

**CONFERENCE ON
STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)
FOR TRANSPORT**

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ABSTRACTS OF PAPERS

SEA TO DATE, RECENT ADVANCES AND CURRENT PRIORITIES FOR DEVELOPMENT

**OLIVIA BINA
ERM, UNITED KINGDOM**

SEA to date and Recent advances

The 1990s have witnessed a substantial evolution in the methods and uses of SEA as a tool for the integration of environmental concerns and the promotion of sustainability within transport planning. A wealth of experience in sectoral and multi-sectoral (eg. regional development plans) SEA, both at regional, national and European levels can now provide us with a better understanding of the strengths and weaknesses of this tool. In particular, it is now possible to show the benefits of early, strategic level assessment, through concrete examples. A review of the 5 corridor studies (part of the Trans-European Network) carried out in different Member States and partly financed by the European Commission, has revealed interesting advances in SEA practice and also challenges for the future. These include issues on data, institutions, and public participation.

Current priorities for development

Amongst the challenges is the wider application of SEA to transport plans and policies, in order to maximise the positive effect of early integration in directing transport planning and, eventually, specific choices at corridor and project levels. The European Commission has recently promoted the use of simple SEA methods for the evaluation of Community policies, in an attempt to strengthen integration and sustainability, in line with the Amsterdam Treaty (Article 6). It has also strengthened the link between SEA and funding mechanisms such as Structural Funds, which also contribute to the transport sector.

Indeed, it is in the context of informing decisions on the use of grants and loans for large infrastructure initiatives that SEA can provide significant support. More can be done to promote such link with funding mechanisms, including grant mechanisms such as the Instrument for Structural Policies for Pre-Accession (ISPA) and Cohesion Fund, and IFI loans.

**THE MAIN METHODOLOGY AND PROCEDURAL ISSUES FOR EFFECTIVE SEA OF
PROJECTS AND POLICIES IN CEECs**

**NENAD MIKULIC AND JIRI DUSIC
STATE DIRECTORATE FOR THE PROTECTION OF NATURE AND
ENVIRONMENT, CROATIA**

1. The development of national SEA systems in CEECs.

Under the Sofia EIA Initiative a document outlining development of legal SEA frameworks in CEE (these legal frameworks are based on national EIA or land-use planning systems) was prepared the Aarhus Conference. In addition, we have identified through case studies of 12 SEA-type processes in CEECs the main methodological and procedural issues surrounding proper SEA application in CEECs.

2. SEA on Transport Policies in CEE.

We have at our disposal two case SEA case studies from Slovenia (partial SEA on Transport Networks carried in 1995-6) and from the Czech Republic (full and well elaborated SEA on Transport Networks carried in 1998). Both case studies provide interesting views on methodological and procedural modalities of existing SEAs in the Transport sector in CEECs (i.e. problems in use of the outcomes of SEA in the decision process, lack of methodological guidance, different modes of public participation, etc.).

3. SEA of Regional Development Plans.

Many CEE countries now prepare regional development plans (RDPs) to be used for regional development programs under PHARE II. Many of these RDPs largely focus on development of transport networks. SEA of RDPs thus initiates new type transport-related SEA, that may become important transport planning tool in future. The Sofia EIA Initiative has supported a pilot project of SEA on the Development Strategy of Western Bohemia that extensively addressed transport issues.

SEA OF TRANSPORT PLANS AT THE EUROPEAN LEVEL: TOOLS AND TECHNIQUES

**ANN DOM
EUROPEAN ENVIRONMENT AGENCY**

Recent international reviews of the application of SEA in the transport sector demonstrate that examples can be found in several countries. Various assessment techniques are being used for SEAs of large scale transport plans. Examples are GIS, multi-criteria analyses, traffic and environmental predictive models; scenario analyses, Delphi surveys, monetary valuation techniques etc. Often, quantitative techniques are complemented by qualitative information.

A specific problem for carrying out SEA at the international level is the need for harmonised databases and methods. The European Environment Agency has during the past years developed various environmental databases (e.g. on land cover, emissions, air quality nature conservation, coastal zones, etc.) and tools that can be of use for SEA at the pan-European level.

