitat fragmentation, recycling of construction materials, and measures for vibrations and noise mitigation) and which can be obtained from the implementation of SEA and EIA, according to the size of the projects and eliminating the "salami slicing" effect.		

Key area of intervention 2.2: Modernization and development of national railway infrastructure		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Maintain and improve the quality of ambient air within the limits set by the legal norms	2	Improvement of rail infrastructure will attract more passengers and the air pollution per passenger will reduce. The railway corridors support environmentally friendly movements of people and goods. Improving this type of infrastructure will lead to an increased quality of ambient air.
Minimize the transport impacts on the air quality at rural and urban level	1	The railway corridors support environmentally friendly movements of people and goods. Improving this type of infrastructure will lead to an increased quality of ambient air especially in urban and rural areas.
Limit water pollution from point and diffuse pollution sources	0.5	Modernization of national railroads will contribute to better water protection and only increased traffic, due to more trains, will slightly increase water pollution risks.
Limit point and diffused pollution of soil	0.5	The modernization of national railroads will contribute to better soil protection due to better infrastructure, more efficient fuel consumption, high travel speed and only increased traffic, due to more trains, will slightly increase water pollution risks.
Decrease GHG emissions from transport	2	Improvements of rail infrastructure will attract more passengers and the GHG/passenger will reduce. The railway corridors support environmentally friendly movements of people and goods. Improving this type of infrastructure will lead to an increased quality of ambient air in the specified areas, including GHG.
Protect and improve the conditions and functions of aquatic and terrestrial eco-systems against anthropogenic degradation, habitat fragmentation and deforestation	-1	If constructions of new rail infrastructure will be supported, it will negatively impact eco-systems and habitats. Rehabilitation of railway tunnels/ bridges and high embankments will have some positive effect if environmental measures are carried out, such as the establishment of animal and amphibian crossing sections.
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites	-1	The construction of new rail infrastructure will impact the eco-systems and habitats, but modernization of old sections will lead to better protection of habitats.
Facilitate improvement of human health by implementing measures aimed at pollution prevention	1	Reduced pollution, due to better infrastructure, will contribute in some way to the improvement of human health.
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration	0	Reduced pollution will contribute to improved conditions of the settlements and environment in terms of protection from noise and vibration. Intensification of traffic will raise the levels of noise and vibration. Mitigation measures should be proposed and implemented.

Key area of intervention 2.2: Modernization and development of national railway infrastructure		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Increase population protection from risks associated with traffic accidents	1	Better rail infrastructure will diminish the number of rail accidents.
Increase population protection from risk associated with natural disasters and industrial accidents caused by transportation	1	Safety for dangerous goods transportation on the rail infrastructure will be increased as well as the risk associated with industrial accidents. Better rail infrastructure will diminish the number of rail accidents in general, but it will not contribute to the national disasters mitigation.
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste	0.5	There will be some impact on waste generation due to reconstruction and renovation works. Activities for construction waste reuse and mitigation of impacts have to be developed within the projects.
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors	-1	The development (project pipeline) of the national rail infrastructure will further fragment the natural and cultural landscape if new sections of railroad are proposed. Negative impacts due to the new project pipelines must be assessed during EIAs.
Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including aquatic and terrestrial ecosystems) and cultural heritage in order to achieve the sustainable development of the region	0	New rail infrastructure development (project pipeline) will impact on natural and cultural landscape. At the same time it will enable the decrease of road transport and associated type of pollution in the coastal zone. EIA has to be carried out to mitigate potential negative effects and increase the potential positive effects of the new railway development.
Improve energy efficiency and use of energy resources	1	Energy efficiency in rail road transport will be increased due to the KAI. Promotion of rail transport will contribute to the efficiency of fuel consumption.
Facilitate energy generation from renewable resources	0	No direct link
Improve the quality of fuels used by the transport vehicles in order to reduce the consumption of lead gasoline and sulphur diesel and support the use of eco-fuels (e.g. biofuel)	1	No direct link
Develop environmentally friendly transport (especially public transport system and multi modal transport)	1	The railway corridors support environmentally friendly movements of people and goods.

Key area of intervention 2.2: Modernization and development of national railway infrastructure		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)	2	Rehabilitated sections of railroads will contribute to the decrease of air pollution and will reduce the transport external costs. The railway corridors support environmentally friendly movements of people and goods. Improving this type of infrastructure will contribute to the reduction of the transport external costs (accidents, noise impacts, damages, etc.).
Reduce the intensity of the car traffic	2	The improvement of railways will promote its use and will contribute to the reduction of the car traffic intensity. Railway corridors support environmentally friendly movements of people and goods and will offer a viable alternative to car transport.
Proposed reformulation of key area of intervention (if any):		
SEA recommendations (e.g. conditions for implementation, selection criteria etc.): Intensification of train traffic will raise the levels of noise and vibration. Mitigation measures should be proposed and implemented. The development of the new railways' project pipeline will further endanger natural and cultural landscapes. Potential negative impacts due to the new project pipelines must be assessed during SEA and special attention should be paid to habitats fragmentation by the new infrastructure and noise occurring near settlements. Positive effects of the new projects have to be assessed and contributions to the reduction of environmental pollution should be enabled through the development of better and more accessible rail infrastructure.		

Key area of intervention 2.3: Modernization and development of river and maritime ports		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Maintain and improve the quality of ambient air within the limits set by the legal norms	-1	The development and modernization of river and maritime ports will affect air quality especially during constructions but also during operation, due to the bigger number of ships. Some improvement of the port access will have a positive effect given the elimination of detours via cities (Constanta) and because of enabling connection of ports traffic directly to the rail or road networks. Air quality of the urban areas, with great harbours, will be negatively affected by the water transport activities, so improved harbours will support the raise of water transport demand and diminish the ambient quality air in the mentioned areas. Some negative impacts are expected.
Minimize the transport impacts on the air quality at rural and urban level	-1	It will impact only the urban area where ports are located. The development of marine and river ports infrastructure will have a significant negative impact on air quality. More environmentally friendly projects have to get priority during the selection process
Limit water pollution from point and diffuse pollution sources	-1	Better port infrastructure may have negative and positive effects on water quality. Access of more ships in ports will lead to water pollution in those areas (due to fuel supply and maintenance activities). The development of marine and river ports infrastructure (environmental service development such as waste and waste water management) will have positive impact due to the elimination and mitigation of water pollution. It must be ensured that waste is not dumped into waters during the development and after the activities from/in the ports. This objective will be achieved by facilitating port operations and efficiency, increasing container stacking and handling capacity, and increasing vessel safety in the port of Constanta, as well as on the other Danube ports subsequent to the recommendations of an upcoming proposed study supporting the need for such initiatives. These activities could limit the water pollution from ports sources. Modernization of repairing ships or transport/transit type of ports should also include strong waste management programs, waste landfills treatment and recovery or new waste collection systems. For example, Romania's biggest and largest port from Constanta has such big waste landfill management issues that can only be solved by implementing a new modern and ecological type of landfill.

Key area of intervention 2.3: Modernization and development of river and maritime ports		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Limit point and diffused pollution of soil	0	Increased traffic of ships will lead to water and soil pollution in ports so negative impacts are to be expected and mitigation measures, such as run off water collection and treatment systems must be proposed.
Decrease GHG emissions from transport	0	Air quality of the urban areas, with great harbours, will be negatively affected by the water transport intensification, so improved harbours will support the raise of water transport demand and raise the GHG emissions from transport in the mentioned areas. Increased GHG emissions will be expected during rehabilitation and development works.
Protect and improve the conditions and functions of terrestrial and aquatic eco-systems against anthropogenic degradation, habitat fragmentation and deforestation	-2	Significant impacts on aquatic eco-systems due to constructions and port activities (e.g. dredging, saline waters takeover, ship repairing activities, inside transport issues) will take place. Mitigation measures anticipated in EIA or SEA have to be carried out to minimize possible negative impacts or to propose modifications of the activities. Modernizing ports' infrastructure could have negative impacts on aquatic eco-systems.
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites	-2	Ports' development on the Danube river is of big importance, where the whole area is protected. The development of marine and river ports infrastructure will have significant impact because it will affect protected areas and Natura 2000 sites. EIAs have to be carried out where such developments could affect the sites mentioned above. Modernizing ports' infrastructure could have negative impact on aquatic eco-systems.
Facilitate improvement of human health by implementing measures aimed at pollution prevention	-0.5	Human health in the urban areas, with large harbours, will be negatively affected by the water transport activities, so improved harbours will support the raise of water transport demand but affect the health quality.
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration	0	Air quality, noise and vibration, of the urban areas, with large harbours, will be negatively affected by the intensification of water transport activities (long term impact) and port development (short term impact). Measures should be adopted to mitigate noise and vibration, if living areas area affected, such as introducing restrictions for the activity time.
Increase population protection from risks associated with traffic accidents	1	Modern harbours will have a positive effect on the reduction and prevention of traffic accidents in water transport.
Increase population protection from risk associated with natural disasters and industrial accidents caused by transportation	1	Modern harbours will prevent industrial accidents, but no direct link will be established with natural disasters.

Key area of intervention 2.3: Modernization and development of river and maritime ports		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste	-1	In the case of maritime ports there will be a negative impact due to increased waste generation, which must be mitigated by introducing waste management and minimization systems. Modernized ports could increase the efficiency of waste recycling, but also the waste generation by increasing the economic activities. It is very difficult to evaluate which activity of those two is more intense.
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors	-1	Modernization and development of river and maritime ports will have a big impact on natural and cultural landscape especially on the Danube river. Positive effect is expected if old buildings and structures will be renovated and used for new purposes. Development of the North breakwater extension will have a negative impact, which must be assessed within EIA, as well as the railway system development near deep water area, North of Danube-Black Sea Canal - Constanta port.
Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including aquatic and terrestrial ecosystems) and cultural heritage in order to achieve the sustainable development of the region	-2	Modernization and development of river and maritime ports will have a big impact on natural and cultural landscape especially in the Danube river and Black Sea area. The development of marine and river ports infrastructure (railway and access roads) will have a significant impact because affecting the functions of aquatic and terrestrial eco-systems along the seaside. EIA and SEA should be provided for any such development projects according to the ICZM requirements.
Improve energy efficiency and use of energy resources	1	Better harbours will improve the water transport energy efficiency and the energy efficiency of the transport systems connected to the harbours.
Facilitate energy generation from renewable resources	0	No direct link
Improve the quality of fuels used by the transport vehicles in order to reduce the consumption of lead gasoline and sulphur diesel and support the use of eco-fuels (e.g. bio-fuel)	0.5	No direct link
Develop environmentally friendly transport (especially public transport system and multi modal transport)	1	This will further contribute to the development of multi-modal transport. Modern ports will encourage the multi modal transport
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)	1	Modern ports will encourage the multi modal transport and, in this respect, the external costs will be diminished, through the elimination of traffic congestion in the ports and surrounding areas.
Reduce the intensity of the car traffic	1	Modern ports will encourage the multi modal transport and will reduce the car traffic as well as enable better access by rail to ports.

Key area of intervention 2.3: Modernization and development of river and maritime ports		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Proposed reformulation of key area of intervention (if any): n/a		
SEA recommendations (e.g. conditions for implementation, selection criteria etc.): Special attention should be given to the new river and maritime ports and their impacts on biodiversity (due to construction such as e.g. railway system extension). Mitigation measures anticipated in EIA or SEA must be carried out to minimize possible negative impacts or to propose modifications of the activities.		

Key area of intervention 2.4: Modernization and development of air transport infrastructure		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Maintain and improve the quality of ambient air within the limits set by the legal norms	-1	Development and modernization of air transport infrastructure will increase air traffic and will negatively affect air quality. In parallel, the air infrastructure could negatively affect the air quality, especially in the areas where those airports are developed, by increasing car traffic to the airport. To minimize the effects it is recommended to support projects related to better access of public transport to the airports. The operations in this area aim at financing the modernization and development of TEN-T airports, with a view to increasing efficiency and attractiveness for users and raising utilization capacity, as well as for an effective connection to Community and International points. Modernized airports could raise the attractiveness of the air transport and could shift a part of car transport to air transport. Positive effects on environment (especially air quality) could be obtained.
Minimize the transport impacts on the air quality at rural and urban level	-1	Development and modernization of air transport infrastructure will increase air traffic and will negatively affect air quality in urban areas, as well as increase some road transport around airports. The same measures of PT connections as above will contribute to the reduction of the negative impacts. Most of airports are built outside cities.
Limit water pollution from point and diffuse pollution sources	0	Some positive effect will be expected on the water quality following the development of water management systems in the airports, in the affected areas. Modern airports will prevent uncontrolled water discharges from airport related activities. There will be an impact if the air transport is based on water landing and take off, or located very close to water bodies.
Limit point and diffused pollution of soil	0	Significant negative impact is expected during the construction and modernization of the infrastructure and due to increased air traffic and emission pollution.

Key area of intervention 2.4: Modernization and development of air transport infrastructure		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Decrease GHG emissions from transport	-1	Increase GHG emissions are expected due to increased number of flights and passengers. This will increase the damage of the ozone layer in atmosphere, therefore significant impact is expected.
Protect and improve the conditions and functions of aquatic and terrestrial eco-systems against anthropogenic degradation, habitat fragmentation and deforestation	-1	Some impact on the anthropogenic landscape as well as habitat fragmentation and deforestation will be caused by the expansion works and the development of air transport infrastructure. For significant modifications of the current airports mitigation measures have to be proposed during EIAs.
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites	0	Increased anthropogenic degradation, habitat fragmentation, deforestation and impact on birds life (by affecting migratory routes) will be caused through the development of air transport infrastructure. Mitigation measures have to be proposed during the EIAs carried out for major modifications of the airports.
Facilitate improvement of human health by implementing measures aimed at pollution prevention	0	The air infrastructure will negatively affect the human health, especially in the urban areas where those airports are developed. Negative impact is expected. Mitigation measures will be proposed for the improvement of public transport access to the airports and through the measures aimed at the utility services' modernization.
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration	-2	Significant negative impact on settlements, where air infrastructure is located, will take place regarding noise and vibrations. The air infrastructure, especially in the urban areas will badly harm the settlements' condition. Mitigation measures related to noise and vibration increase, due to potential traffic intensification, have to be proposed in EIA.
Increase population protection from risks associated with traffic accidents	1	Adequate equipment for airports and good infrastructure will strengthen the safety of the traffic. Positive effect is expected.
Increase population protection from risk associated with natural disasters and industrial accidents caused by transportation	0	No significant impact is expected due to indirect connection
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste	0	Modernization and rehabilitation or expansion will have some negative impact due to additional waste's generation. Amelioration measures must be ensured in the project proposals.
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors	-1	The air infrastructure will negatively affect the natural and cultural landscapes, especially in the urban areas where those airports are developed. Some negative impact is expected.

Key area of intervention 2.4: Modernization and development of air transport infrastructure		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including aquatic and terrestrial ecosystems) and cultural heritage in order to achieve the sustainable development of the region	0	No direct link
Improve energy efficiency and use of energy resources	0	Better airports will support the reduction of fuel consumption and so, the energy efficiency will increase. Intensification of air traffic will lead to more fuel consumption and more intensive use of energy resources.
Facilitate energy generation from renewable resources	0	No link
Improve the quality of fuels used by the transport vehicles in order to reduce the consumption of lead gasoline and sulphur diesel and support the use of eco-fuels (e.g. biofuel)	0	No link
Develop environmentally friendly transport (especially public transport system and multi modal transport)	0.5	If the development of public transport is supported under the KAI, as one of the ways to improve access to the airports (e.g. access by rail, metro or PT), some positive effect is expected. Suggestions and applications for multi modal transport access to the airports have to be encouraged. Development of air transport itself is considered negative as a non-environmentally friendly transportation means.
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)	1	Modern ports will encourage the multi modal transport and, in this respect, the external costs will be diminished due to more pollutant transport modes (e.g. cars), but intensification of air traffic will lead to transport intensification to/ from the airports and will increase roads' congestion, situation that can be mitigated only by encouraging PT.
Reduce the intensity of the car traffic	1	For reaching the airports, car traffic will increase also during the construction phase as well as after. Modern airports will encourage the multi modal transport and reduce the car traffic therefore it will reduce their significant negative impact..
Proposed reformulation of key area of intervention (if any):		
SEA recommendations (e.g. conditions for implementation, selection criteria etc.): Negative impact on anthropogenic landscape as well as habitat fragmentation and deforestation will be caused by expansion works and the development of air transport infrastructure. Mitigation measures have to be proposed during EIAs, for significant modifications of the current airports. Measures for protection against noise and vibrations and a proper urban planning for infrastructure should be developed. Mitigation measures related to noise and vibration increase, due to potential traffic intensification, have to be proposed in EIA as well. Suggestions and applications for multi modal transport access to the airports have to be encouraged.		