Since 1997, the EEA has been supporting the Commission in the development of methods for the SEA of the trans-European Transport Network (TEN). The EEA focused its work in particular on the developed of methods for the spatial and ecological assessment of the TEN. A GIS tool was developed in which all basic environmental, land cover and infrastructure data layers were brought together. Using this, a number of indicators and GIS assessment techniques were developed and demonstrated. This included the assessment of simple indicators (such as land take, vicinity to designated nature sites) and more complex ones such as the fragmentation of large and valuable open areas and the crossings of sensitive areas. The main conclusion of this study was that certain indicators can already be evaluated at E.U. level (even though data gaps are still a limiting factor), and that the assessment tool can provide a valuable contribution to the further planning and extension of the TEN.

SEA AND SUSTAINABLE DEVELOPMENT

**ASTRID GÜHNEMANN
AGENCA 21, GERMANY**

Strategic environmental assessment (SEA) is emerging as a procedure which has the objective of incorporating environmental concerns into decision-making at the level of policies, plans and programmes. In order to ensure sustainable development it is necessary to achieve economic, social and environmental goals equally. Therefore, a procedure has to be developed that integrates the results of SEA into a common assessment framework.

Cost-benefit-analysis (CBA) is a standard methodology for evaluating welfare impacts at the project level. However, long-term and large-scale impacts that are mainly relevant at the strategic planning level can only be transformed into monetary units under high uncertainties. Therefore, in a research project on behalf of the Umweltbundesamt, a backcasting methodology has been applied by IWW and partners for the assessment of transport infrastructure plans at the national and regional planning level. The backcasting approach is based on the definition of environmental quality standards. In this approach, the alternative transport planning scenarios are the outcome, not the input of the procedure. Different scenarios are developed until one scenario is found that achieves the environmental goals and at the same time maximises the economic benefit of the transport plan. Based on this optimal scenario it is possible to derive shadow prices for environmental impacts that can subsequently be applied in CBA at the project level.

The concept of shadow prices for externalities provides an instrument for linking strategic network level and project level assessment. For the application of the backcasting approach, it was necessary to develop a SEA methodology for a network-wide and multi-modal assessment of environmental impacts as well as basic methods for socio-economic assessment of transport infrastructure plans. Newly developed prediction models have been linked to conventional transport models that provide detailed data on traffic flows for all transport modes. The feasibility of the backcasting approach has then been shown at the regional level in a case study for the German state of Baden-Württemberg.

The development of the backcasting approach and of flexible methods for SEA at different planning levels improves the potential for integrating environmental, social and economic issues into the decision-making process in European, national and regional transport infrastructure planning.

SEA GUIDANCE FOR TRANSPORT IN THE UNITED KINGDOM

**PAUL TOMLINSON
TRL, UNITED KINGDOM**

Historically, the appraisal of different transport modes in the UK has been undertaken on a separate and non-comparative basis. In recent years, Common Appraisal Framework (CAF) methodologies have been developed to assess various transportation measures against a series of objectives set for a clear definition of the problem to be addressed. These objectives comprise environmental, social equity and economic considerations beyond the confines of the traditional cost-benefit approach. CAF methodology is now evolving into a tool that facilitates not only the comparison of transportation measures on an equal basis across a wide range of topics, but also assists the formulation of transportation measures and how they are packaged into transportation strategies. Appraisals consequently dealing with a variety of modes of transport and policy/fiscal measures.

The UK approach to the environmental assessment of highways schemes is described in the Highways Agency Design Manual for Roads and Bridges (DMRB), Volume 11 (1993). This Manual specifies the approach to the assessment of highway alignment options (Stage 2 assessments) and the environmental design and assessment of the preferred scheme (Stage 3 assessments). The Manual does not, however address the potential environmental impacts associated with different means (different modes of transport) for addressing a transportation problem. For non-highway projects, an ad hoc approach to assessment based upon DMRB has tended to be adopted due to the lack of comprehensive guidance.

In the Roads Review “A New Deal for Trunk Roads in England” (DETR, 1998a), the Government announced that it would also be taking forward a programme of Multi-Modal Studies (MMS). The aim of these studies is to examine the contribution that each of the transportation modes in major urban areas or inter-urban corridors can make to tackling the most urgent strategic transportation problems. In parallel, a New Approach to Appraisal (DETR, 1998b) was developed to assist in choosing between different options for solving transport problems and for prioritising between proposals.

Partly in response to the above developments, partly in response to the forthcoming Strategic Environmental Assessment Directive, and partly due to recognition that there was lack of guidance on environmental assessment methodologies to address inter-urban Multi-Modal Studies, the Transport Research Laboratory (TRL) was commissioned by the Highways Agency to investigate methodologies. Arising from this first phase, an Interim Guidance Note was prepared. TRL was then appointed to prepare a detailed guidance manual for Multi-Modal Environmental Assessment.

This paper explores some of the emerging issues associated with the development of MMEA methodologies and the Guidance Manual in particular, it then highlights how some were addressed in the pioneering M4 – South Wales Common Appraisal Framework.

THE EUROPEAN COMMISSION'S APPROACH OF THE SEA

**ROBERTO SALVARANI AND KEITH KEEN
EC DIRECTORATE GENERAL FOR TRANSPORT**

The Commission's presentation will be devised in two main sections. The first one more will be more empirical, focussing on the actions undertaken in the past two years to promote the SEA concept in the framework of Art 8 of the TEN-T guidelines (SEA manual and corridor analyses).

The second issue will be more pro-active, assessing the feasibility of the application of the current approach – *as it is* - to the TEN-T.

In addition the conference will be a good opportunity to determine if/how a SEA should also be developed/ applied in Eastern European Countries.

1. Actions undertaken

a) SEA Manual

The aim of the manual is to identify methods of strategic environmental assessment that are used in different countries and list examples of projects that were carried out following this approach. This "manual of best practice" is intended as a "**guide**" for planning services to introduce the SEA concept in planning process. Although it does not provide "**the**" methodology for SEA, it shows that a **common approach** already exists and that the SEA concept is already used in most Member States. The manual has already been distributed to the competent national administrations dealing with the TEN-T to make them more familiar with the SEA concept.

b) Corridor studies

Five corridors studies have been submitted by the Member States to test SEA methodologies. They have now been completed and they provide good examples of the use of SEA methodologies in the framework of a multimodal planning.

2. New Policy implications

Although it has now been proved that Strategic Environmental Assessment is feasible and valuable, in particular at project level, **it is clear that SEA is not fully effective if it is not combined with a complementary social welfare/cost benefit analysis.** This new approach will lead to re-balance the weight of the environment with respect to the socio-economic factors.

The Commission will probably suggest in its White Paper that an integrated SEA/socio-economic analysis (e.g a strategic project and network assessment) has to be developed and further integrated in the revised guidelines.

Three questions could be raised at this occasion:

- should SEA be applied at Community level as it is?
- should a wider concept of “strategic assessment” – including socio-economic appraisal be developed by the Commission proposed to be applied to any new TEN project of common interest in the new guidelines?

should SEA concept be also applied to CEEC, at corridor or project level, in particular prior to any ISPA funding?

ENVIRONMENTAL ASSESSMENT OF THE FRANCE-BELGIUM CORRIDOR

**PIERRE SKRIABINE
SETRA, FRANCE**

SETRA, in collaboration with CETE-Lyon, recently completed a methodology for SEA of trunk roads, as part of the development of the new national road network plan.

Since then in the framework of an EC study, SETRA has developed the approach to provide an SEA methodology applicable to all transport infrastructure (road, rail and inland waterways) and also to the evaluation of multi-modal scenarios combining these different types of infrastructure on the scale of a major corridor, and including the cross-border dimension. A generalised methodology for data interpretation and use of geographical information was developed.

This new French SEA methodology has been tested with the help of the Ingerop consultancy on the "North Corridor", stretching from Le Havre to Brussels via the north of the Ile de France and Nancy, under a study co-financed by the European Commission.

The intervention will present the new methodology and discuss the choice of indicators, illustrating the results of its application to the North Corridor and analysing its implications, especially with respect to data requirements.

TRANSPORT SEA, A NORDIC PERSPECTIVE

**ANDERS HH JANSSON
FINNISH NATIONAL ROAD ADMINISTRATION, FINLAND**

The Nordic Road Association (NVF) is a forum for the Nordic countries' co-operation in the road and road transport sectors. NVF congresses are held every four years. Between congresses, the work of the sections forms the basis of NVF activity. Within the 1997-2000 term, a working group of the Environment Section has studied strategic environmental assessment for the transport sector. The work started with a review of the state of the art in Finland, Denmark, Norway and Sweden, and international development trends. Based on an evaluation, the working group presents a perspective on further development. The group's report was published in June, 1999.