Priority axis 3 - "Upgrade the railway passenger rolling stock on the national and TEN-T railway networks"

Key area of intervention 3.1: Upgrade the railway passenger rolling stock with up to date train units		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Maintain and improve the quality of ambient air within the limits set by the legal norms	1	Improving the railway fleet will encourage the transport with less pollutant modes, so the air pollution will reduce. In addition, the modernization of passenger railway rolling stock will decrease the air emissions by replacing diesel locomotives with electrical ones, having in mind the availability of the proper infrastructure.
Minimize the transport impacts on the air quality at rural and urban level	1	Improved railway transport will significantly contribute to air pollution's limitation. In the specific areas where the railway transportation exists, if the diesel locomotives are replaced with electric ones, the impact on the air quality will be further reduced.
Decrease GHG emissions from transport	1	If Diesel locomotives are replaced with electric ones, the level of GHG from rail transport will decrease significantly. A positive effect is expected.
Protect and improve the conditions and functions of terrestrial and aquatic eco-systems against anthropogenic degradation, habitat fragmentation and deforestation	0	Lesser pollution will directly influence the conditions of habitats. Some positive effect will be expected.
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites	0	Positive indirect impact
Facilitate improvement of human health by implementing measures aimed at pollution prevention	1	Improving the rail fleet will encourage the transport using less pollutant modes, so it will reduce the air pollution from several areas and improve human health.
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration	1	The opportunity for a bigger number of persons to travel by train, encouraged by better rail fleet, will potentially reduce the number of cars used. In addition, there will be a positive effect regarding noise and vibration reduction due to the use of modern and more efficient rail cars and locomotives.
Increase population protection from risks associated with traffic accidents	1	Increased safety of rail transport is expected. New and modern passenger railway rolling stocks will reduce the traffic accidents. A cumulative positive effect is expected if the specific infrastructure will also improve.
Limit use of different natural resources used in transport sector	1	Improving the rail fleet will reduce the use of natural resources (through improved efficiency) but it will increase the consumption of electricity due to the intensification of traffic. Positive effects will be obtained if diesel locomotives will be replaced with electric locomotives.
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste	0	Significant negative impact is anticipated, due to the removal of old rail cars and locomotives from the active stock, but if mitigation measures are applied introducing recycling or reusing facilities, this negative impact will be reduced.

Key area of intervention 3.1: Upgrade the railway passenger rolling stock with up to date train units		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors	0	No direct impact
Improve energy efficiency and use of energy resources	1	Improved energy efficiency per passenger is anticipated. The positive effect can be increased if diesel locomotives will be replaced with electric locomotives.
Facilitate energy generation from renewable resources	0	No direct impact
Improve the quality of fuels used by the transport vehicles in order to reduce the consumption of lead gasoline and sulphur diesel and support the use of eco-fuels (e.g. biofuel)	1	Positive effect will be reached if diesel locomotives will be modernized to work with biofuels, in case this technology will be available.
Improve environmentally-responsible behaviour of the public by promoting usage of public transport and other env. friendly means of transport (e.g. cycling, walking)	1	Modern and new rail vehicles will increase the attractiveness for the rail transportation, through better travelling conditions and shorter time for travels, and will promote the environmentally-responsible behaviour of the public.
Develop environmentally friendly transport (especially public transport system and multi modal transport)	2	The modernization of the railway transport has a direct significant positive effect on the PT system. Modernized trains will contribute to the development of multi modal transport. In parallel, upgrading the actual passenger railway rolling stocks will encourage the development of sustainable transport.
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)	1	Modern and new rail vehicles will increase the attractiveness for the rail transportation and will reduce the external costs by reducing env. impacts (air pollution), noise, congestion and risk of accidents. External costs due to railways are much lower than those of the other modes.
Reduce the intensity of the car traffic	1	Increased rail transport will lead to the decrease of car traffic. Modernized trains will improve the transportation conditions and will attract the usage of this mode of transport, further reducing the car demand and so the intensity of the traffic. Positive significant effect is expected.
Proposed reformulation of key area of intervention (if any):		
SEA recommendations (e.g. conditions for implementation, selection criteria etc.): Diesel locomotives will be replaced with electric ones to further reduce impact on the air quality.		

Priority axis 4 - "Sustainable development of the transport sector"

Key area of intervention 4.1: Promote inter-modal transport		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Maintain and improve the quality of ambient air within the limits set by the legal norms	1	The introduction of inter – modal transport will have a significant positive effect on the air quality improvement. It is proposed to develop a strategy for the development of such transport in Romania.

Key area of intervention 4.1: Promote inter-modal transport		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Minimize the transport impacts on the air quality at rural and urban level	1	The introduction of inter – modal transport will significantly contribute to the improvement of air quality in rural and urban areas. Promoting the inter-modal transport (multi modal) will reduce car traffic (freight traffic) levels in urban and rural areas, therefore the impacts on air quality will be very much minimized. Development of such transport knots will enable faster and more efficient transfer from ports to rails and access of rails to major ports (harbours).
Limit water pollution from point and diffuse pollution sources	1	There will be some negative impact due to the construction of such connections for various transport modes and the expansion of rail and water connections.
Limit point and diffused pollution of soil	1	There will be significant impact on soil given the need for new access roads and for the expansion of road branches and access to ports.
Decrease GHG emissions from transport	1	In the long run, such developments will lead to a reduction of the GHG if better access to rail road system is provided by intermodal activity.
Protect and improve the conditions and functions of terrestrial and aquatic eco-systems against anthropogenic degradation, habitat fragmentation and deforestation	1	The improvement and development of sustainable transport is the only mode that will maximize the protection of eco-systems, although there will be negative impacts of anthropogenic degradation, habitat fragmentation and deforestation due to the construction of new access lines and expansion of ports and access facilities. It is strongly suggested that any of such developments have EIA.
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites	1	The improvement and development of sustainable transport is the only mode that will maximize the protection for nature. The development activities of the intermodal transport will have significant negative impacts, which have to be mitigated by EIAs and SEAs procedures where appropriate.
Facilitate improvement of human health by implementing measures aimed at pollution prevention	2	The promotion of the environmentally friendly modes is the only way to really reduce the negative impacts of transport activities on human health. Promoting the inter-modal transport (multi modal) will reduce the pollution levels in the long run and it will facilitate the improvement of human health in general, if access to rail and shifting from road freight traffic to rail and water freight transportation is enabled.
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration	1	There will be some negative impact due to the development and usage of intermodal transport, therefore mitigation measures have to be proposed.

Key area of intervention 4.1: Promote inter-modal transport		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Increase population protection from risks associated with traffic accidents	1	The improvement and modernisation of intermodal transport will have a positive effect and will reduce the risk of traffic accidents due to safety measures and due to shifting transportation from roads to rails, considered safer.
Increase population protection from risk associated with natural disasters and industrial accidents caused by transportation	1	Improvement and modernisation of inter-modal transport will have indirect positive effect regarding industrial accidents caused by transport means, after introducing new safety measures and due to shifting transportation from roads to rails which are considered safer.
Limit use of different natural resources used in transport sector	1	The inter-modal transport will have some positive effect on the use of natural resources given the increased use efficiency but, in general, it will increase the use of the resources. Inter-modal transport contributes to the reduction of fuel consumption given the promotion and facilitation of rail transport use, which is more fuel efficient and energy efficient.
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste	1	There will be some negative impact on waste generation, which can be mitigated by establishing waste management systems aimed at each mode of transportation.
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors	1.5	There is a potential negative impact on landscape fragmentation due to the need to develop new access roads to the existing rail and water way infrastructure, therefore EIAs and SEAs have to be carried out where appropriate.
Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including aquatic and terrestrial ecosystems) and cultural heritage in order to achieve the sustainable development of the region	1	There is a potential negative impact on the preservation, protection and rehabilitation of the Romanian coastal zone of the Black Sea due to the need to develop new access roads to the existing harbours and their infrastructure. EIAs and SEAs must be carried out where appropriate.
Improve energy efficiency and use of energy resources	2	Promoting the inter-modal transport (multi modal) will reduce transport energy consumption by encouraging the more energy efficient modes of transport. Significant impact is expected in the long term.
Facilitate energy generation from renewable resources	1	No direct link
Improve the quality of fuels used by the transport vehicles in order to reduce the consumption of lead gasoline and sulphur diesel and support the use of eco-fuels (e.g. biofuel)	1	No direct link
Improve environmentally-responsible behaviour of the public by promoting usage of public transport and other env. friendly means of transport (e.g. cycling, walking)	2	The achievements of the sustainable transport will positively influence the public behaviour by enabling a better access to water and rail transport. Businesses as well as the public will gain access to less environmental damaging transportation means.

Key area of intervention 4.1: Promote inter-modal transport		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Develop environmentally friendly transport (especially public transport system and multi modal transport)	2	There will be a direct positive significant effect from promoting the inter-modal movement (multi modal) and implementing measures that will increase the use of the environmentally friendly modes (e.g. rail) in the detriment of the pollutant ones (e.g. trucks and cars).
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)	2	Promoting inter-modal transport will enable the development of sustainable transport and the internalization of the env. costs of the transport. Positive effect is expected in the long term.
Reduce the intensity of the car traffic	2	There will be a potential positive effect if measures on restricting car traffic and enabling rail transport are promoted, developed and implemented. Promoting the inter-modal movement (multi modal) will encourage the sustainable transport by adopting the measures that will increase the use of the environmentally friendly modes(e.g. rail) in the detriment of the pollutant ones(e.g. cars), so the intensity of car traffic will be reduced.
Proposed reformulation of key area of intervention (if any): **Development of inter-modal terminals and logistic centers**		
SEA recommendations (e.g. conditions for implementation, selection criteria etc.): Negative impact on landscape fragmentation will take place due to the need to develop new access roads to the existing rail and water way infrastructure. There will be a potential negative impact on the Romanian coastal zone of the Black Sea due to the need to develop new access roads to the existing harbours and their infrastructure therefore the EIA and SEA have to be carried out where appropriate.		

Key area of intervention 4.2: Improve traffic safety across all transport modes		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Maintain and improve the quality of ambient air within the limits set by the legal norms	1	Measures to reduce the transport accidents (e.g. improving road/rail level crossings and the construction of new road /rail over/under passes; modernizing the horizontal and vertical signalling systems; improving and developing the physical infrastructure by taking preventive measures such as road indicators, video cameras, linear villages, etc.) will have no direct impact on the air quality. But, in addition, by adopting such measures it is possible to encourage the car traffic, so the air quality will be affected.
Minimize the transport impacts on the air quality at rural and urban level	1	Measures to reduce the transport accidents (e.g. improving road/rail level crossings and constructing of new road /rail over/under passes; modernizing the horizontal and vertical signalling systems; improving and developing the physical infrastructure, by taking preventive measures such as road indicators, video cameras, linear villages, etc.) will not directly impact air quality in rural and urban settlements. Safety measures for pedestrians and traffic will have an indirect effect, which can not be assessed.
Limit water pollution from point and diffuse pollution sources	0	Safety measures will have some insignificant effect on water pollution levels.
Limit point and diffused pollution of soil	0.5	Building over and underground passes will affect the soil pollution during the construction period. Some temporary insignificant effect is expected.
Decrease GHG emissions from transport	1	Measures to reduce the transport accidents will have no or insignificant impact regarding GHG emissions.
Protect and improve the conditions and functions of aquatic and terrestrial eco-systems against anthropogenic degradation, habitat fragmentation and deforestation	0	No direct link
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites	0	No direct link
Facilitate improvement of human health by implementing measures aimed at pollution prevention	1	The measures that promote the reduction of the transport accidents (e.g. improving road/rail level crossings and constructing of new road /rail over/under passes; modernizing the horizontal and vertical signalling systems; improving and developing the physical infrastructure, by taking preventive measures such as road indicators, video cameras, linear villages, etc.) will diminish the number of injuries or deaths from transport events. There will be significant positive long term effect. Improved access for handicapped people should be promoted.

Key area of intervention 4.2: Improve traffic safety across all transport modes		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration	1	Improving the transport conditions in order to decrease the number of accidents will positively affect the reduction of noise and vibration (due to reduced speed, e.g.).
Increase population protection from risks associated with traffic accidents	2	The risk for accidents will reduce and therefore significant positive effect is expected.
Increase population protection from risk associated with natural disasters and industrial accidents caused by transportation	1	No direct link
Limit use of different natural resources used in transport sector	0	There will be an increase in the use of natural resources during the construction phase as well as some decrease due to the reduction of cars' travel speed.
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste	0.5	No direct link
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors	1	Some insignificant impact due to construction of traffic separation fences and other safety measures.
Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including aquatic and terrestrial ecosystems) and cultural heritage in order to achieve the sustainable development of the region	1	It will reduce the risk of accidents with dangerous toxic substances, that is why a positive effect can be expected.
Improve energy efficiency and use of energy resources	1	Some insignificant impact due to reduction of speed of cars
Facilitate energy generation from renewable resources	0.5	No direct link
Improve the quality of fuels used by the transport vehicles in order to reduce the consumption of lead gasoline and sulphur diesel and support the use of eco-fuels (e.g. biofuel)	1	No direct link
Improve environmentally-responsible behaviour of the public by promoting usage of public transport and other env. friendly means of transport (e.g. cycling, walking)	1	The positive effect due to improved traffic safety and the improved access to the environmentally-friendly transport modes (e.g. public transport, cycling and walking) will help raise the public interest in using such kind of transport ways.
Develop environmentally friendly transport (especially public transport system and multi modal transport)	1	Positive effect can be reached if the proposed action will be focused on the improvement of the traffic safety for the environmental-friendly transport modes.
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)	1	It will help reduce accidents, infrastructure damages and congestions. Reducing the transport accidents it will help decrease the external costs related to this event.
Reduce the intensity of the car traffic	0	Traffic intensity will rise given increased traffic safety (especially for cars) because traffic participants are encouraged to use this type of movement. The intensity will be reduced by enabling better access and promoting PT for all social groups.
Proposed reformulation of key area of intervention (if any): n/a		

Key area of intervention 4.2: Improve traffic safety across all transport modes		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
SEA recommendations (e.g. conditions for implementation, selection criteria etc.): Special attention should be paid to overpasses and under passes, their location and impact. With an increased traffic safety, traffic intensity will rise (especially for cars) because the traffic participants are encouraged to use this type of movement. It will be reduced by enabling a better access and promoting PT for all social groups.		

Key area of intervention 4.3: Minimize adverse effects of transport on the environment		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Maintain and improve the quality of ambient air within the limits set by the legal norms	2	All the actions undertaken in this area (environment protection) will improve the environmental conditions, but the main condition is to have a proper strategy and to implement the proper measures. Promoting legislation that complies with the Kyoto Protocol, in the transport sector, will contribute to improvement of air quality. It is recommended to carry out SEAs for the strategy.
Minimize the transport impacts on the air quality at rural and urban level	2	Development of the transport environmental strategy will have a positive long term effect. It is proposed to focus on PT, rail and water transport modes development, providing better intermodal access and connection of those modes of transport infrastructure with the international ones.
Limit water pollution from point and diffuse pollution sources	2	The environmental measures for waste treatment and de-pollution will limit water pollution from point and diffuse pollution sources. There will be significant positive effect.
Limit point and diffused pollution of soil	2	The environmental measures aimed at waste treatment and de-pollution will have a significant positive effect on soil quality.
Decrease GHG emissions from transport	2	The KAI will enable the promotion of legislation that complies with the Kyoto Protocol, in the transport sector and it will contribute to the improvement of air quality in the long run.
Protect and improve the conditions and functions of aquatic and terrestrial eco-systems against anthropogenic degradation, habitat fragmentation and deforestation	1	Significant positive effects are expected but, based on the current description, it is impossible to measure the effect. It is recommended to have SEAs carried out for the long term strategies and plans in the transport sector.

Key area of intervention 4.3: Minimize adverse effects of transport on the environment		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites	2	Significant positive effects are expected but, based on the current description it is impossible to measure the effect. It is recommended to have SEAs carried out for long term strategies and plans in the transport sector. Some positive effect is expected due to wastewater systems' modernization for the vessels on the Danube.
Facilitate improvement of human health by implementing measures aimed at pollution prevention	2	Significant positive effects are expected but, based on the current description it is impossible to measure the effect. It is proposed to have SEAs carried out for the long term strategies and plans in the transport sector.
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration	2	The same as above
Increase population protection from risks associated with traffic accidents	1	The same as above
Increase population protection from risk associated with natural disasters and industrial accidents caused by transportation	1	The same as above
Limit use of different natural resources used in transport sector	1	The same as above
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste	1	The same as above
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors	1	The same as above
Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including aquatic and terrestrial ecosystems) and cultural heritage in order to achieve the sustainable development of the region	1	The same as above

Key area of intervention 4.3: Minimize adverse effects of transport on the environment		
Relevant env. objectives	**Evaluation**	**Comments on likely env. effects**
Improve energy efficiency and use of energy resources	1	The same as above
Facilitate energy generation from renewable resources	1	The same as above
Improve the quality of fuels used by the transport vehicles in order to reduce the consumption of lead gasoline and sulphur diesel and support the use of eco-fuels (e.g. biofuel)	2	The same as above
Improve environmentally-responsible behaviour of the public by promoting usage of public transport and other env. friendly means of transport (e.g. cycling, walking)	2	The same as above
Develop environmentally friendly transport (especially public transport system and multi modal transport)	2	The same as above
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)	2	The same as above
Reduce the intensity of the car traffic	2	The same as above
Proposed reformulation of key area of intervention (if any): Minimize adverse effects of transport on the environment **by developing the national Environmental Strategy of Transport Sector and other activities aimed at mitigation of env. effects**		
SEA recommendations (e.g. conditions for implementation, selection criteria etc.): This area of intervention is not clearly defined. It is proposed to focus on the promotion strategies and plans for public transport and other environmental friendly types of transport, promotion of bio-diesel fuel, mitigation of the adverse impacts of transport sector (rehabilitation of the areas affected by road constructions or other transport infrastructure). Based on the current description it is impossible to measure the effect therefore it is proposed to have SEAs carried out for long term strategies and plans proposed in this KAI.		

7.2 Evaluation of cumulative effects of the SOPT on the relevant environmental objectives

Cumulative environmental effects arising from implementation of SOPT were analyzed using simplified approach proposed in the Methodology of the SEA Handbook. Cumulative effects are effects that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the proposal. Cumulative effects can result from individually, minor but collectively significant actions taking place over a period of time.

For this analysis information generated by the preceding assessments of individual measures in the programming document, presented in the sub-chapter 8.1 was used. For the purpose do this analysis, all effects of the proposed key areas of interventions on the relevant environmental objectives were collected. It enabled to considerate whether significant cumulative environmental effects (positive and negative) are likely to occur for each KAI.