For transport, strategic environmental assessment has mainly been implemented through pilot projects. Most of the pilot projects have dealt with transport concerns, especially transport corridors, such as the E18-linked studies of Norway (Vestkorridoren) and Finland (The Nordic Triangle). But there are also examples of transport policy assessment and attempts at broader, integrated assessments: the assessment of the 1999 State Budget law in Denmark, or the work of the Communications Committee of Sweden. As implementation progresses, some general trends can be seen:

- there are increasing differences from the original pattern of transferring EIA methodology and work stages to the strategic level, as SEA is integrated into the strategic process and the way strategic decisions are made
- tiering has been emphasised as a way to organise SEA, but it is applicable only to a very limited number of cases; strategic planning is iterative, rather than hierarchical
- SEA techniques are now developing at speed, especially with the aid of GIS
- SEA will have a significant impact on strategic decision-making, but only if it is linked to national sustainability goals
- co-operation with the public is essential, but also very difficult, and there is a risk that SEA will fail in this respect
- transport SEA means dealing with all transport modes together, infrastructure and non-infrastructure measures together and linking the sector intimately to other sectors
- the main focus of transport SEA is on transport corridor assessment and on network assessment
- assessing programs (for instance 4-year action plans and programs) has not been very productive and it may be that LCA (life cycle assessment) is a better way to deal with these
- on the local level, partly the regional, transport SEA is increasingly integrated with and performed as a part of the land use planning process.

STRATEGIC ENVIRONMENTAL IMPACT ASSESSMENT - THE US TRANSPORTATION EXPERIENCE

**FREDERICK SKAER
FEDERAL HIGHWAY ADMINISTRATION, U.S.A.**

This paper summarizes the U.S. experience in using environmental impact assessment for making strategic decisions for surface transportation investments at various geographic scales. These decisions usually focus on the development of long-range transportation plans that show how predicted demands for transportation services will be met in an environmentally responsible way and within the funding that can reasonably be expected to be available. Among other things, these environmental assessments help assess the environmental trade-off between investment strategies involving various mixes of improvements to the highway, railroad, and urban mass transportation systems. Examples will be presented for a metropolitan transportation plan, a statewide transportation plan, and a multi-state plan for a major trade corridor.

Strategic environmental impact assessment in the U.S. transportation sector is greatly influenced by the Federal structure of the government and by private ownership of the railroads. From a governmental perspective, State and local governments own and operate the highway and urban mass transportation systems. Federal transportation law recognizes this by generally reserving to the State and local governments the authority to decide where and how to use the substantial Federal transportation funds made available to them, and what level of environmental analysis to undertake in support of these strategic funding decisions. Private ownership of the railroads in the U.S. poses a particular challenge in that the railroads, for business reasons, may not choose to fully share information on their strategic thinking or fully participate in governmental sponsored long-range transportation planning efforts.

The three examples to be presented are the strategic environmental impact assessment approach used for the (1) Seattle, Washington metropolitan long-range transportation plan, (2) the State of Wisconsin statewide long-range transportation plan, and (3) the special study for the I-69 trade corridor from Mexico to Canada. In each case a multi-modal investment mix was studied. Environmental factors were evaluated based on their relevance to the strategic decisions to be made and on the ability to realistically assess them at the geographic level involved. In each case, additional, site-specific environmental assessments were contemplated for individual transportation projects implemented as a result of the larger strategic effort.

**MOTORWAY INFRASTRUCTURE ENVIRONMENTAL ASSESSMENT:
PROBLEMS AND CHALLENGES IN CENTRAL AND EASTERN EUROPE**

**PETR POSPISIL
UN/ECE TRANS-EUROPEAN MOTORWAY PROJECT, POLAND**

Before 1989, the environmental problems related to roads and motorways in the region had been mostly neglected and respective practical measures had been limited practically to rather questionable protection of agricultural land, individual noise and drinking water protection measures and to limited attempts to decrease the excessive use of chemicals in winter maintenance.

The basic political and economic changes in most of the countries of the region in recent years brought about much greater public awareness to the environmental problems. To reflect this phenomenon and also facing the growth of the road traffic, the government authorities and road administrations introduced a lot of changes in the legislation regarding planning, design, construction and operation of roads and motorways aimed at better environmental protection, reduction of related nuisances, improved information and closer participation of the public in all preparatory and implementation phases. In this context, also the Environmental Impact Assessment (EIA) of motorway and major road projects was made mandatory.

Considerable attention to the environmental topics has been also paid by the TEM (Trans-European Motorway) project, in the framework of which also the guidelines for the assessment of motorway impacts were elaborated and the special group of experts on the EIA has been working.