The assessment is presented for each relevant environmental objective summarizing positive and negative effects.

Table 7. Summary of the likely cumulative environmental effects of the SOPT to the environmental objective

Relevant env. objective	Environmental effects	Overall cumulative impact
Maintain and improve the quality of ambient air within the limits set by the legal norms	Positive: Rail network improvement and intermodal transport development will have a positive effect. Improving the rail fleet will encourage the less pollutant transport mode, so will reduce the air pollution; Positive effect due to increased speed of travel and reduced congestions, as well as improved quality of road. All the actions undertaken on environment protection will improve the environment conditions, but the main condition is to have a strategy and the implement the measures. Promoting legislation that complies with Kyoto Protocol in transport sector will contribute to improvement of air quality. It is proposed to carry out SEA for the strategy. Negative: The construction of new motorway will increase the car traffic along the TEN-T priority axis 7, so the air pollution levels will be increased in these areas due to intensification. During the road construction and operation period there is likely to be a significant negative impact. Development and modernization of river and maritime ports will affect air quality especially during constructions but also during operation	The SOPT is likely to have a positive or neutral overall effect on improvement of air quality comparing with the actual situation in the areas where the MAC are exceeded. Positive effect can be strengthened if PT and railways is supported and given priority within the overall transport system

Relevant env. objective	Environmental effects	Overall cumulative impact
Minimize the transport impacts on the air quality at rural and urban level	Positive: The motorways' network development will enable bypasses of urban and rural areas, so it is anticipated that the negative impacts of car traffic on the air quality of human settlements will be minimized The development and modernization of railway on the TEN-T priority axis 22, will minimize the air pollution levels along this corridor and has a potential to reduce the car traffic. The development and modernization of water transport infrastructure will improve the quality of ambient air because it will support the reduction of car traffic by switching the road transport demand to water ways. Development of the transport environmental strategy will have a positive long term effect. It is proposed to focus on out of city PT, railway and water transport providing a better intermodal access and access of those modes of transport infrastructure with international ones. Negative: The effect of development will be the intensification of traffic and increase air pollution.	The SOPT is likely to a positive overall effect on air quality in rural and urban areas comparing with the actual situation. Positive effect can be strengthened if PT and railways is supported and given priority within the overall transport system
Limit water pollution from point and diffuse pollution sources	Positive: Modernization of roads will reduce relative water pollution due to transport by enabling better and more efficient traffic movement and if water collection or removal systems are in place. The development of marine and river ports infrastructure (environmental service development such as waste and waste water management) will have positive effect due to elimination and mitigation of water pollution; The environmental measures for waste treatment and clean-up will limit water pollution from point and diffuse pollution sources of transport. Negative: The effect of development will be the intensification of rail traffic, construction of new branches of railroad and increase runaway water pollution; Access of ports by more ships will lead to water pollution in those areas (due to fuel supply and maintenance activities).	The SOPT may have either positive or negative impact on the water quality – depending on the extend of the actual use of the BAT technologies and presence of sound environmental management practices (EMAS, ISO 14xxx) in the supported projects
Limit point and diffused pollution of soil	Positive: Modernization and improvement of water infrastructure will reduce the soil pollution indirectly. The environmental measures aimed at waste treatment and clean up will have significant positive effect on soil quality Negative: The effect of development will be the intensification of rail traffic, construction of new branches of railroad and increase soil pollution; The development of new national road have a consequences of the intensification of car traffic and increase soil pollution and erosion risk; Significant negative impact during the construction and modernization of the infrastructure and due to increased air traffic and emission pollution	The SOPT may have either positive or neutral overall effect on the soil quality – depending on the extent of the actual use of the BAT technologies and presence of sound environmental management practices (EMAS, ISO 14xxx) in the supported projects.

Relevant env. objective	Environmental effects	Overall cumulative impact
Decrease GHG emissions from transport	Positive: Modernized roads may contribute to the reduction of fuels consumption per passenger; Improvement of rail infrastructure will attract more passengers and the GHG per passenger will reduce Negative: The development of new and modernized road corridors will always increase the car traffic and therefore emissions, including the GHG will increase. Higher GHG emissions will be due to the increased air transport intensity.	The SOPT will have a neutral or negative overall impact on the GHG emission. the negative impact may be reduced if negative trend in train and PT transport use is reversed by the activities supported within the S SOPTT
Protect and improve the conditions and functions of terrestrial and aquatic ecosystems against anthropogenic degradation, habitat fragmentation and deforestation	Positive: it is anticipated that the KAI „Minimize adverse effects of transport on the environment" will have an overall positive effect, but it is impossible to measure the scale and impacts of the KAI therefore it is proposed to have SEA carried out for long term strategies and plans in the transport sector. Negative: Major impact on eco-systems and habitat fragmentation not only during the construction period but also after especially if new sections of roads are built The development of road infrastructure will have significant anthropogenic degradation, habitat fragmentation and deforestation; Significant impacts on aquatic eco-systems due to constructions activities e.g. dredging will take place	The SOPT will have a significant overall negative impact on the conditions and functions of terrestrial and aquatic eco-systems. The negative impact may be reduced if EIAs are carried out for each project and specific impacts to the particular areas are assessed and proposed mitigation measures are carried out. The SOPT have a potential to affect many geographic locations therefore each of them has to be analyzed separately

Relevant env. objective	Environmental effects	Overall cumulative impact
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites	Positive: The improvement and development of sustainable transport is the only mode that will maximize the protection for nature. Negative: The development and modernization of the transport infrastructure, including railways, will harm the natural habitats in protected areas and will cause the further habitat and landscape fragmentation The development of water transport infrastructure will have significant impact because affect of functions of aquatic eco-systems of the Danube linked with the protected areas and Natura 2000 sites; Increase of anthropogenic degradation, habitat fragmentation, deforestation and impact on birds (by affecting migratory routes) will be caused by development of air transport infrastructure	The SOPT will likely to have a significant negative impact on the protected areas and Natura 2000 sites. Since the impact locations are not know yet (due to the Natura 2000 network being in the process of elaboration and final approval), the scale of the impacts is impossible to assess. The negative impact may be reduced if EIAs are carried out for each project and specific impacts to the particular areas are assessed and proposed mitigation measures are carried out. The SOPT have a potential to affect many geographic locations therefore each of them has to be analyzed separately.

Relevant env. objective	Environmental effects	Overall cumulative impact
Facilitate improvement of human health by implementing measures aimed at pollution prevention	Positive: The development of road TEN-T will lead to the improvement of air quality in urban areas by shifting of car transport out of the cities and therefore enabling better environment in urban locations Reduced pollution due to increased speed of trains and enabled more and faster freight transportation and potentially removal of freight from roads to rails will contribute to improvement of human health; The development and modernization of the water transport infrastructure will improve the human health because it will support the intensity reduction of car traffic by switching the road transport demand to water ways and relative reduction in air pollution; The promotion of the environmentally friendly modes will contribute to the reduction of the negative effects of transport activities on human health; The measures that promote reduction of the transport accidents (e.g. improving road/rail level crossings and construction of new road /rail over/under passes; modernizing the horizontal and vertical signalling systems; improving and developing the physical infrastructure, by taking preventive measures such as road indicators, video cameras, linear villages, etc.) will diminish the number of injuries or death from transport events. Negative: Contribution to air and noise pollution due to construction (short term) and intensification of traffic (long term).	The SOPT may have overall positive effect on the human health
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration	Positive: Bigger number of persons travelling by train encouraged by better rail fleet have a potential to reduce number of cars used; Improving the transport conditions in order to decrease the number of accidents will positively effect reduction of noise and vibration (due to reduced speed, e.g.). Negative: Contribution to air and noise pollution is expected due to road construction; Improved railways will have some additional impact due to increased traffic on the rails and speed of travel; Air quality, noise and vibration, of the urban areas, with great harbours, will be negatively affected by the water transport activities	The SOPT is likely to have reduction of negative impacts and positive effects in different locations, therefore an overall neutral effect on the conditions of settlements with the respect to the transport noxes are expected

Relevant env. objective	Environmental effects	Overall cumulative impact
Increase population protection from risks associated with traffic accidents	Positive: The development of road TEN-T infrastructure will lead to the improvement of transport conditions, shortening the travel time, reducing number of settlement bypassed by the road and diminish the number of accidents; Better rail infrastructure will diminish the number of rail accidents; Modern harbours will have a positive effect on the reduction and prevent of traffic accidents of water transport Negative: Increased traffic in the area will lead to higher number of accidents in some areas	The SOPT is likely to have a positive effects on the protection of population from traffic accidents
Increase population protection from risk associated with natural disasters and industrial accidents caused by transportation	Positive: The development of road TEN-T infrastructure will lead to the improvement of dangerous goods transport conditions and diminish the number of accidents; Rivers regularization will reduce the risk associated with industrial and water traffic accidents	The SOPT is likely to have some positive effects on the reduction of risk associated with the natural and industrial accidents
Limit use of different natural resources used in transport sector	Positive: Improvement of and expected shift to rail will have a significant positive effect; Improving the rail fleet will reduce the use of energy resources (efficiency); The inter-modal will have some positive effect on the use of natural resources due to more efficient use of them. Negative: Development of road, rail and water infrastructure will increase the use of natural resources not only during the construction period but also after due to the fuel consumption	Overall positive effect is expected due to improved fuel efficiency. Some negative impact due to intensification of traffic and therefore increase in fuel consumption may reduce the positive effect. this reduction maybe compensated with increasing shift to rail transportation.
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste	Negative: Better roads will lead to more and new cars being used and will result in waste from old cars; Significant negative impact due to old rail cars and locomotives being removed from the active stock; The quantity of vehicle waste oil and tires will rise; Due to intensification of the use of rail infrastructure there will be some increase in waste generation due to ware out of the old equipment.	The SOPT is likely to have a negative impact on the waste generation, recovery and reuse. Negative effects from the SOPT can be reduced by other national programmes indirectly linked with the SOPT, such as efforts to recycle and reuse waste
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors	Negative: Development of road and rail infrastructure will cause the further habitat and landscape fragmentation The development of water transport infrastructure will have significant impact because of affect of functions of aquatic and marine ecosystems, especially in Danube Delta	The SOPT is likely to have an overall negative impact on protection of natural and cultural landscape from fragmentation due to traffic corridors

Relevant env. objective	Environmental effects	Overall cumulative impact
Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including aquatic and terrestrial ecosystems) and cultural heritage in order to achieve the sustainable development of the region	Negative: The modernization of national road infrastructure, along the Romanian coastal zone of the Black Sea, will cause damages on natural and cultural heritage; Modernization and development of river and maritime ports will have a big impact on natural and cultural landscape especially on the Danube river and Black Sea area	The SOPT is likely to have an overall negative impact on protection and rehabilitation of the Romanian coastal zone of the Black Sea and its natural and cultural heritage
Improve energy efficiency and use of energy resources	Positive: Better road and railway infrastructure will enable better energy efficiency (better usage of petrol and oil per km travelled and ton of freight transported) Promotion of rail will contribute to efficient use of fuel consumption as well as improved rolling stock ensure Berger energy consumption per km; Promoting the inter-modal transport (multi modal) will reduce the transport energy consumption by encouraging the more energy efficiency modes of transport	The SOPT will have an overall positive effect on the energy efficiency and use of energy resources
Facilitate energy generation from renewable resources	Positive: Positive effect will be reached if diesel locomotives will be modernized to work with biofuels. Based on the current description of the KAI „Minimize adverse effects of transport on the environment" it is impossible to measure the effect therefore it is proposed to have SEA carried out for long term strategies and plans in the transport sector	The SOPT is likely to be a small scale positive effect on the energy generation from reviewable resources. The impact can be increased if the measures to introduce bio-fuel into transport sector (e.g. in PT and trains).
Improve the quality of fuels used by the transport vehicles in order to reduce the consumption of lead gasoline and sulphur diesel and support the use of eco-fuels (e.g. bio fuel)	Positive: Positive effect will be reached if diesel locomotives will be modernized to work with biofuels; Based on the current description of the KAI „Minimize adverse effects of transport on the environment" it is impossible to measure the effect therefore it is proposed to have SEA carried out for long term strategies and plans in the transport sector Negative: Better transport infrastructure will lead to more fuel consumption and there fore more demand for fuel	The SOPT is likely to be small scale positive effect on the quality of fuels used by the transport vehicles. The impact can be increased if the measures to introduce bio-fuel into transport sector (e.g. in PT and trains).

Relevant env. objective	Environmental effects	Overall cumulative impact
Improve environmentally-responsible behaviour of the public by promoting usage of public transport and other env. friendly means of transport (e.g. cycling, walking)	Positive: Modern and new rail vehicles will increase the attractiveness for the rail transportation by better travel conditions and shorter time and will promote the environmentally-responsible behaviour of the public.; The achievements of the inter-modal transport will positively influence the public behaviour by enabling a better access to water and rail transport; The positive effect due to improved the traffic safety and the improved access to the environmentally-friendly transport modes (e.g. public transport, cycling and walking); Based on the current description of the KAI „Minimize adverse effects of transport on the environment" it is impossible to measure the effect therefore it is proposed to have SEA carried out for long term strategies and plans in the transport sector. Negative: Improvement in road infrastructure will facilitate more intensive use of road and private transport, therefore there will be a significant long term negative effect.	The SOPT is likely to have a positive or neutral effect on the environmentally-responsible behaviour of the public
Develop environmentally friendly transport (especially public transport system and multi modal transport)	Positive: Railway and water infrastructure modernization is directly linked with the development of environmental friendly transport; Modernization of the railway has direct significant positive effect on PT system; It will have a direct positive significant impact by promoting the inter-modal movement (multi modal) and implementing measures that will increase the use of the environmentally friendly modes (e.g. rail) in favour of the pollutant ones (e.g. trucks and cars); Based on the current description of the KAI „Minimize adverse effects of transport on the environment" it is impossible to measure the effect therefore it is proposed to have SEA carried out for long term strategies and plans in the transport sector. Negative: The improved and modernized roads will increase the car traffic, so the road transport demand will be increased.	The SOPT is likely to have a positive effect on the development of environmentally friendly transport
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)	Positive: Reduction of congestion of traffic and air pollution reduction due to bypasses is expected; Rehabilitated sections of railroad will contribute to the decrease of air pollution and will reduce the transport external costs; Berger rail transport and modern ports will encourage the multi modal transport and, in this respect, the external costs will be diminished such as elimination of traffic congestion in the ports and surrounding areas; Negative: The construction of road TEN-T infrastructure will cause intensification of car traffic (and so increase the external costs) in specific areas (not including urban and rural areas).	The SOPT is likely to have a positive effect on the reduction of the transport external costs

Relevant env. objective	Environmental effects	Overall cumulative impact
Reduce the intensity of the car traffic	Positive: Support to railway reconstruction and modernization will have a positive effect through increased speed of train and freight train travel; The development and modernization of water transport infrastructure will support the reduction of car traffic by switching the road transport demand to water-ways; There is a potential positive effect if measure on restricting car traffic and enabling rail transport are promoted, developed and implemented; Negative: Modernize the road infrastructure will increase car traffic in on medium and long time period.	The SOPT is likely to have a positive effect on the reduction of car traffic in some locations

8 The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the SOPT

8.1 **Measures to minimise, reduce or offset the likely significant environmental effects of each area of intervention**

Assessment tables of each area of intervention provided in the Sub-chapter 8.1 suggest the key measures that should be taken to minimise, reduce or offset their likely significant environmental effects.

It is recommended that the implementation system for the SOPT fully integrates these recommendations among **selection criteria** for projects that will seek funding under the SOP.

8.2 **Additional measures to minimise, reduce or offset the likely significant environmental effects of the implementation of the entire programming document**

The proposal of environmental evaluation of project applications outlined below offers a general system for identifying projects which will be the least harmful to the environment or those which will have the biggest environmental benefits. The aim of this system is to ensure that the SOPT will support primarily those projects which will bring a positive environmental effect.

The system of environmental evaluation of project applications does not substitute other tools of environmental protection under the respective legal regulations (e.g. EIA, IPPC, etc.) – they are designed to ensure the maximum positive environmental impacts of the SOPT.

Description of the proposed system for environmental evaluation and selection of project applications
Environmental evaluation of project applications should be carried out as an integral part of decision-making about granting support to a concrete project within the SOPT, i.e. evaluation as for environmental criteria should be a part of the summarising evaluation of the project submitted.

Environmental evaluation of project applications is proposed in two stages:
- Pre-project environmental evaluation during project preparation,
- Formal environmental evaluation within official selection procedures.

Environmental evaluation by project applicants

It is very important for the project applicant (submitting entity) to undertake environmental evaluation during elaboration of their project application. This should enable them to modify the project so as it gets the best possible evaluation as for its environmental impacts. Pre-project evaluation will be carried out by the submitting institution using the generic forms outlined in the table below.

In-filled environmental evaluation forms (together with any other supplementary information) should be submitted by the project applicant as an integral part of their project application.