Despite the great progress reached, nevertheless, the present level of environmental management in the road and motorway sphere is not fully satisfactory and some problems still remain to be addressed as listed in the concluding part of the presentation.

**MAJOR ENVIRONMENTAL PROBLEMS OF THE MOTORWAY CONSTRUCTION
PROGRAMME; HOW THE EIA PROCESS CAN HELP**

**STEFAN REWINSKI
MOTORWAY CONSTRUCTION AND OPERATING AGENCY, POLAND**

The aim of the presentation is to convey information about difficult environmental problems which have been identified in studies of the environmental impacts of motorways and to present the proposed methods of solving them during an ongoing phase of the implementation of the paid motorway construction programme in Poland.

Contents:

In reference to its aim, the presentation will address the following issues:

1. The present state of paid motorways investment process
2. Examine the place and scope of the EIA process in the investment procedures
3. Discuss conclusions stemming from completed EIA studies:
 - * variants of routes localisation, option "do nothing" and local corrections of routes alignments,
 - * range of over-normative environmental impacts of motorways
 - * mitigation measures leading to the reduction of the adverse impacts of motorways
 - * situations and problems causing social conflicts
 - * economic and land-use consequences of decisions based on the EIA's (purchase of a 20-metre risk zone, the need of re-arrangement of the forest-edge zone, land-use changes in the surroundings of a motorway, costs of environmental mitigation measures).
4. Discuss unsolved problems and problems requiring additional analyses at further phases of the investment process, including:
 - * valorisation of nature along a motorway route crossing environmentally valuable areas,
 - * verification of the range of area of the motorway's over-normative impacts on environment,
 - * evaluation of the human health risk caused by a stress from the motorway traffic
 - * unpredictable environmental risks,
 - * monitoring of environmental impacts in a surrounding the motorways.
5. Present conclusions on the procedures and methodology of EIA and SEA for motorways.

**THE USE OF SEA FOR NATIONAL AND REGIONAL TRANSPORT POLICY ASSESSMENT,
POLITICAL APPROVAL AND IMPLEMENTATION**

**JAN FRIEDBERG
MINISTRY OF TRANSPORT AND MARITIME ECONOMY, POLAND**

the presentation will discuss recent transport policy developments in the light of changing political, social and environmental contexts. It will also discuss current restructuring plans in the transport field and links between transport policy and the overall economic situation and public finance strategies.

**STRATEGIC ENVIRONMENTAL ASSESSMENT OF THE PLANNED NETWORK OF
MOTORWAYS AND EXPRESSWAYS IN POLAND**

**MARIAN TRACZ
CRACOW UNIVERSITY OF TECHNOLOGY, POLAND**

The first part of the paper describes briefly the study of the planned network of the motorways and expressways in Poland. The programme of motorways and network of planned motorways in Poland was accepted by the government in 1993 and revised in 1996. Since this revision several new sections of motorways and expressways were proposed and new traffic surveys were conducted. Prof. W. Suchorzewski from Warsaw University of Technology made a comprehensive study of several development alternatives for the General Directorate of Public Roads. The author of paper was asked to make a strategic environmental assessment of four scenarios of development including the "do nothing alternative". The multimodal scenarios were not considered at that stage.

The second part describes methodological aspects of the SEA for the project:

- "do nothing alternative" (at about 300 km of motorways) with 1996 traffic,
- "do nothing alternative" with 2025 traffic,
- "governmental alternative (1996 network) with 2025 traffic,
- new, revised alternative with 2025 traffic.

The authors of SEA considered several factors to be used in assessment, including those suggested in the 1994 OECD Report (Environmental assessment of roads, OECD 1994), World Bank Report (1994) and the ECMT Report on "Conclusions on Strategic Environmental Assessment in the Transport Sector" (1997). In this analysis several aspects were considered including: access to data, available data, data to derive, etc. and also potential sensitivity of the assessment factors in relation to the evaluated alternatives. This analysis has shown that in practice list of suggested factors is strongly affected by the availability of data and by sensitivity of factors in conducted comparisons. For example strongly recommended CO₂ for its global effects is not very practical at comparison of the various road networks, but on the other side CO and NO_x recommended for local EIA were much more sensitive in the SEA comparisons.