Table 8. Recommended form for project proposal evaluation from environmental impact point of view

Project name/ref.:	**Impacts of the project on relevant environmental objectives for the SOPT**			
Relevant environmental objectives for the SOPT	**Positive**	**Neutral or not applicable**	**Negative**	**Short explanation of scale and nature of the impact**
Maintain and improve the quality of ambient air within the limits set by the legal norms				
Minimize the transport impacts on the air quality at rural and urban level				
Limit water pollution from point and diffuse pollution sources				
Limit point and diffused pollution of soil				
Decrease GHG emissions from transport				
Protect and improve the conditions and functions of terrestrial and aquatic ecosystems against anthropogenic degradation, habitat fragmentation and deforestation				
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites				
Facilitate improvement of human health by implementing measures aimed at pollution prevention				
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration				
Increase population protection from risks associated with traffic accidents				

Project name/ref.:	**Impacts of the project on relevant environmental objectives for the SOPT**			
Relevant environmental objectives for the SOPT	**Positive**	**Neutral or not applicable**	**Negative**	**Short explanation of scale and nature of the impact**
Increase population protection from risk associated with natural disasters and industrial accidents caused by transportation				
Limit use of different natural resources used in transport sector				
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste				
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors				
Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including aquatic and terrestrial ecosystems) and cultural heritage in order to achieve the sustainable development of the region				
Improve energy efficiency and use of energy resources				
Improve the quality of fuels used by the transport vehicles in order to reduce the consumption of lead gasoline and sulphur diesel and support the use of eco-fuels (e.g. bio-fuel)				
Improve environmentally-responsible behaviour of the public by promoting usage of public transport and other env. friendly means of transport (e.g. cycling, walking)				
Develop environmentally friendly transport (especially public transport system and multi modal transport)				
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)				
Reduce the intensity of the car traffic				

Formal review of environmental evaluations during project selection

The formal environmental evaluation of project applications should be carried out as an integral part of the selection procedures concerning granting of support within the SOPT.

In-filled environmental evaluation forms (and any other supplementary information) that were submitted by the project applicant within their project application will be reviewed - in the framework of the overall evaluation of the project - by environmental specialists at the evaluation committee (ideally representative of the environmental authority).

This review will analyse the quality of submitted environmental evaluation and can propose changes in the project and/or conditions for the project implementation. Based on this review, the selection committee will determine, inter alia, obligatory conditions for granting funds from the SOPT.

8.3 Concluding commentary on the proposed measures to minimise, reduce or offset the likely significant environmental effects of the implementation of the operational programme

The system described in the above sub-chapter 9.2 aims to maximise the positive environmental impacts of the entire implementation of operational programme. It is proposed as an opportunity for enhancing the overall quality of projects and not as an administrative barrier.

In order to implement this system, it is especially necessary:

- To incorporate the proposed measures that should be taken to minimise, reduce or offset the likely significant environmental effects of each area of intervention provided (outlined in the sub-chapter 8.1) among the core selection criteria for project applications.
- To incorporate the proposed environmental evaluation of project applications into the overall system of evaluating and selecting projects
- To ensure sufficient personnel and professional capacities for environmental areas within the project evaluation
- To ensure that the applicants are informed sufficiently about environmental issues and about possible links of the draft projects to the environment.

Ensuring the above activities requires sufficient personnel and professional capacities for the area of environment, in the framework of the whole evaluation and selection system of the SOPT.

9 A description of the measures envisaged concerning monitoring

9.1 **Description of the proposed system of monitoring the environmental effects**

The system for environmental monitoring proposed by SEA takes into consideration the fact that, during monitoring of environmental indicators on national or regional level, it is impossible to distinguish the SOPT environmental impacts from impacts of other activities /interventions (e.g. projects financed from sources other than the SOPT).

The SEA team also presumes that the proposal below will possibly be modified to accommodate the way of implementing the SOPT and according to the characters of the single projects submitted. Fulfilment of this presumption, however, is connected with ensuring sufficient personnel and professional capacities within the whole system of monitoring the SOPT implementation impacts.

The proposed monitoring system is based on the relevant environmental objectives specified by the SEA team (see Chapter 7). These objectives represent environmental areas and topics that can be substantially influenced by the SOPT implementation, i.e. the environmental impacts of the SOPT implementation will be monitored through the extent to which these objectives would be influenced.

In order to monitor the extent of the effects that the SOPT has on the the environment, the SEA team proposed environmental indicators for each of the relevant environmental objectives. The SEA team proposes to selectively use monitoring indicators to monitor environmental effects based on the characteristics of the projects selected for funding. Its expected that those environmental objectives which were used within the project evaluation and selection will be further used for the monitoring of the project. By monitoring and summarising the single project monitoring results, it will then be possible to estimate the overall environmental effect on the relevant environmental objectives in other words, on the SOPT.

The proposed environmental indicators have to be incorporated into the overall system of monitoring the SOPT. This monitoring should be carried out during the whole programming period (one a year or at least interim report after 6 months from the project start and at the end of the project, if it takes) and the results should be published regularly, ideally in electronic form (Internet).

Table of proposed monitoring indicators to assess effects of the programme on the environment is provided in the table below.

Table 9. Proposed environmental monitoring indicators

Relevant env. objectives	Indicators	Description
Maintain and improve the quality of ambient air within the limits set by the legal norms	-Emissions in kilotons per year by mode of: - SOx - NOx, - VOCs, - PM10	Reduction of emission levels. Data aggregated from the project level may be further compared with data from the national monitoring data. Data should be also calculated for intercity and international transportations.
Minimize the transport impacts on the air quality at rural and urban level	*The same as above*	*The same as above*
Limit water pollution from point and diffuse pollution sources	-The number of illegal and accidental discharges of pollutants by modes on surface and underground waters; -Reduction of emissions to water due to projects	Reduction of the transport discharges of pollutants in rivers or/and sea. Its recommended also to introduce this indicator into the national monitoring system. Data from the project monitoring at the end of implementation phase.
Limit point and diffused pollution of soil	The number of accidents causing soil pollutants	Data from Environmental Agency
Decrease GHG emissions from transport	Transport emissions of greenhouse gases (CO2 equivalent) by mode (kt/year)	Reduction of GHG emission levels due to the transport traffic. Effects for specific projects and the SOPT respectively should be calculated based on fuel consumption.
Protect and improve the conditions and functions of terrestrial and aquatic eco-systems against anthropogenic degradation, habitat fragmentation and deforestation	- Land fragmentation increase due to SOPT Or - Indicatori: numarul de habitate afectate, starea si suprafata lor	Data from the project monitoring
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites	Infrastructure surface land take in Romania (increase due to projects)	Data from the monitoring of the specific projects supported within the SOPT and national statistics
Facilitate improvement of human health by implementing measures aimed at pollution prevention	Number (or %) of people living in the areas with the air pollution levels exceeded Morbidity and mortality	National statistics data For morbidity and mortality indicators it is recommended data to be collected only in the projects which will take palace in "Hot spot" locations. Data provided by the National Center for Organization and Providing of the Informational System in the Health Field.(CNOASII)
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration	Percent of population exposed to traffic noise	Data from environmental agency
Increase population protection from risks associated with traffic accidents	-Change in number of fatalities due to traffic accidents (by mode of transport)	National statistics data

Relevant env. objectives	Indicators	Description
Increase population protection from risks associated with natural disasters and industrial accidents caused by transportation	-Number of transport accidents causing large scale env. pollution (road, rail, and water (both river and marine))	National statistics data and data from specific projects (if available)
Limit use of different natural resources used in transport sector	Total energy consumption by transport (by modes)	Data from monitoring of specific projects
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste	-Waste recycled from transport (e.g. number of end-of-life vehicles, in tons) -Number recycled used tires	Number of end-of-life vehicles from the national statistics and tons of waste recycled from projects; Number of recycled of used tires from national statistics and from project monitoring
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors	Fragmentation area of ecosystems and habitats	Project monitoring data, national statistics data
Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including aquatic, marine and terrestrial ecosystems) and cultural heritage in order to achieve the sustainable development of the region	Number of illegal and accidental discharges of oil by ships at the sea and in the rivers	From the National statistics data and/or SOPT monitoring by project
Improve energy efficiency and use of energy resources	Transport final energy consumption (total and by mode)	Data from monitoring of specific projects and from the National statistics data
Improve the quality of fuels used by the transport vehicles in order to reduce the consumption of lead gasoline and sulphur diesel and support the use of eco-fuels (e.g. bio-fuel)	-Uptake of cleaner fuels (unleaded petrol, electric, alternative fuels)	Data from monitoring of specific projects or from the National statistics data
Improve environmentally-responsible behaviour of the public by promoting usage of public transport and other environmentally friendly means of transport (e.g. cycling, walking)	Number of projects dealing with environmentally responsible behaviour	Data from monitoring of specific projects
Develop environmentally friendly transport (especially public transport system and multi modal transport)	Number of project focused on development of environmentally friendly transport	Data from monitoring of specific projects
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)	- Number of rail and water-passenger/km - Change of road transport passenger share compared to other type of passengers	It is a complex objective, which contains multiple environmental effects therefore due to the scope of the SOPT it is recommended to assess the change in the use of PT and review the safety changes on the national roads. Data from national statistics.

Relevant env. objectives	Indicators	Description
Reduce the intensity of the car traffic	- Size of the vehicle fleet; - Number of passenger-km and tones-km/year Number of passenger-km of PT vs. private transport (long distance, excluding urban PT)	From the National statistics

The data for monitoring of the overall effect of the SOPT should be base on the data from monitoring of the specific projects. The estimations of the SOPT environmental effect might be further compare with national monitoring data.

For the purpose of monitoring the effects, a monitoring programme was prepared and is attached in the Annex 5.

9.2 General recommendations of the SEA team concerning monitoring

A quality and effective system of monitoring and evaluating of the environmental impacts of the SOPT implementation will contribute not only to preventing the programme's possible negative environmental impacts, but it will also help to enhance its positive effects, not only in terms of the environment, but also in terms of a higher quality of the projects submitted.

In order to ensure monitoring, it is necessary:

- To incorporate the environmental indicators proposed into the overall system of monitoring the SOPT implementation impacts
- To connect the monitoring system to the system of evaluating and selecting the projects i.e. use the same environmental objectives/indicators for the project evaluation and selection and also for further project monitoring;
- To link monitoring of the SOPT to monitoring of the single projects i.e. summarize results of the monitoring from the project level in order to estimate overall effects of the SOPT to the relevant environmental objectives.
- To publish the results of monitoring;
- To ensure sufficient personnel and professional capacities for environmental areas within the SOPT monitoring;
- To involve the Ministry of Environment and Water into the discussion about the overall system of monitoring and especially the way of incorporating environmental issues into the overall system before it is launched;
- To ensure that the applicants are informed sufficiently about environmental issues and about possible links of the draft projects to the environment;
- To invite environmental NGos to take part in the monitoring committee(-s) established for the SOPT.

The whole monitoring system includes the following activities:

- Monitoring of environmental indicators (especially on the basis of aggregation of data from the project level)

- Examination of the monitoring results, i.e. revision of changes in environmental indicators
- Initiation of respective steps in case the SOPT negative environmental impacts were found
- Publishing of the results of monitoring;
- Selection and modifications of environmental indicators with respect to the character of the projects submitted;
- Communication with the respective assessment authority (Ministry of Environment and Water) and nature conservancy bodies as well as other authorities working in environmental protection
- Providing environmental consulting to people working in the SOPT implementation structure, i.e. especially to the members of evaluation and selection commissions
- Providing advisory services to entities submitting projects in the environmental field
- Providing information on environmental issues related to the SOPT to all parties interested

The SEA team's practical experience and knowledge show that, for a quality and effective system to monitor environmental effects of the operational programmes' implementation, several aspects are of key importance. These include exact focus, selection, review and possible modification of relevant environmental objectives for projects selection and evaluation and of related environmental indicators that were proposed within the SEA on the basis of contents of the single SOPT areas of intervention, and also in the context of the single projects submitted.

Annexes

Annex 1. List of the members of the Working Group for SEA of the SOPT

Lista membrilor desemnati in Grupul de Lucru pentru Evaluarea Strategica de Mediu a Programului Operational Sectorial de Transport 2007-2013

Institutia	Numele si prenumele persoanei de-semnate	Functia	Date de contact
MFP - AMCSC	Mariana SVES-TUN	consilier	Tel: 302.52.57 e-mail: mariana.svestun@mfinante.ro
MS	Adriana TUR-TUREAN	-	Tel: 307.25.24 ; 307.25.25 e-mail: adrianat@ms.ro
MMGA	Monica SERBAN	consilier	Tel: 316.67.00, Fax: 300.77.77 e-mail:monica.serban@mmediu.ro
	Constantin PUL-BERE	consilier	Tel: 316.61.54, Fax: 316.04.21 e-mail: constantin.pulbere@mmediu.ro
MAI – DGRP	Constanta BAR-JOVANU	-	Tel: 316.22.72 e-mail: constanta.barjovanu@mai.gov.ro
ANRMAP	-	-	-
MTCT - DGM	Camelia LUN-GOCI	consilier	Tel: 319.95.28 int 155, e-mail: zlibere@mt.ro
MTCT - DGTN	Monica PATRI-CHI	expert	Tel: 319.61.11, int 426, Fax 319.6106 e-mail: naval4@mt.ro
MTCT - DGITR	Mircea IONESCU	consilier	Tel: 319.95.65, int 455, Fax 313.99.54 e-mail: rutier4@mt.ro
MTCT - DGAvC	Daniela SANDU	consilier	Tel: 319.61.07 e-mail: daunt@mt.ro
MTCT - DGITF	Cornelia Magda-lena PARNIA	expert	Tel: 319.95.65, int 282, e-mail : news17@mt.ro
MTCT - DGATUPL	Anca GINAVAR	dir. gen.adj	Tel/Fax: 319.62.19, e-mail: antal@mt.ro
	Monica OREVI-CIANU	consilier	Tel/Fax: 313.88.94, e-mail monica@mt.ro
MTCT - DGRFE	Cristian MRISTEANU	expert	Tel:319.95.28, int 263, Fax: 319.61.27 e-mail: ispaf3@mt.ro
	Mariana NANU	consilier	Tel:319.95.28, int 263, Fax: 319.61.27 e-mail: ispaf4@mt.ro

Annex 2. Minutes of the scoping meeting for SOPT on the 11th of September, 2006 (in Romanian)

PROCES VERBAL

incheiat in urma intalnirii Grupului de lucru pentru Evaluarea Strategica de Mediu aferenta POS Transport, din data de 8 septembrie 2006

Participanti:

- Dna Florentina TEODOROVICI, dir.gen.adj. MTCT–DGRFE
- Dna. Anca GINAVAR, dir.gen.adj. MTCT- DGATUPL
- Dna. Monica OREVICIANU, consilier MTCT – DGATUPL
- Dna. Cornelia Magdalena PARNIA, expert, MTCT – DGITF
- Dna. Monica PATRICHI, expert, MTCT - DGTN
- Dna. Camelia LUNGOCI, consilier, MTCT – DGM
- DL. Cristian MARISTEANU, expert MTCT - DGRFE
- Dna. Mariana SVESTUN, consilier MFP – AMCSC
- Dna. Laura TROFIN, expert MFP- AMCSC
- Dl. Constantin PULBERE, consilier MMGA
- Dna. Luminita ANDREI, consilier MMGA
- Dna. Adriana TURTUREAN, inspector MS
- Dl. Adrian VALCAN, NEA Ex- Ante pr. team
- Dl. Martin SMUTNY, INTEGRA-SEA Team
- Dna. Ausra JURKEVICIUTE, key expert SEA
- Dl. Marin VALENTIN, Societatea Ornitologica Romana

In data de 8 septembrie a.c., s-a desfasurat la sediul MTCT, prima intalnire a Grupului de lucru pentru Evaluarea Strategica de Mediu pentru Programul Operational Sectorial de Transport 2007-2013.

Intalnirea de lucru a debutat prin cuvantul introductiv al dnei. Florentina Teodorovici, dir. gen. adj. MTCT-DGRFE, care a readus in atentie accentul Comisiei Europene pe aspectele de protectia mediului si dezvoltare durabila, subliniind importanta Evaluarii Strategice de Mediu pentru Programele Operationale supuse acestei evaluari (POS T, PO Regional, POS de Mediu, POS Competitivitate) si contributia Grupului de lucru SEA pentru POS T la elaboraerea Raportului de mediu aferent acestui program.

In continuarea intalnirii, dl. Martin Smutny, consultant in cadrul firmei contractate in cadrul proiectului Phare privind evaluarea ex-ante, a prezentat un material in format electronic in care a evidentiat aspectele cheie ale SEA (analiza legaturilor intre Programele Operationale si problemele cheie de mediu, corelarea obiectivelor de mediu SEA cu obiectivele de mediu cuprinse in cadrul POS T, monitorizarea implementarii programului supus SEA, necesitatea colaborarii intre AM - POS T si MMGA in vederea elaborarii Raportului de Mediu si supunerea acestuia consultarii publice).

De asemenea, un nou material in format electronic a fost prezentat de catre dna. Ausra Jurkeviciute, *key expert on SEA*, aratand metodologia procesului evaluarii strategice de mediu prin inglobarea experientei statelor UE (Spania, Regatul Unit, Cehia) si cu avizul DG Regio si DG Employment. S-a pornit de la ideea ca procesul de programare trebuie urmat indeaproape de evaluarea ex-ante si evaluarea strategica de mediu, ca procese similare ce pot fi derulate impreuna, in acest sens fiind necesara o buna colaborare intre echipa SEA si personalul implicat in programarea POS T. De asemenea, s-a mentionat faptul ca SEA trebuie sa se bazeze pe un set de indicatori exacti, urmare a analizarii contextului de mediu. S-au prezentat etapele recomandate a fi parcurse in procesul evaluarii strategice de mediu si a

elaborarii Raportului de mediu, avandu-se in vedere si impactul cumulativ al celor patru programme operationale supuse evaluarii SEA, inclusiv stabilirea unor criterii de mediu pentru monitorizarea si evaluarea implementarii POS T. In finalul procesului de valuare SEA, se va elabora Raportul de mediu care va fi avizat de membrii Grupului de lucru SEA pentru POS T si supus consultarii publice.

Totodata, dna. Ausra Jurkeviciute si-a exprimat convingerea ca intre «echipa SEA» si «echipa programare», precum si intre AM – POS Transport si MMGA, trebuie sa existe o colaborare stransa, cu cat mai multe consultari, chiar si prin e-mail. O noua sugestie venita din partea consultantilor a vizat publicarea pe site-ul oficial al MTCT a *draft*-ului Raportului de mediu.

In continuarea intalnirii, participantii si-au exprimat punctele de vedere asupra materialului pregătit de consultant referitor la problemele si obiectivele strategice de mediu si stabilirea relevantei acestora avand in vedere impactul lor negativ sau pozitiv, in cadrul axelor prioritare ale POS Transport (material anexat la procesul verbal). Aceste documente de lucru vor sta la baza elaborarii Raportului de Mediu aferent POST.

Reprezentantii MMGA si-au exprimat disponibilitatea de a sprijini consultantii in procesul evaluarii SEA prin furnizarea unor documente (strategii, legislatie) privind aspectele de mediu, avandu-se in vedere ca pana la momentul intalnirii de lucru consultantul a avut in vedere doar legislatia romana disponibila in limba engleza.

In finalul intalnirii, s-au prezentat multumiri celor prezenti pentru contributia adusa in cadrul exercitiului mai sus mentionat urmand ca eventualele sugestii si observatii suplimentare pe baza materialului supus analizei in cadrul intalnirii, sa fie transmise MTCT- DGRFE la adresa de e-mail dgrfe24@mt.ro, pana la data de 18 septembrie 2006, pentru a fi puse la dispozitia consultantului.

Intocmit: Cristian Maristeanu, expert

Annex 3. List of relevant national and international legal and policy documents

Env. issues	Relevant EU Legislation and Policies	Relevant Romanian Legislation and Policies
Water	• 91/271/EEC (Waste Water Treatment Plant) • 2000/60/EC (Water Policy) • 91/676/EEC (Nitrates) • 76/464/EEC (Dangerous Substances Discharged into the Aquatic Environment) • Stockholm Convention on POPs • 96/61/EC (IPPC)	• Water Law no. 107/1996 as amended by Law no.310/2004 and Law no.112/2006 • GD no. 351/2005 on the approval of the Action Program for reducing the pollution of aquatic environment and groundwater caused by the discharge of some dangerous substances (Of. J no. 428/20.05.2005), as amended by GD no.783/2006 (Of. J no. 562/29.06.2006; • EMO no. 1146/2002 (Of. J. no. 197/27.03.2002) on the surface water quality objectives; • GD no. 188/2002 (Of. J. no. 187/20.03.2002) on the approval of the norms regarding the wastewater discharge conditions in the aquatic environment, , as amended by GD no 352/2005 (Of. J. no. 398/11.05.2005). • Studies by the National Institute of Research and Development for Environmental Protection – ICIM Bucharest regarding the characterization of the vulnerability to groundwater pollution at hydrographical basin level (2001-2002)
Air	• 2001/80/EC (LCP) • 2001/81/EC (Emission Ceilings) • 96/61/EC (IPPC) • 98/70/EC, 99/32/EC (Fuels) • 94/63/EC, 99/13/EC (VOC) • 97/68/EC (Non-Road Mobile Machinery) • 99/30/EC (limit values for sulphur dioxide (SO2), nitrogen dioxide (NO2), nitrogen oxides (NOx), powders (PM10) and lead (Pb)); • 2000/3/EC concerning the ozone air pollution (O3) • 2000/69/EC concerning the limit values for benzene (C6H6) and carbon dioxide (CO). • Stockholm Convention on POPs • Gothenburg Protocol 1999 • 96/61/EC (IPPC)	• GD no. 731/2004 on the approval of the National Strategy for Atmosphere Protection (Of.J. no.496/02.06.2004) • GD no. 738/2004 on the approval of the National Action Plan for Atmosphere Protection (Of.J. no.476/27.05.2004) • Law no. 271/2003 for ratification of the Gothenburg Protocol • National Reducing Plan for sulphur dioxide and nitrogen oxides emissions and powders from large combustion plants and the measures take on account the conformation of the limit values for the emission, approved by Joint Ministerial Order MEWM 833/13.09.2005, MEC 545/26.09.2005 MAI 859/2005 (Of.J no.888/4.10.2005). • GD no. 568/2001 (Of. J. no. 348/29.06.2001) on setting up the technical requirements for limiting the VOC emissions resulting from storing, loading, unloading and distribution of petrol from terminals to service stations, amended by GD no.893/2005 • Order of the Minister of EWM no. 781/2004 on the approval of Methodological Norms regarding the measurement and analyses of volatile organic compounds resulted from storage and loading/ unloading of petrol at terminals (Of. J. no. 1243/23.12.2004); • Order of the Minister of Industry and Resources no. 337/2001 approving the Norms regarding the technical inspection of the installations, equipment and devices used for reducing VOC emissions resulted from storing, loading, unloading and distribution of petrol from terminals and service stations (Of. J. no. 10/10.01.2002), as amended by Order of the Minister of Economy and Commerce no.122/2005 (Of. J. no. 324/18.04.2005) • EGO no. 243/2000 on atmosphere protection (Of. J. no. 63/06.12.2000) adopted by Law no. 655/2001 (Of. J. no.773/04.12.2001). • DG no. 541/2003 amended and supplemented by GD 322/2005 on establishment of certain measures for limitation of emissions of certain pollutants into the air from large combustion plants through are

Env. issues	Relevant EU Legislation and Policies	Relevant Romanian Legislation and Policies
		transposed the provisions of Directive 2001/80/EC; • Order of the Minister of Environment and Water Management no. 592/2002 on the approval of the Norms regarding the establishing of the limit values, of the threshold values and of criteria and methods of assessment for sulphur dioxide, nitrogen dioxide and nitrogen oxides, particulate matters, (PM10 and PM2.5) lead, benzene, carbon monoxide and ozone in ambient air - (Of. J. no. 765/21.10.2002); • EGO no.152/2005 on prevention and integrated control of pollution approved by Law no.84/2006; • NEAP (1995, updated 1999). • National Sustainable Development Strategy (1999).
Soil	• 75/442/EEC (Framework Directive on Waste) • 99/31/EC (Landfill of waste) • 94/62/EC (on packaging and packaging waste), as amended by Directive 2004/12/EC • 91/689/EEC (Hazardous Waste) • 2000/76/EC on incineration of waste • Prepared Mining Waste Directive • Stockholm Convention on POPs • EC is a party to the Basle Convention, Regulation No. 259/93 (EC) • the Council Decision 2003/33 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 99/31/EC • 96/61/EC (IPPC)	• GD No349/2005 (Of. J. no 394/10.05.2005) on the landfill of waste • Order of the Minister of Environment and Water Management No 95/2005 on defining of the criteria which must be fulfilled by waste in order to be found on the specific list of a landfill and the National List of accepted waste for each class of landfill (Of. J. no 194/8.03.2005); • Order of the Minister of Environment and Water Management No 757/2004 on the approval of the Technical Norms regarding the landfill of waste (Of.J. no 86/26.01.2005). • GD no. 621/2005 (Of.J. no. 639/20.07.2005) on the management of packaging and packaging waste • GD no 128/2002 on the incineration of waste (Of.J. no. 160/07.03.2002), as amended by GD no 268/2005 (Of.J no.332/20.04.2005)
Climate change	• European Climate Change Programme • Decision No. 93/389/EEC for a Monitoring Mechanism of Community CO2 and Other Greenhouse Gas Emissions • Proposal of the Taxation of Energy Products Directive • Emission Trading Directive and Linking directive • UNFCCC and Kyoto Protocol	• EGO no.195/2005 on Environmental protection (Of. J. no. 1196/30.12.2005) approved by Law no. 265/2006 (Of. J. no. 586/06.07.2006) • Law no. 24/1994 (Of.J.no.119/ 12.05.1994) ratified the UN Framework Convention on Climate Change, (UNFCCC) • Law no.3/2001 (Of.J.no.81/ 16.02.2001) ratified the UNFCCC's Kyoto Protocol • National Strategy on Climate Change 2005-2007, approved by GD no.645/2005 (Of.J no.670/27.07 2005 • National Action plan on Climate Change 2005-2007, approved by GD no.1877/2005 (Of.J no.110/ 06.02.2006); • GD no. 731/2004 on the approval of the National Strategy for Atmosphere Protection (Of.J. no.496/02.06.2004) and • GD no. 738/2004 on the approval of the National Action Plan for Atmosphere Protection (Of.J.

Env. issues	Relevant EU Legislation and Policies	Relevant Romanian Legislation and Policies
		no.476/27.05.2004); • National GHG Inventory for the period 1992-2000 (2002); • National GHG Inventory for period 1992-2001 (2003); • National GHG Inventory for period 1989-2004 (2006)
Biodiversity	• 92/43/EEC (Habitats) • 79/409/EEC (Birds) • 78/659/EEC on the quality of fresh waters needing protection or improvement in order to support fish life • 79/923/EEC on the quality required for shellfish waters • COM(2006) 302 (on an EU Forest Action Plan 2007-2011); • EU is a party to the Convention on Biological Diversity (CBD) (1993)	• Law no. 5/2000 regarding the national system of protected areas (Of. J. no. 152/12.04.2000). • Law no. 462/2001 (Of. J. no. 433/2.08.2001) for the approval of the GO no. 236/2000 (Of.J. no. 625/04.12.2000) on natural protected areas regime, conservation of natural habitats and of wild fauna and flora; updated with Law no. 345/19.07.2006 (Of.J. no. 650/27.07.2006). • National Strategy and Action Plan for Biodiversity Conservation and Sustainable Use of Its Components (1996) • National strategic plan for agriculture and rural development, 2006 • Law no. 58/1994 ratified the Convention on Biological Diversity (CBD) • The Order of Minister of Environment and Water Management no. 370/19.06.2003 for Regulation on authorization system of laboratory for environmental assessment and their activities (Of.J. 756/29.10.2003). • GD no. 201/2002 on the approval of the technical Norms for the quality required for shellfish waters (Of. J. no. 196/22.03.2002).GD no. 202/2002 on the approval of the technical norms related to the quality of fresh waters needing protection or improvement in order to support fish life (Of. J. no. 196/22.03.2002). • GD no. 230/2003 (Of. J. no. 190/26.03.2003) on the delimitation of the biosphere reserves, national parks and natural parks and the setting – up of their administrations; • The Order of the Minister of Agriculture, Forests, Waters and Environment no. 850/2003 (Of. J. no. 793/11.11.2003) on the procedure of entrustment of administration or custody of the protected natural areas was issued, based on the GD no. 230/2003. • The Order of Minister of Agriculture, Forests, Waters and Environment no. 552/2003 (Of. J. no. 648/11.09.2003) for the approval of the internal zoning of national and natural parks from the point of view of the conservation of the biological diversity necessity; • G.D. no. 2151/2004 regarding the establishment of new protected areas (Of. J. no. 38/12.01.2005). • The Order of Minister of Environment and Water Management no. 246/22.07.2004 for the classification of caves as protected areas (Of.J. 732/13.08.2004). • The Order of Minister of Environment and Water Management no. 1198/25.11.2005 for the modification of annexes of Law no. 462/2001 for the approval of the GO no. 236/2000 (Of.J. 1097/6.12.2005). • G.D. no. 1581/2005 regarding the establishment of new protected areas (Of. J. no. 24/11.01.2006). • The Order of Minister of Environment and Water Management no. 207/3.03.2006 for the approval of the Standard Data Form and the manual for Natura 2000 (Of.J. 284/29.03.2006).
Human health	• 98/83/EC (Quality of water intended	• Law no. 458/2002 (Of. J. no. 552/29.07.2002) on the quality of drinking water

Env. issues	Relevant EU Legislation and Policies	Relevant Romanian Legislation and Policies
	for human consumption) • 80/68/EEC (protection of ground water against pollution caused by certain dangerous substances) • Directive 99/31/EC (Landfill of waste) • 75/442/EEC (Waste regime) • 2000/14/EC (Noise) • the action plan of the EU Community Public Health Program for 2003-2008, which was adopted by Decision No. 1786/2002 of the European Parliament and Council • WHO (1998) The "Health for All in 21st Century" Strategy; • WHO: Transport and Health; • WHO: Environment and health indicators; • WHO: Air Quality Guidelines • European Sustainable Cities • European Regional/Spatial Planning Charter ('Torremolinos Charter'), adopted in 1983 by the European Conference of Ministers responsible for Regional Planning (CEMAT) • The European Commission Green Book for the future policy on noise, (1996) • Aalborg Charter	• GD no. 351/2005 on the approval of the Action Plan for reduction of the pollution of aquatic environment and groundwater, caused by the discharge of certain dangerous substances (Of. J. no. 428/20.05.2005), as amended by GD no.783/2006(Of. J no. 562/29.06.2006). • National Waste Management Plan • Water Law no. 107/1996, as amended by Law no.310/2004 and Law no.112/2006 • GD no. 188/2002 (Of. J. no. 187/20.03.2002) on the approval of the norms regarding the wastewater discharge conditions in the aquatic environment, as amended by GD no 352/2005 (Of. J. no. 398/11.05.2005); • GD No 539/2004 (Of. J. No 398/05.05.2004) on the limitation of noise emission in the environment by equipment for use outdoors transposes Directive no. 2000/14/EC, as amended by GD no.1323/2005 (Of.J.no.1048/25.11.2005); • DG no 321/2005 for reassessment and management of the environmental noise • Annually report national synthesis of healthcare waste management 2005 • DG no 536 of the 23rd of June 1997 on approving the Norms on hygiene and reccomendations regarding the life environment of population - in change (project proposal) • ORDIN nr.536 din 23 iunie 1997pentru aprobarea Normelor de igiena şi a recomandarilor privind mediul de viata al populatiei- in curs de modificare (propunere de proiect) - for approving the Norms on hygiene and reccomendations regarding the life environment of population - in change (project proposal) • Propunere de proiect : Normele de igienă pentru transporturile de persoane -Art. 2 - La data intrării în vigoare a prezentului ordin se abrogă Capitolul 8 - Norme de igiena pentru transporturile de persoane din Ordinul ministrului sănătăţii nr. 536/1997, pentru aprobarea Normelor de igiena şi a recomandărilor privind mediul de viaţă al populaţiei, publicat în Monitorul Oficial al României, nr. 140 din 03 iulie 1997. • ORDIN nr.1.028 din 18 august 2004 al ministrului sănătăţii pentru modificarea şi completarea Ordinului ministrului sănătăţii nr. 536/1997 pentru aprobarea Normelor de igienă şi a recomandărilor privind mediul de viaţă al populaţiei • HOTĂRÂRE nr.88 din 29 ianuarie 2004 pentru aprobarea Normelor de supraveghere, inspecţie sanitară şi control al zonelor naturale utilizate pentru îmbăiere • ORDIN nr.923 din 16 iulie 2004 al ministrului sănătăţii privind aprobarea Strategiei naţionale de sănătate publică • HOTĂRÂRE nr.734 din 7 iunie 2006 pentru modificarea Hotărârii Guvernului nr. 124/2003 privind prevenirea, reducerea şi controlul poluării mediului cu azbest
Environmental risk management	• 2000/60/EC (Water framework directive); • COM/2000/547 (Integrated Coastal Zone Management: a Strategy for Europe;	• GO no 47/1994 on defence against disasters, approved by the Law no 124/1995, with further amendments, • Law no 106/1996 on civil protection, with further amendments (Of. J. no. 241/03.10.1996), • Law no.111/1996 with further amendments (Of.J. no. 267/29.10.1996), • MO no.242/1993 (Of.J. no.195/13.08.1993).