The third part of the paper includes some details and results of SEA including finally the following impacts on:

- area of land taken and resulting changes in agriculture production expressed by grain production, and including also impact on employment in the agriculture sector,
- air pollution including CO₂, CO, C_xH_y, NO_x and equivalent emission comparisons and approach leading to such assessment,
- noise impact along the road network sections - very labour consuming analysis in the stage of studying of the three types of impacts of noise (affected sections, affected housing, and affected area),
- road safety expressed by the numbers of accidents, killed and injured,
- protected areas of natural environment.

Final comparisons included two development alternatives and the "do nothing alternative".

The paper includes also some concluding remarks and recommendations regarding requirements regarding data banks and systematic monitoring of impacts.

THE WORLD BANK: INSTITUTIONAL REQUIREMENTS FOR SUCCESSFUL STRATEGIC ENVIRONMENTAL ASSESSMENT

**PIOTR WILCZYNSKI
WORLD BANK**

Presentation of the World Bank's strategy in relation to the strategic environmental aspects of project financing and the relevance of conditionality in international financing arrangements.

**THE EUROPEAN INVESTMENT BANK (EIB): TRANSPORT PROJECT FINANCING
AND STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)**

**AXEL HÖRHAGER
EUROPEAN INVESTMENT BANK**

The European Investment Bank

Financial institutions, particularly if their mission is to represent the public interest, have a special responsibility in the investment process as regards the incorporation of environmental consideration at the earliest possible stages in an investment process and in a consistent way as possible. The unique contribution that financial institutions can make in the process is a result of their relative independence in exercising their judgement on whether a venture satisfies certain sustainability criteria. Put in simple terms, competent banks, whether public or private, can distinguish themselves by taking a fully balanced view of a project.

The financing criteria of the European Investment Bank (EIB), the long term financial institution of the European Union, may illustrate this point. The Bank was set up in 1958 by the Treaty of Rome as one of the institutions of the European Communities. It is set up as a bank the share capital of which, currently amounting to 62 billion EURO, is owned by the 15 member states. The EIB has been successful for 40 years in directing substantial flows of capital to achieve the aims defined in its statute, which comprise balanced regional development in the European Union, modernisation and enhancement of competitiveness of European industry, and advancement of European integration by means of common policies in the sectors of transport, communications, energy and environment. In so doing, it has acquired significant project identification, appraisal and evaluation expertise. The EIB's activities have covered the European Union, countries in Central and Eastern Europe, the Mediterranean region, and the many overseas countries with which the European Union has co-operation agreements. As part of its transport sector financing, the Bank has lent over the period 1993-1997 some 50 billion EURO in support of Trans European Networks, as well as some 3.3 billion EURO toward transport projects in Central and Eastern Europe.

Strategic environmental assessment and the appraisal of transport projects

In line with criteria developed by the European Commission, SEA is becoming an integral part of the decision-making process for transport infrastructure policies. Particularly for issues involving several transport modes and the determination of optimal combinations of modes SEA is regarded as crucial. SEA can also be linked with socio-economic assessments of investment choices and project selection. However, as regards the actual details of the execution of such SEAs, these are performed carried out by or in the name of the investing institutions and the promoters. International financial institutions such as the EIB cannot in general carry out work that needs essentially to be carried out by the countries and institutions involved in an investment process. This sometimes poses the problem that the application of full SEA is in practice still quite restricted. As has been shown in the CEMT/OECD Review of SEA, there are still numerous areas where SEA is only carried out incompletely or not at all. An example is mainstream transport sector planning, which in many countries (not only in Eastern Europe) is still conducted without genuinely considering alternative visions and sets of scenarios from an environmental

point of view. This leaves public decision-making in the hands of whatever environmental paradigm happens to be the dominant one in the eyes of the decision-makers.