Env. issues	Relevant EU Legislation and Policies	Relevant Romanian Legislation and Policies
	• COM/2004/472 (Flood risk management - Flood prevention, protection and mitigation); • COM/2002/481 (The EC response to the flooding in Austria, Germany and several applicant countries); • COM/2004/60 (Towards a thematic strategy on the urban environment); • COM/2002/179 (Towards a Thematic Strategy for Soil Protection); • 1999/847/EC (Community action programme in the field of civil protection)	• National strategy for flood risk management (2005) • Draft master plan and the programme for Black Sea Coast protection (to be completed in 2006)
Resource efficiency and conservation/sustainable resource management	• 75/442/EEC (Framework directive on waste) • EC is a party to the Basle Convention, Regulation No. 259/93 (EC) • 91/689/EEC (Hazardous Waste) • 94/62/EC (Packaging Waste) • Thematic Strategy on the sustainable use of natural resources (COM(2005)670 final) • 96/61/EC (IPPC)	• GO no 78/2000 (Of.J. no.283 /22.07.2000)on regime of waste approved by the Law no 426/2001(Of.J. no 411 /25.07.2001), with further amendments • Law 6/1991 (Of.J. no 18 /26.01.1991), for adhering of Romania to Basel convention, amended by Law 256/2002 (Of.J. no 352 /27.05.2002) • GO no 200/2000 (Of.J. no. 593/22.11.2000), modified through GD 490/2002 (Of.J. no.356/285.05.2002) • GD no 349/2002 regarding on packaging and packaging waste, modified through GD no 621/2005 (Of.J. no.621/20.07.2005) • GO no 34/2002 (Of.J. no. 223/03.04.2002), modified through GO 152/2005 (Of.J. no.1078/30.11.2005) • National Waste Management Plan (2004)
Landscape and cultural heritage	• European Landscape Convention	National Spatial Plan (NSP): • Section I - Means of Transport and Communication, approved under Law 71/1996 (under revision); • Section II - Water, approved under Law 171/1997; • Section III - Protected areas, approved under Law 5/2000; • Section IV - Settlement network, approved under Law no. 351/2001; • Section V - Natural risk areas, approved under Law no.575/2001; • National Strategic Plan for Agriculture and Rural Development 2007-2013 (2006)
Energy efficiency and renewable energy sources	• COM(2005)265 (Green Paper on energy efficiency) • Directive 92/42/EEC as amended by Directives 93/68/EEC and 2004/8/EC efficiency of boilers • Directive 93/76/EEC – SAVE • Directive 96/61/EC (IPPC)	• The Road Map for Energy in Romania - GD No. 890/2003 • National Strategy for Energy Efficiency - GD No. 163/2004 and Law No.199/2000, amended by the Law 56/2006; • GD no.174/2004 regarding the thermal rehabilitation of buildings • GD no. 574/2005 on efficiency requirements for new hot-water boilers fired with liquid or gaseous fuels • GD no. 958/2005 amending GD no. 443/2003 on the promotion of electricity produced from re-

Env. issues	Relevant EU Legislation and Policies	Relevant Romanian Legislation and Policies
	• Directive 2001/77/EC (Promotion of Electricity Produced from Renewable Energy Sources) • Directive 2002/91/EC – energy performances of the buildings • Directive 2003/66 – eco-labelling for refrigerators • Directive 2003/54/EC – internal market on electricity • Directive 2003/30/EC - on promoting the utilization of bio-fuels and other renewable fuels for transport • Directive 2006/32/EC (energy end-use efficiency and energy services) • COM(2002)415 –cogeneration directive; • Proposal of the Taxation of Energy Products Directive	newable energy sources and amending and completing Government Decision no 1892/2004 establishing the promotion system for electricity produced from renewable energy sources • GD No. 1535/2003 The Strategy for the capitalization of renewable energy resources, approved by GD No. 1535/2003 • GD no. 1844/2005 on promoting the utilization of bio-fuels and other renewable fuels for transport • The commitments assumed by Romania in the process of negotiations with the EU –Chapter 14 Energy. • Draft GD for approval of the National Energy Policy Document 2005-2008 • The commitments assumed by Romania in the process of negotiations with the EU –Chapter 14 Energy.
Awareness raising on environmental issues	• 90/313/EEC (Access to Information) • Agenda 21 • EC is a signatory of the Aarhus Convention (UN EEC Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters)	• National strategy for climate change, 2005 • Law no. 86/2000 (Of.J. no.224/22.05.2000) for the ratification of the Convention on access to information, public participation indecision-making and access to justice in environmental matters; • Law no. 544/2001 (Of.J. no.663/23.10.2001) on free access to the public interest information; • GD no.123/2002 (Of.J. no.167/03.08.2002) on approving methodological norms for the implementation of Law no. 544/2001 on free access to information of public interest; • GD no.878/2005 (Of.J no.760/22.08.2005) on the free access to environmental information; • GD no. 658/2006 on reorganization of National Commission for Climate Change (an inter-ministerial body coordinated by the MEWM in order to promote the necessary measures for unitary implementation in Romania of the UNFCCC and Kyoto Protocol objectives) Of.J.no.465/30.05.2006;
Sustainable transport	• the Cardiff conclusions of the European Council (1998) • the European Strategy for Sustainable Development (Gothenburg 2001)	• National Sustainable Development Strategy (1999)

Reference objectives also respect the requirements of the following documents:

- COM(2001)31 - 6th Environment Action Programme;
- 97/11/EC (EIA)

- MO of Waters and Environmental Protection no. 860/2002 (Of.J. no.52/03.01.2003) on the approval of the procedure for environmental impact assessment and issue of the environmental agreement;
- GD no. 918/2002 (Of.J.no.686/17.09.2002) establishing the framework procedure for the environmental impact assessment and approving the list of public and private projects which the procedure must be applied, as amended by GD no.1705/2004 (Of.J no. 970/2004)
- GD no. 1076/8.07.2004 for setting up the environmental assessment procedure of certain plans and programmes (Of.J.no.707/5.08.2004)

Annex 4. Assessment of specific objectives of SOPT

The assessment was focused on the likely environmental effects of the SOPT specific objectives to the relevant environmental objectives. It was done in a form of comments, explaining what effects (both positive and negative effects) might be caused by the implementation of the SOP's specific objective and resulted in a possible reformulation of specific objectives and priority axes.

Specific objective 1: Promote international and transit movements of people and goods in Romania by providing effective connections of the port of Constanta, as well as Greece, Bulgaria and Turkey, with the EU through the modernization and development of the relevant TEN-T priority axes		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Maintain and improve the quality of ambient air within the limits set by the legal norms	-The levels of emissions per passenger-km and per tone-km. -Will it reduce of the emissions of acidifying pollutants? -Will it reduce emissions of fine particles (PM)?	The construction of TEN-T infrastructure is likely to cause intensification of car traffic (and so increase air pollution) in specific areas. On the other hand, the development of railway transport significantly contributes to the reduction of pollution if appropriate infrastructure is supported and transit points are installed.
Minimize the transport impacts on the air quality at rural and urban level	-Will it contribute to the reduction of air pollutants in urban and rural areas?	The development of TEN-T infrastructure could lead to the improvement of air quality in urban areas by shifting car traffic from inside to outside of the cities. Reduced pollution along the new routes or detoured routes can be achieved if less polluting fuel is used or the monitoring of vehicle emissions is introduced. Clear minimization of air pollution and improved air quality will be achieved only if rail transport is promoted and developed.
Limit water pollution from point and diffuse pollution sources	-Will water pollution levels due to transport activities be diminished? - Surface affected - Water quality	The development of TEN-T infrastructure could lead to improved transport of dangerous goods and therefore reduce risk of accidents. Water pollution will be increased due to new road surfaces and lesser run offs from the roads. Improved water transport infrastructure will have a positive effect.

Specific objective 1: Promote international and transit movements of people and goods in Romania by providing effective connections of the port of Constanta, as well as Greece, Bulgaria and Turkey, with the EU through the modernization and development of the relevant TEN-T priority axes		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Limit point and diffused pollution of soil	Water and soil quality	Negative impact may take place on soil due to traffic intensification on the roads by emissions from vehicles. Soil pollution around the railway tracks due to traffic intensification may increase.
Decrease GHG emissions from transport	The levels of CO2 equivalent	The development of TEN-T infrastructure may lead to the intensification of car traffic and so to significant increase in GHG emissions. Highways reduce traffic congestion but pollution (local and overall) is increasing because more cars. Development of TEN-T will total fuel consumption. Impact may be reduced if railway, cleaner fuels, and bio-fuels are introduced and promoted.
Protect and improve the conditions and functions of terrestrial and aquatic eco-systems against anthropogenic degradation, habitat fragmentation and deforestation	-Will the construction of new roads protect the natural habitats? -The surface of land take (national %, currently less than 1%)	The development of TEN-T infrastructure will cause further habitat and landscape fragmentation. It's necessary to pay attention to mitigation measures which should be implemented in parallel with the construction of transport infrastructure, such as animals crossing corridors, by-passes and reforestation along the roads. The projects have to be accompanied with EIAs to ensure minimization of the negative effects.
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites	-Which architectural sites and Natura 2000 areas will be affected by the construction and development of the TEN-T infrastructure?	The development of TEN-T infrastructure will cause further habitat fragmentation, will affect wild life, flora and fauna, natural sites. It's necessary to pay attention to mitigation measures which should be implemented in parallel with the construction of transport infrastructure, such as diversion of traffic, etc. The projects have to be accompanied by EIAs in order to ensure minimization of the negative effects and to offer the alternative options for new roads development.

Specific objective 1: Promote international and transit movements of people and goods in Romania by providing effective connections of the port of Constanta, as well as Greece, Bulgaria and Turkey, with the EU through the modernization and development of the relevant TEN-T priority axes		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Facilitate improvement of human health by implementing measures aimed at pollution prevention	- The number of people with respiratory diseases caused by transport pollution	The development of TEN-T infrastructure could lead to the improvement of air quality in urban areas by shifting car traffic outside of the cities (if the bypasses are built)
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration	-Will it facilitate improvement of human health? -What kind of measures will be applied for protecting population against noise and vibrations?	Better transport infrastructure may reduce noise and vibration pollution. There may be an increase in noise in the rural areas along the motorways and railways. Precautionary measures are important.
Increase population protection against risks associated with traffic accidents	-Will it facilitate the reduction of transport accidents? -Number of people dying in the road accidents per year -What kind of measure will be applied for protecting population against traffic accidents?	The development of TEN-T infrastructure could lead to the improvement of transport conditions and diminish the number of accidents if special installations and safety measures are applied properly.
Increase population protection from risk associated with natural disasters and industrial accidents caused by transportation	-Will it provide a better connectivity to the areas which are prone to natural disasters in order to evacuate people if necessary? -Will it help reduce risk associated with traffic accidents if hazardous substances are involved?	The development of TEN-T infrastructure could lead to the improvement of transport conditions and diminish the number of accidents caused by the transportation of dangerous goods. Positive effect may be increased if connectivity and rapid access to the risk areas for natural disasters are ensured.

Specific objective 1: Promote international and transit movements of people and goods in Romania by providing effective connections of the port of Constanta, as well as Greece, Bulgaria and Turkey, with the EU through the modernization and development of the relevant TEN-T priority axes		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Limit use of different natural resources used in transport sector	- total energy consumption by transport in Romania as well as by transport more; -Percentage of vehicles on the roads without converters	The development of TEN-T infrastructure could lead to the improvement of transport conditions so the use of fuel per km may decrease. Construction and modernization of the networks will increase the use of natural resources due to intensification of traffic
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste	-Will it encourage the recycling of waste due to transport activity, including old cars? -Will it prevent transport waste generation and promote reuse or recycle as much scrap material as possible?	Improved roads will lead to more cars being purchased and may increase car waste, so impact can be significant, which can be minimized if state incentives for car recycling are introduced
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors	Will landscape fragmentation minimizing measures be supported within the SOPT?	The development of TEN-T infrastructure will cause further landscape fragmentation. It's necessary to pay attention to mitigation measures which should be implemented in parallel with the construction of transport infrastructure, such as reforestation, bypasses that protect important cultural and natural landscape areas, etc.
Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including aquatic and terrestrial ecosystems) and cultural heritage in order to achieve the sustainable development of the region	How the development of sea and river ports will affect the eco-systems and cultural heritage	Development of port infrastructure may improve the eco-systems indirectly through better environmental infrastructure (such as availability of WWTPs, marine pollution reduction measures, etc.). At the same time development of the TEN-T may have negative impact on the landscape through measures to increase the navigation of the Danube and its channels.

Specific objective 1: Promote international and transit movements of people and goods in Romania by providing effective connections of the port of Constanta, as well as Greece, Bulgaria and Turkey, with the EU through the modernization and development of the relevant TEN-T priority axes		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Improve energy efficiency and use of energy resources	Will it reduce energy use per passenger-km and per ton-km?	The development of TEN-T infrastructure could lead to the improvement of transport conditions and diminish the fuels consumption, so, implicit the natural resources.
Facilitate energy generation from renewable resources	Will it enable use and production of bio-fuel by international and transit transport?	If appropriate measures are planned there may be an improvement in production and usage of bio-fuel in Romania.
Improve environmentally-responsible behaviour of the public by promoting usage of public transport and other environmentally friendly means of transport (e.g. cycling, walking)	Will it enable increase in usage of rail and other PT means? How will it enable the use of alternative means such as cycling?	Improvements of the railway infrastructure may lead to an increase in the usage of trains for long distance travel, therefore indirect positive effect may be achieved. Improved travel conditions and facilities are necessary to encourage a preference for trains. If national infrastructure is improved, that may be a positive effect on cross country cycling and international bicycle tourism. Measures enabling cycling have to be planned and supported
Develop environmentally friendly transport (especially public transport system and multi modal transport)	Will it ensure access to basic services using environmentally-friendly modes?	The development of TEN-T infrastructure will require the improvement of inter modal transportation. Railway infrastructure modernization could contribute to the availability and promotion of an environmental friendly transport.
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)	Will it encourage the recovery of the full costs of transport, including externalities, from users?	The construction of TEN-T infrastructure will cause intensification of car traffic (and consequently increase air pollution) in specific areas. On the other hand the development of railway transport could improve the situation in that field, and indirectly decrease those costs.
Reduce the intensity of the car traffic	Number of km per person	The opposite will happen, the car traffic will increase given better road conditions. Railway transport's improvement may lead to reduction in the intensity of car traffic.

Specific objective 1: Promote international and transit movements of people and goods in Romania by providing effective connections of the port of Constanta, as well as Greece, Bulgaria and Turkey, with the EU through the modernization and development of the relevant TEN-T priority axes		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Proposed reformulation of proposed specific objectives: Promote international and transit movements of people and goods in Romania by providing effective connections of the port of Constanta, as well as **transit transport from EU to the south** through the modernization and development of the relevant TEN-T priority axes **applying necessary environmental measures**		

Specific objective 2: Promote effective movement of persons and goods among Romanian regions and their transfer from the hinterland to priority axes by modernizing and developing national and TEN-T networks		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Maintain and improve the quality of ambient air within the limits set by the legal norms	-The levels of emissions per passenger-km and per tone-km.	The development and modernization of the national transport infrastructure may cause intensification of car traffic (and so increase air pollution) in specific areas. On the other hand the development of railway, inland water and air transport could improve the situation. Modernization and development of national road infrastructure will lead to increased traffic and raise the level of emissions, as well as it may enable faster and more user-friendly PT.
Minimize the transport impacts on the air quality at rural and urban level	Will the actual development program, really improve the air quality?	Developing and modernizing the national transport infrastructure could lead to the improvement of air quality in urban areas by improving the transport conditions. Improving railway infrastructure could reduce the road traffic between locations but, this depending very much on the prices practiced. Better road infrastructure, which would enable faster public transport in the cities, may have a significant positive effect if supported under this objective with measures such as PT priority lanes, transit points for various PT modes, connection to intercity PT, such as rail, etc.

Specific objective 2: Promote effective movement of persons and goods among Romanian regions and their transfer from the hinterland to priority axes by modernizing and developing national and TEN-T networks		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Limit water pollution from point and diffuse pollution sources	Water quality	The measures will lead to the improvement of transport conditions for dangerous goods as well as for runoffs and collection of water from paved surfaces. Modernization and development of river and maritime ports will increase water pollution in specific areas if parallel protection measures are not developed through the same projects. EIA should ensure that water pollution is minimized.
Limit point and diffused pollution of soil	Soil quality	Due to increased run offs from the paved surfaces, there may be increased soil pollution in the vicinity of the new and old routes.
Decrease GHG emissions from transport	The levels of equivalent CO2 emissions	Developing and modernizing the national transport infrastructure may cause intensification of car traffic and it will increase GHG emissions in specific areas. Development of road infrastructure as well as ports and air transport infrastructure will increase the number of cars, boats and flights, all of them using fossil fuel that generate GHG. Promotion of and investments into railway and alternative transport infrastructure would have a minimizing effect.
Protect and improve the conditions and functions of terrestrial and aquatic eco-systems against anthropogenic degradation, habitat fragmentation and deforestation	-Will the construction of new roads protect the natural habitats? -The surface of land take per transport unit; -Measures for protection of habitats in infrastructure development	Developing and modernizing the national transport infrastructure will have an impact on habitat and landscape fragmentation. It's necessary to pay attention to mitigation measures which should be implemented in parallel. Projects have to be accompanied by EIAs in order to ensure minimization of the negative effects and to offer the alternative options for new roads development.

Specific objective 2: Promote effective movement of persons and goods among Romanian regions and their transfer from the hinterland to priority axes by modernizing and developing national and TEN-T networks		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites	-Which protected species will be affected by the construction of the new routes and development of infrastructure? -Which Natura 2000 sites will be affected by the construction of the new routes?	Developing and modernizing the national transport infrastructure will have an impact on wild life, flora and natural sites. It's necessary to pay attention to mitigation measures which should be implemented in parallel with the construction of transport infrastructure. Ports development on the Danube river is of high importance, because the entire area is protected. Modernization of river ports and river beds for shipping will directly impact habitats of aquatic systems. Projects must be accompanied by EIAs to ensure the minimization of the negative effects and to offer the alternative options for new roads development.
Facilitate improvement of human health by implementing measures aimed at pollution prevention	-Will it facilitate the improvement of human health? -The number of people with respiratory diseases	Developing and modernizing the national transport infrastructure could lead to the improvement of air quality in urban areas by shifting traffic from the cities and enabling faster and more efficient movement of cars. Development and usage of railways would have a significant positive effect therefore such measures should be a priority.
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration	-Will it facilitate the reduction of transport noise and vibration?	Developing and modernizing the national transport infrastructure could lead to the reduction of noise in urban or rural areas by offering better transport conditions, facilitating PT and shifting traffic outside from the cities. Measures to specifically reduce noise and vibration from traffic should have a priority to maximize the positive effect.
Increase population protection from risks associated with traffic accidents	-Will it lead to the reduction of transport accidents? -Number of accidents per year with deceased victims	Developing and modernizing the national transport infrastructure could lead to the improvement of transport conditions and diminish the number of accidents. Improved infrastructure will lead to increased traffic and bigger exposure to accidents risk.

Specific objective 2: Promote effective movement of persons and goods among Romanian regions and their transfer from the hinterland to priority axes by modernizing and developing national and TEN-T networks		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Increase population protection from risk associated with natural disasters and industrial accidents caused by transportation	-Will it help reduce the risk associated with natural and industrial disasters? -Number of oil spills into water inland waters	Developing and modernizing the national transport infrastructure could lead to the improvement of transport conditions and diminish the number of accidents caused by the transportation of dangerous goods. Accessibility to areas exposed to risks of industrial accidents and natural disasters will be improved and therefore positive effect is expected.
Limit use of different natural resources used in transport sector	-Total energy consumption by transport by modes	Developing and modernizing the national transport infrastructure could lead to the improvement of transport conditions and diminish fuel consumption and, implicitly, the use of natural resources. Modernization and development of the transport infrastructure will lead in the same time to an increased use of natural resources during the process and due to the increased traffic. Mitigation measures are necessary.
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste	-Will it encourage the recycling of waste resulted from increased transport activity, including old cars? -Will it prevent transport waste generation and promote the reuse or recycle of as much scrap material as possible?	It may facilitate increased waste due to old vehicles' use. Some positive effect may appear if the reutilization of construction waste is facilitated for the construction of new roads and railroads.

Specific objective 2: Promote effective movement of persons and goods among Romanian regions and their transfer from the hinterland to priority axes by modernizing and developing national and TEN-T networks		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors	-Will measures minimizing the habitat fragmentation be supported within the SOPT?	Modernization of the national transport infrastructure will have minor effect on the habitat and landscape fragmentation, but the development of new corridors will increase the habitat fragmentation. Mitigation measures should be implemented in parallel with the development of transport infrastructure. Modernization and development of river and maritime ports will have a big impact on natural and cultural landscape especially on the Danube river.
Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including aquatic and terrestrial ecosystems) and cultural heritage in order to achieve the sustainable development of the region	-Which new marine and river ports will be constructed or significantly extended? -What will be the coverage area of the new facilities?	The objective may have a significant impact if modernization of old and the development of new river and maritime ports will take place, as it may have a big impact on natural and cultural landscape. Clear protection measures are necessary.
Improve energy efficiency and use of energy resources	-Will it reduce energy use per passenger-km and per tone-km?	Developing and modernizing the national transport infrastructure could lead to the improvement of transport conditions and diminish the fuel consumption and, implicitly, the use of natural resources. But, due to traffic intensification the energy use will increase.
Facilitate energy generation from renewable resources	- amount of bio-fuel sold for transport use	If the RES are promoted by introducing the necessary infrastructure, there may be a significant positive effect. Without the infrastructure, use of bio-fuel as well as production for transport purpose will not take place. The effect may take place only if there is a strategic approach to support and development of bio-fuel.

Specific objective 2: Promote effective movement of persons and goods among Romanian regions and their transfer from the hinterland to priority axes by modernizing and developing national and TEN-T networks		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Improve environmentally-responsible behaviour of the public by promoting usage of public transport and other environmentally friendly means of transport (e.g. cycling, walking)	Increase in passenger km by rail;	Modernization and development of train transport may trigger an increase of trips and passengers on railways and will have a positive effect. If renovation or construction of national roads is accompanied by bicycle roads, this will have significant positive effect.
Develop environmentally friendly transport (especially public transport system and multi modal transport)	-Will it ensure access to basic services by environment-friendly modes? -Length of bicycle roads constructed	The development and modernization of the national transport infrastructure will lead to the improvement of inter modal transportation as well as use of alternative transport means such as cycling.
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)	-Will it encourage the recovery of the full costs of transport including externalities from users?	Developing and modernizing the national transport infrastructure can cause intensification of car traffic (and so increase of air pollution) in specific areas. On the other hand, bypasses and shifting movement of passengers and goods to railway transport will have a positive effect. Development of all transport modes except rail will increase the external costs related to the env.
Reduce the intensity of the car traffic		Potential negative effect may appear due to increased car traffic intensity, given better road conditions. Investments into railways will have a positive effect.
Proposed reformulation of proposed specific objectives: Promote effective movement of persons and goods among Romanian regions and their transfer from the hinterland to priority axes by modernizing and developing national and TEN-T networks **according to sustainable development principles.**		

Specific objective 3: Promote the development of a balanced transport system of modes, based on the respective competitive advantage of each, by encouraging the development of rail, waterborne and inter modal transport		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Maintain and improve the quality of ambient air within the limits set by the legal norms	-The levels of emissions per passenger-km and per tone-km.	Improving the rail fleet will encourage its usage and improve env. quality by reducing air pollution from several areas. Development of rail, water and inter-modal transport will contribute to improving air norms in the areas where pollution due to transport exceeds norms, e.g. cities and transport intersections.
Minimize the transport impacts on the air quality at rural and urban level	-Will the actual development program, really improve the air quality?	Development of rail, water and inter-modal transport will contribute to limiting air pollution caused by cars.
Limit water pollution from point and diffuse pollution sources	Reduction in emissions from ports and ships to water	Development and intensification of water transport may lead to more water pollution if no precautionary measures are taken. Development of ports environmental infrastructure may have a significant positive long term effect
Limit point and diffused pollution of soil	Improved waste management in ports; Soil quality along the rail routs	Some impact may be expected due to traffic intensification and extension. Improvement of waste management practices in ports and inter-modal stations will have a positive effect.
Decrease GHG emissions from transport	The levels of equivalent CO2 emissions	Improving the rail fleet will encourage the transport with less pollutant modes, so it will reduce the air pollution. Increased use of railway and water transport will contribute to GHG emissions reduction.
Protect and improve the conditions and functions of terrestrial, and aquatic ecosystems against anthropogenic degradation, habitat fragmentation and deforestation	Land take in Romania (%, change); Cleared areas of forest and greenfields for new infrastructure development (ha)	River ecosystems may be negatively affected if new routes are opened for navigation and if traffic intensifies on the existing routes. Opening of new routes may cause habitat fragmentation and deforestation. Before the development, EIAs have to be carried out identify the best possible alternatives and technologies to minimize the effects.

Specific objective 3: Promote the development of a balanced transport system of modes, based on the respective competitive advantage of each, by encouraging the development of rail, waterborne and inter modal transport		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites	-Natura 2000 sites affected	Negative effect may occur if new routes are to be developed in/near the Natura 2000 sites. Special attention should be given to mitigation measures therefore EIA have to be carried out.
Facilitate improvement of human health by implementing measures aimed at pollution prevention	-Will it facilitate the improvement of human health? -The number of people with respiratory diseases decreases	Improving the rail fleet will encourage the transport with a less pollutant mode, so it may indirectly protect human health.
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration	-Will it reduce noise and vibration?	Improving the rail fleet will encourage the transport with less pollutant modes, so it has a potential to reduce noise and vibration in some areas. Bigger number of persons travelling by train instead of using cars will have an indirect positive effect too.
Increase population protection from risks associated with traffic accidents	-Will it facilitate the reduction of transport accidents? -Number of people deaths per year per each type of transportation	Improving the rail and water transport infrastructure will lead to safer transportation of people
Increase population protection from risk associated with natural disasters and industrial accidents caused by transportation	-Will it contribute to the protection? -Will it help reduce risk associated with natural and industrial disasters?	Improving the railway fleet will lead to safer transportation, including the transportation of the dangerous goods. It may improve access to the areas impacted by natural and industrial disasters. safer and upgraded water transport will have a positive effect, since old ships are prone to leakages and water pollution as well as accidents involving large spills of oil and dangerous chemicals.

Specific objective 3: Promote the development of a balanced transport system of modes, based on the respective competitive advantage of each, by encouraging the development of rail, waterborne and inter modal transport		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Limit use of different natural resources used in transport sector	-How reduction in the use of natural resources will be achieved	Development and usage of transport will always have a negative effect on resources use since it depends on the natural resources. Balanced system development may improve the use of natural resources. If more passengers and goods are transported by railway, there will be a reduction in the use of natural resources (per passenger and tone).
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste	-Will it encourage the recycling of waste due to transport activity, including old trains? -Will it prevent transport waste generation and promote the reusing or recycling of as much scrap material as possible?	The change/improvement of rail fleet and the refurbishment of the existing infrastructure will generate a lot of waste and scrap material but, in the same time, this can be further recycled and reused for the new constructions works. There is a large potential for waste reduction and recovery.
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors	Land take in Romania by transport sector	Some impact may be expected if new routes are needed to ensure intermodal transport connection. Projects have to be accompanied by EIAs in order to ensure the minimization of the negative effects.
Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including aquatic and terrestrial ecosystems) and cultural heritage in order to achieve the sustainable development of the region	- how the protection of terrestrial ecosystems and cultural heritage will be ensured?	Development of water transport may affect marine and delta ecosystems. Precautionary measures must be taken. The projects have to be accompanied by EIAs in order to ensure minimization of the negative effects.
Improve energy efficiency and use of energy resources	-Will it reduce energy use per passenger-km and per tone-km?	Improving the rail fleet will encourage the reduction of energy and fuel consumption. Improved energy efficiency per passenger may be expected.
Facilitate energy generation from renewable resources	-Total quantity of bio-fuels sold in Romania	If new types of trains or water machinery running on bio-fuel will be introduced, it may encourage energy generation from renewable resources.

Specific objective 3: Promote the development of a balanced transport system of modes, based on the respective competitive advantage of each, by encouraging the development of rail, waterborne and inter modal transport		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Improve environmentally-responsible behaviour of the public by promoting usage of public transport and other environmentally friendly means of transport (e.g. cycling, walking)	-Will it encourage the railway transport?	Modern and new railway vehicles could increase the attractiveness of the train transportation and promote its use and, implicitly, a more environmentally responsible behaviour by shifting from cars to railways use.
Develop environmentally friendly transport (especially public transport system and multi modal transport)	-Will it ensure access to basic services with environment-friendly modes?	Modern and new rail vehicles could increase the attractiveness of the rail transportation, which is more environmentally friendly than other modes. Improved railway transport is necessary.
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)	-Will it encourage full recovery of the transport costs, including externalities from users? - Number of fatalities on the roads	Modern and new rail vehicles could increase the attractiveness of the rail transportation, which is more environmentally friendly and has smaller external costs than other modes.
Reduce the intensity of the car traffic		Significant improvement in transport services provided by rail and water may decrease the intensity of intercity car travels as well as international travels by shifting them to trains and water born transport.
Proposed reformulation of proposed specific objectives: n/a		

Specific objective 4: Promote sustainable development especially by minimizing adverse effects of transport on the environment and improving safety.		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Maintain and improve the quality of ambient air within the limits set by the legal norms	-The levels of emissions per passenger-km and per tone-km.	The promotion of the environmentally friendly modes and introduction of inter – modal transport will reduce the air pollution, especially if such transport is developed in areas with air pollution norms exceeding the limits.
Minimize the transport impacts on the air quality at rural and urban level	-Air quality data	The promotion of the environmentally friendly modes and environmental measures will improve the air quality.
Limit water pollution from point and diffuse pollution sources	-Water pollution levels due to transport activities will be diminished? -Water quality	Development of environmental measures along the transport routes will lead to the reduction of the pollution effects.
Limit point and diffused pollution of soil		Development of environmental measures along traffic routes will reduce the pollution effect on soil.
Decrease GHG emissions from transport	The levels of equivalent CO2 emissions	The promotion of the environmentally friendly modes and development of environmental measures will likely to contribute to the reduction of the GHG emission.
Protect and improve the conditions and functions of terrestrial and aquatic eco-systems against anthropogenic degradation, habitat fragmentation and deforestation	-Will terrestrial and aquatic ecosystems be affected?	The improvement and development of sustainable transport is the only way to maximize the protection of terrestrial, aquatic and marine ecosystems against anthropogenic degradation. The projects have to be accompanied by EIAs to ensure minimization of the negative effects.
Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites	-Which protected areas and potential Natura 2000 sites will be affected?	The improvement and development of sustainable transport is the only way to maximize the protection for the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites. Projects must be accompanied by EIAs to ensure minimization of the negative effects and to offer the alternative options for new and safe roads development.

Specific objective 4: Promote sustainable development especially by minimizing adverse effects of transport on the environment and improving safety.		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Facilitate improvement of human health by implementing measures aimed at pollution prevention	-Will it facilitate improvements of human health state? -The number of people with respiratory diseases	Development of environmental measures will reduce the pollution effects and indirectly it will reduce the negative effects of transport activities on human health.
Protect and improve the condition of settlements with respect to transport noxes, particularly noise and vibration	-Will it reduce noise and vibration?	This objective has a positive effect since it promotes environmental measures to reduce noise and vibration. Enabling the shifting of car traffic to alternative transportation modes will increase the effect.
Increase population protection from risks associated with traffic accidents	-Will it facilitate the reduction of transport accidents? -Number of accidents per year –per mode of transportation	Development of sustainable transport infrastructure will reduce pollution effects and will reduce the number of accidents on the roads.
Increase population protection from risk associated with natural disasters and industrial accidents caused by transportation	-Will it help to reduce risk associated with natural and industrial disasters?	Improved transport infrastructure will help in case of industrial disasters or natural disaster evacuation. Minimizing impacts on environment through a sustainable transport will also reduce the environmental risks.
Limit use of different natural resources used in transport sector	-How consumption of natural resources will be reduced?	The objective has a potential to reduce and limit the use of different natural resources used in transport. Actions aimed at the reduction in energy consumption, reduction in land take and pressure on natural resources (stone, sand, etc.) would have a positive effect. various options should be assessed during EIA to ensure maximizing effect on the objective.

Specific objective 4: Promote sustainable development especially by minimizing adverse effects of transport on the environment and improving safety.		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Reduce waste generation, increase waste recovery, and facilitate recycling of all waste	-Will it encourage the recycling of waste resulting from transport activity, including old trains? -Will it prevent transport waste generation and promote the reuse or recycle of as much scrap material as possible?	Measures should be taken to ensure that old trains and carriages and other type of transport related waste are recycled and reused to ensure waste minimization and reuse.
Ensure protection of natural and cultural landscape from fragmentation due to traffic corridors	-Will it ensure the protection of natural and cultural landscape against fragmentation due to the transport corridors?	There will be a positive effect if the measures supported are aimed at environmental conservation and landscape protection. Such measures may identified by developing alternative bypasses for national roads and alterative locations for intermodal transport. If rehabilitation measures for old industrial roads are supported (conversion to green land and natural spaces, reforestation of slopes, etc.) are supported, a stronger positive effect may be achieved.
Preserve, protect and rehabilitate the Romanian costal zone of the Black Sea ensuring protection of natural (including aquatic and terrestrial ecosystems) and cultural heritage in order to achieve the sustainable development of the region.	-Will this development ensure the protection of the Romanian costal zone of the Black Sea?	If specific measures aimed at the conservation of the Black sea landscape and protection of aquatic and terrestrial ecosystems are supported, there will be a positive effect.
Improve energy efficiency and use of energy resources	-Will energy use (per passenger-km and per tone-km) reducing measures be supported?	If specific measures that ensure increased energy efficiency are supported, there will be a positive effect.
Facilitate energy generation from renewable resources		If bio-fuels are promoted within such measures, there may be some positive effect.

Specific objective 4: Promote sustainable development especially by minimizing adverse effects of transport on the environment and improving safety.		
Relevant Environmental Objectives	**Relevant indicators/guiding questions**	**Comments on likely environmental effects**
Improve environmentally-responsible behaviour of the public by promoting usage of public transport and other environmentally friendly means of transport (e.g. cycling, walking)	-Will it encourage the environmentally-friendly behaviour related to transportation means?	Promotion and improvement of rail and water transport, facilitating the shifting from road to rail or water transport and the usage of public transport, will have a positive effect.
Develop environmentally friendly transport (especially public transport system and multi modal transport)	-what measures will be supported to increase PT and intermodal transport use?	If public transport is supported or rail and water transport modes are promoted, there will be a significant positive effect.
Reduce the transport external costs (related to noise, air pollution and climate change, accidents, infrastructure damages and congestion)	-Will it encourage the full recovery of the costs of transport including externalities from users?	The internalization of transport external costs will reduce the negative impacts caused by transport on the environment and it will improve the real competitiveness between the transport modes. This can be achieved by financial measures to internalize environmental costs, restricting the access to some areas by private transport means, etc. there may be a positive link.
Reduce the intensity of the car traffic	-Will there be any measure supported to reduce the intensity of car traffic aiming at traffic safety?	There may be a potential positive effect if measures on restricting car traffic in the cities will be supported.
Proposed reformulation of proposed specific objectives: **Facilitate** sustainable **transport** development by minimizing adverse effects of transport on the environment and improving **traffic** safety **and human health**		

Annex 5. The Environmental Monitoring Programme

TEMPLATE (general suggestions regarding set up and implementation)

Introduction and monitoring purpose

Environmental monitoring programme is a vital process of any management plan. It helps in signaling the potential problems that resulting from the proposed projects, which have not been identified during the ex-ante assessment processes (both SEA and EIA) and will allow for prompt implementation of effective corrective measures.

The environmental monitoring should be required for the construction and operational phases of the projects carried out within the SOPs. The main objectives of environmental monitoring are:
- to assess the changes in environmental conditions resulting from the projects,
- to monitor the effective implementation of mitigation measures,
- to warn about the significant deteriorations in environmental quality (if any due to the carrying out the SOP) for further prevention action,
- to monitor the environmental effects of the entire programme.

Environmental monitoring team

Managing Authority appoints person to collect environmental monitoring data at the initial stage of the programme implementation.

The task of the environmental monitoring team would be to supervise and coordinate studies, monitoring and implementation of environmental mitigation measures, providing advise to the projects on the monitoring parameters and methods and providing information to the public on the monitoring data as well as reporting on the environmental issues to be submitted to the relevant environmental authority.

Specific modalities of the monitoring programme will fit into the overall SOP monitoring procedures.

Environmental monitoring reporting

Report on environmental monitoring will be produced regularly either by people responsible for collection of indicators within the MA or by experts appointed or hired to interpret the data at the end of the reporting period when information has been collected.

Reporting on environmental monitoring issues will be done in compliance with the existing monitoring procedures and tools set up for the structural instruments. Environmental data collection will use as much as possible the Single Management Information System allowing the bottom-up aggregation of output environment indicators at project level. In addition, relevant statistical information will be used whenever relevant.

Monitoring parameters and indicators

The parameters/issues which are monitored will be linked to the relevant environmental objectives of the programme, which are:

- Air;
- Water;
- Soil;
- Climate change;
- Biodiversity
- Human health;
- Environmental risk management;
- Resource efficiency and conservation/ sustainable resource management
- Landscape and cultural heritage
- Energy efficiency and renewable energy sources
- Awareness raising on environmental issues
- Sustainable transport

The environmental monitoring reporting has to cover all issues. Indicators for each issue have been presented in the table 8 of the Strategic Environment Assessment.

Managing authority can request or relevant environmental authority may ask for more indicators to be analyzed within the environmental monitoring and in the implementation report for the internal national purposes. This may help to better understand the indirect impacts and uncertainties coming from outside of the implementation of the SOP.

Transparency

Each MA will build a webpage where monitoring information would be located, such as early parameters for each environmental issue identified, locations of the projects and basic environmental information on each of them in a from of either posted EIAs or database.

Annex 6. Minutes of the public debate of the 15th of January, 2006 and the list of participants

The public consultation process on the Strategic Environmental Assessment for SOP Transport 2007-20013 was organized at the MTCT, on the 15th of January 2007.

The meeting started with an introductory speech delivered by Mr. Catalin Costache, advisor with the Ministry of Transport, Constructions and Tourism – Managing Authority for the Sectoral Operational Programme for (SOP-T), in which he pointed out the specific programming process of SOP-T, a process that also includes the Strategic Environmental Assessment (SEA), which lead to this event.

Mrs. Luminita Andrei, advisor with the Ministry of Environment and Water Management, mentioned the special importance of observing the SEA provisions for SOP-T, in accordance with the SEA Directive of the European Commission.

Mr. Catalin Costache continued by delivering a presentation of the **Sectoral Operational Programme on Transport 2007-2013**.

The strategic objective of the National Strategic Reference Framework (NSRF) of Romania for 2007-2013 is to promote competitiveness, develop core infrastructure and training, as well as an efficient use of human resources in order to reduce the socio-economic development disparities between Romania and the EU member states.

The overall objective of SOP-T is to promote a transport system in Romania, which will facilitate safe, fast and efficient movement of persons and goods, with appropriate level of service at European standards, nationally, Europe-wide and between and within the regions of Romania.

The specific objectives of SOP-T are as follows:

- Modernization and development of the TEN-T infrastructure, with a special focus on the TEN-T Priority Axes;
- Promote the development of a balanced transport system for all modes of transportation by encouraging the development of the railroad, water and inter-modal transport;
- Promote a sustainable development, mainly by mitigating the negative environmental effects of transport and by enhancing traffic safety.

The structure of the Priority Axes was also mentioned:

- Priority Axis 1 – Modernization and development of Priority Axes for the Trans-European Network - Transport (Priority Axes TEN-T no. 7, 22, 18) – in order to build a sustainable transport network, integrated with the EU transport networks,
- Priority Axis 2 – Modernization and development of the national transport network outside the TEN-T Priority Axes TEN-T (in order to create a sustainable national transport system);
- Priority Axis 3 – Modernization of the railway passenger rolling stock on the national railway networks and TEN-T;
- Priority Axis 4 – Sustainable development of the Transport sector (promoting the inter-modal transport; enhancing traffic safety for all modes

of transport and mitigating the negative environmental effects of transport);
- Priority Axis 5 – Technical Assistance for SOP-T.

The beneficiaries of these priorities shall be:

- The National Company for Highways and National Roads from Romania (CNADNR S.A.);
- The National Railway Company - CFR S.A.;
- SNTFC CFR Calatori S.A.;
- MTCT Agency;
- Port, river and maritime administrations;
- Airports;
- Private operators.

Mr. Catalin Costache also mentioned the project types (in the field of road, railway, water and air transport, horizontal aspects and technical assistance); project portfolios (for each sector), as well as a percentage of the financial allocations for each priority axis.

During the second part of the meeting, Ms. Ausra JURKEVICIUTE, SEA topic area team leader, Regional Environmental Center (REC), delivered a presentation of the **conclusions on the Strategic Environmental Assessment Report (SEA)**.

It started by an introduction of the presentation's objectives:

- Methodology;
- Issues and difficulties faced during the assessment process (positive aspects);
- Overall effects of the SOP-T on the relevant environmental objectives;
- System for project selection and evaluation;
- Environmental effects monitoring.

Regarding the methodology, there were references to:

- Main environmental aspects related to SOP-T;
- Analysis of relevant environmental strategic documents;
- Projects' compliance with the national and international standards;
- Identification of the relevant environmental objectives for SOP-T;
- Environmental assessment and recommendations for the strategy, effects, key issues;
- Selection evaluation (monitoring and selection),
- The environmental report;
- The consultation process (the intervention of the environmental authority, but not only, is sought during the entire process).

The methodology was based on the GRDP Handbook on SEA in the Cohesion Policy 2007-2013.

Issues and difficulties encountered:

- Late start of SEA in comparison with the programming process,
- Lack of local experience and too short time to train the local experts,
- The Natura 2000 network was in the process of being implemented.

The strengths are as follows:

- latest methodology applied for the operational programmes (OP);
- successes with institutional consultations;
- definition of the OP interventions, at strategic level;

- strategy related documents – OP recommendations;
- multidisciplinary team of national and international experts with SEA experience.

General effects of SOP-T on the relevant environmental objectives can be positive or negative; priority axes 1 and 2 can generate a negative effect, while priority axes 3 and 4 have a positive effect.

The suggestions regarding the modification of the SOP-T specific objectives concerned the support of a sustainable development and the effects on the environment.

This would be possible through a modernization and development of the sustainable road infrastructure along the TEN-T no. 7 priority axis, at the same time with the highest possible level of environmental protection, on the one hand, as well as through developing inter-modal terminals, logistics centers and by setting up a National Protection Strategy, on the other hand.

The main mitigation measures of the SOP-T impact on environment were translated into:

- Attention given to the NATURA 2000 projects and habitat fragmentation,
- Priority support for investments meeting the following conditions:
  - Promote BAT (pollution reduction techniques),
  - Promote a minimum energy consumption, support the increase in energy efficiency and the energy demand (e.g.: oil and gas) and promote the preservation of natural resources,
  - Facilitate the development and use of public transport as a priority,
- Use of the proposed environmental criteria in order to prioritize the project proposals submitted for funding through SOP-T.

The system for project selection and evaluation from the environmental point of view includes two stages:

- Pre-project environmental evaluation during project preparation (positive and negative effects),
- Formal environmental evaluation within official evaluation procedures.

As a recommendation, in order to provide an efficient evaluation system, the proposal was to incorporate the proposed environmental evaluation of project applications into the overall system of evaluating and selecting project proposals.

The monitoring of the environmental effects shall include:

- an SOP-T monitoring system and a set of monitoring indicators (selective indicators were mentioned);
- a group of specialists to interpret and select indicators, and
- an implementation system.

During the last part of the meeting, Mrs. Andreia Petcu, representative of the WWF – The Danube – Carpathians Program in Romania, made the following *remarks and comments*:

1. the organization she represented considers the SEA Report on SOP-T to be the best SEA Report among all reports for OPs during this programming period;

2. the existence of certain inconsistencies between the scale used to asses the key areas of intervention and the comments made regarding the potential environmental effects,
3. there is no differentiation between the "aquatic" and "marine" ecosystems,
4. to consider replacing the term "regularization" with the term "dredging",
5. the need to highlight the coherence between SOP-T and the Water Framework Directive,
6. regarding the inter-modal transport, the transfer from the maritime mode to the road and railroad mode was not considered,
7. the need to implement environmental-friendly measures by compensating the dredging with the flooding of other areas,
8. reformulating the indicators proposed for habitat monitoring.

Regarding the *inter-modal transport*, Mr. Catalin Costache agreed that this subsector was not given enough attention over the past years, but with the SOP-T, this shall be remedied through projects on inter-modality.

Mrs. Andreia Petcu highlighted the importance of studies and cost-benefit analysis regarding the transport on inland navigable waters, with the purpose of determining the market functionality and the investment opportunities in this subsector. As a result, Mr. Catalin Costache reminded that the Master Plan for Transport, to be realized this year, tackles these aspects as well.

In this context, the Marco Polo Program was also mentioned, a program that finances transport services provided by the private sector, promoting intermodality and transfer of road traffic to the water and railroad modes.

Concerning the *inconsistencies between the scale that was used for the assessment of the key areas of intervention and the remarks on potential environmental effects*, Ms. Ausra JURKEVICIUTE mentioned that the final score represents an average of the 6 experts' assessment scores.

Regarding the *other observations* made by Mrs. Andreia Petcu, they are welcome and shall be considered in the final version of the SEA Report.

Drafted by,
Iuliana Mihaela Buretea
Dana Onofrei

Acknowledged by:
Mr. Catalin Costache, MTCT – GDEFR
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Annex 7. Table of responses to the comments of the public and other stakeholders during the public consultation period and public debate held on the 15th of January 2007

No	Institution	Page/chapter	Comment	Response
1	WWF B-dul Dimitrie Cantemir Nr. 2, Bl. P3, Sc.2, Ap.32 Bucureşti, RO- 040241	Table 3, page 37	The main effects of SOPT on waters are presented without mentioning the specific hydro technical works (dragging, drainage, etc.). We consider that those works represent an important aspect to consider and suggest to include it into the analysis of the effects.	The comments is taken into account and the text is modified as follows: "negative effects on waste ecosystems due to hydro-technical works (dragging, drainage, etc.)"
2	"-"	Chapter 8	We understood that the impact value, evaluated on the scale from -2 to 2, is the average of the options of the different specialists involved in assessment and that the comments presented on the right column regarding the effects are very important. This is the reason why we suggest that those comments have to be always in accordance with the scale. A. If there is no direct connection than the value must be 0, and if there is a connection the associated value must be also specified. B. We consider that there is a connection and that this program should be correlated with the *Energy strategy* that foresees the increase of the bio-fuel consumption till up to 2% of the total fuel consumption.	The point is correct. a. The conclusions of the assessment of the effect of KAI 1.3 on the Objective 'Preserve, protect and rehabilitate the Romanian coastal zone of the Black Sea ensuring protection of natural (including terrestrial and aquatic ecosystems) and cultural heritage in order to achieve the sustainable development of the region" have been modified as 0 (having no effect) B. No engines or other energy consuming equipment is planned to be purchased during within the KAI. Therefore the evaluation was not changed, however, in the works related to the activities planned, there may be a possibility to employ biofuel, therefore the description was amended with

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				the following text. "Due to the national commitment to achieve 2% increase in biofuel consumption, there is a potential to encourage beneficiaries to utilize this kind of fuel and give priorities to such projects".
3	"-"	Page 58	Comment regarding the recommendation for KAI 1.3. We consider that it should be avoided the recommendation to use of the term REGULARIZATION because it implies an activity that causes major modifications, some of them irreversible, of the river beds. We suggest the reformulation: „It is recommended that the structural works affecting river beds be done using ecological materials and technologies. We suggest as well that, when a project proposes irreversible morphological modifications with environmental impact, compensatory ecological measures should be suggested (renaturalization or flooding of other areas, etc.)	The comment accepted and proposed modification was incorporated into the text.
4	"-"	**DCI 4.1:** Promote intermodal transport Analysis of the effects on the objective "Minimize the transport impacts on the air quality at rural and urban level"	IN SOPT, at the intermodal transport chapter, only the road and railway transport are mentioned, while the SEA report for SOPT includes also the correlation of water and railway transport segments. We consider necessary to prepare an analysis	Intermodal transport is considered as more environmentally friendly transport, since it enables better connection between water, rail and road freight and passenger transport ensuring the most environmentally friendly modes are better accessed and used. Therefore,

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			of the environmental benefits before implementing such projects.	it is thought that evaluation of the impact as positive towards the environment is correct though it is correctly observed that activities under this KAI nevertheless have to be prioritized in terms of environmental effects.
5	"-"	General recommendation	Water Framework Directive should be integrated in the TEN-T programme respectively. Accordingly, in the projects, plans and programmes to be carried out, the requirements of the WFD have to be integrated (e.g. principle of non-deterioration, improvement of ecological status, cost efficiency, public participation, etc.). As regards the plans to improve navigation on the Danube this should be holistically approached and SEA has to be performed for the whole river basin.	The comment is accepted. The SEA team does not have information if the Danube river basin management plan according to the WFD has been finalized. The activities in the SOPT as regards the navigation and development have to be coordinated with such plan. Therefore based on the comment, the environmental report has been amended with the following recommendations: - to coordinate the projects and activities planned under SOPT on the Danube river with the WFD and/or Danube basin management plan; - to conduct the SEA of the complete set of the activities on TEN-T priority axis 18 in Romania.
6	"-"		It is suggested to carry out an analysis that would show costs benefits for environment from the development of different branches of transport and the optimal balance among the-	Such analyses have been carried out in different countries already. Based on effects on the environment the most positive are the train, water and public trans-

No	Institution	Page/chapter	Comment	Response
			se branches taking into account the environmental factors.	port means and networks. However, additional analysis of the most suitable transport mean development can be carried out within or in parallel of the development of the strategy under KAI 4.3: Minimize adverse effects of transport on the environment.
7	"-"	Page 105	With regards to the environmental indicators suggested we could see that some of them should be reformulated to allow the correct measurement of the effects: 1. For relevant environmental objectives „Limit water pollution from point and diffuse pollution sources " and "Limit point and diffused pollution of soil" It is not relevant only the number of accidents but also the quantity, toxicity and other characteristics of substances are equally important. Certain substances have high volatility and can evaporate quickly, and others can easily infiltrate". 2. For relevant environmental objective „Protect and improve the conditions and functions of terrestrial and aquatic eco-systems against anthropogenic degradation, habitat fragmentation and deforestation „**Indicators increase in the level of fragmentation of relief duet o SOPT' is**	1. The type of pollution is not directly related to activities under SOPT. Data on the spilled pollutants is being collected by the environmental inspectorates regularly. the indicators on the number of accidents would demonstrate better the performance of the SOPT therefore we think the indicators are relevant. monitoring of the SOPT should not substitute the environmental monitoring of EPA, but has to as close as possible reflect to the activities of the programme. 2 and 3. Due to very big volumes of measurements and high expertise of staff needed to collect such data as well as due to the need to have small number of indicators, we support the original suggestions and would encourage other institutions responsible for management of protected areas and

No	Institution	Page/chapter	Comment	Response
			not relevant. Baseline situation must be firstly known. Suggested indic: „no. of affected habitats and their surface"„ 3. For relevant environmental objective „Preserve the natural diversity of fauna, flora, and habitats in protected areas and potential Natura 2000 sites " the affected habitats, populations and species' status must be as well considered besides the surface affected by the transport infrastructure.	Natura2000 sites to monitoring this data or include it into the national monitoring system, but not to use it for the monitoring of the SOPT.
8	Dr. Fulga Mihaela si Dr. Emilia Maria NICIU, MD MSc Sef sectie Sanatatea in Relatie cu Mediul, Head Environmental Health Department Institutul de Sanatate Publica Bucuresti Institute of Public Health Bucharest	General comment	Projects with negative impact can not be accepted it case to be at least "0" -zero or +, even in construction phase. Especially in construction phase pollution peaks can generate acute health effects, leading to an important public health problem. At all project stages (construction and exploitation) pollution mitigation measures have to be taken in such a way that the health status of the population is protected and kept at least as existing at baseline.	The OP does not contain projects, but more general strategy for implementation of the objectives. During SEA the highlighted scale was used to estimate the potential significance of the effect on the KAI and from the assessment one can not conclude that projects will have negative effects. However, any projects which will be approved within OPs will have comply with EIA procedures based on the national law, where it is expected that environmental as well as health effects' minimization or elimination measures will be proposed, discussed and approved as well as for the construction phase.
9	"-"	Page 30	Remark to the text regarding impacts of accidental spills from traffic to water "Toxic-	Amendment was done to the text as follows: spills from vehicles transporting harmful

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			dangerous"	substances on surface and in waters, which are very toxic to humans as well as nature
10		Table 3	Number of comments on the key environmental issues	Most of the comments have been accepted, with a couple of exceptions where it was thought that the issues are too detail for the level of the OP
11		Table 4	Number of comments related to the reformulation of the relevant env. objectives	The relevant environmental objectives were adopted at the scoping meeting and could not be changed at this stage
12		Chapter 8.1	It is only possible to accept projects as eligible, from the point of view of health impact assessment, only if the impact is negative !! (-) compared with the starting moment (zero moment baseline data). !!!!	The assessment (estimate) was not of the projects, but of KAIs, therefore the evaluation by experts provide not ultimate, but preliminary effect, and not of any particular project or KAI. In the SEA it is important to evaluate all uncertainties and options, therefore the overall assessment is being summarized in the cumulative assessment and mitigation measures are being proposed, table 7.
13		Table 6, thought the table	Comments related to evaluation of effects on relevant env. objectives and especially objective on "Facilitate improvement of human health by implementing measures aimed at pollution prevention"	We understand the concern with human health, though any economic activity has a negative effect on the environment (longer or shorter, reversible or irreversible). mitigation measures have been proposed to minimize, offset or mitigate such effects to the highest degree, but

No	Institution	Page/chapter	Comment	Response
				specific measures on each project can not be suggested on SEA level, but will come up only on project level. SEA can only point out to such risks.
14		Table 6, thought the table	Indications potential negative effects	The assessment provided in table six aims to identify potential negative effects. this is the purpose of the analysis. we can not eliminate the wording where negative impacts are described. The experts attempted to make the description as detailed as possible in the time available, but there may be some omissions made.
15		Table 7, thought the table	Comments regarding information on potential negative effects. they have to be eliminated	The information provided in the table points out to the areas where attention has to be paid off during the EIA assessment aiming at establishment minimization, reduction and elimination of those negative effects. it has to be thee since otherwise it is not clear why there is a need for EIAs or obligatory minimization and protection measures,
16		Indicators	It was recommended to include population health indactors: mortality and morbidity in that area	Accepted with explanation that SEA recommends to use this indicator for projects in pollution "hot spot" areas, since the indicators are unlikely to pick up on the effects from the OP as a

No	Institution	Page/chapter	Comment	Response
				whole when activities in other sectors will intensify due to fore-seen development
17		Annex 4	Suggestions regarding indicators	Accepted