A few basic principles of environmental assessment

Given the above shortcomings of existing SEA practices, the EIB must nevertheless strive to come to an informed environmental judgement on projects it has been asked to finance. A case in point here are the Trans European Networks, which specifically call for EIB intervention, but on which the Bank needs to be satisfied that basic environmental criteria are met. Among these criteria, that not only deal with direct environmental issues but also address the indirect effects on the environment of sub-optimal resource allocations, are the following: Legislation in the region and country in which the project is located must be satisfied, as must European Union legislation in the member states. The assessment, however, goes beyond the formal aspects, since its purpose is also to establish whether a project is indeed viable in a practical sense. The financial and business plan must be realistic, technical aspects in particular relating to the investment, its cost and implementation schedule must be satisfactory, the economic feasibility of the project must be confirmed on the basis of sound analyses of demand and profitability, including the analysis of externalities where possible. These aspects are particularly relevant in the cases of finance extended to railway companies. While the latter are frequently considered potentially attractive recipients of finance due to the significant contribution that the railway mode can make to lowering adverse environmental impacts of the transport sector, it is equally important to ensure that basic economic resource allocation criteria are satisfied, in other words, that the railways make a positive economic contribution. Another area where financial and economic analysis are crucial in the case of Public-Private-Partnerships, which have gained a lot of favour for certain types of transport projects, and with which the Bank is increasingly involved in many countries. There must be informed analysis and judgement on environmental issues, frequently necessitating specific impact studies. A critical aspect is the economic assessment and the analysis of the market and demand for the services offered by a project. All too often, promoters neglect the demand aspects or do not offer realistic forecasts. Investments which are premature or over-dimensioned, can be among the most undesirable features not least from an environmental point of view, causing great harm to future prospects of a sector, as well as constituting a drain on public resources. The involvement of the Bank, although of course no substitute for the roles of the promoter and the regulators, is maintained to the extent possible throughout the project cycle by regular project monitoring during disbursement of funds and the life of a loan.

Bank practice and some project examples

The Bank and similar financial institutions are thus essentially dependent on SEA carried out externally by the project promoters. What the Bank can and does do is to verify the assumptions and consistency of the objectives underlying a proposed project investment, to ensure that they meet basic criteria related to SEA. The Bank cannot, however, make up for deficiencies in the SEA or the EIA, or resolve basic policy contradictions. An example might be the current emphasis on Public Private Partnerships, which are much propagated as a solution to better management and as sources of finance for transport schemes. In certain respects, PPP objectives might conflict with SEA policies, and such conflict should be resolved at the level of the public authorities rather than the financing institutions. Examples are found in the financing of road schemes, such as the DBFO (Design Build Finance Operate) schemes in the UK, or Private Concession Motorways in Portugal, where the requirements of the PPP concept take centre stage. It is assumed that the new infrastructure will not cause unacceptable trends in private vehicle traffic,

and that the effects of any increases have been duly considered on a policy level. The Bank cannot, in general, make good incomplete SEAs in such cases.

In some respects, the financing of very large schemes can be tackled in a more satisfactory way from the point of view of SEA policy consistency. Major transport schemes financed by the EIB were the crossing at the Öresund between Denmark and Sweden, and the Great Belt Crossing in Denmark, which received loans of 265 M EURO and 343 M EURO respectively. As part of the decision process leading to these projects, very comprehensive environmental and socio-economic analyses were carried out, including for instance consideration of the effects of generated traffic, the implications on traffic energy balances, and the effects on the Baltic Sea environment. Another example were EIB loans to the Swedish railway infrastructure company Banverket of several 100 M EURO, which were preceded by a comprehensive scenario analysis spanning a 10-15 year planning horizon and setting out the implications of alternative long term scenarios in qualitative and quantitative terms, which can be considered a good way of implementing SEA.

Practical conclusions for bank project analysis

Important conclusions from the Bank's work are that:

- careful *analysis and diagnosis* are key ingredients of project appraisal, to allow the identification and implementation of sustainable projects
- there is an *interdependence* between the various aspects of project analysis (*technical, economic, environmental, financial*) which is relevant for the stringent objectives of sustainable transport projects, and this delicate balance needs to be maintained throughout the project cycle
- environmental best practices, including legislative assessment, public participation procedures and impact analysis should be built into projects from the outset as a process and include *strategic environmental assessment* as appropriate.
- financing institutions can and should conduct their *independent assessments*, based on straightforward criteria, which should not substitute but complement studies by promoters.
- a *strategy of favouring sustainable transport development* needs to be formulated and nurtured, so that long term results can be achieved - a process that the Bank is still engaged in, and in which strategic environmental assessment will play a key role.

SEA AND THE EUROPEAN BANK FOR RECONSTRUCTION AND DEVELOPMENT

**WILLIAM V. KENNEDY
EUROPEAN BANK**

In line with the nature of the EBRD as a “project-oriented” financial institution, its Environmental Procedures provide guidance primarily on the way in which project level environmental impact assessments should be carried out. Nonetheless, the Procedures allow for the fact that “in addition to EIAs on specific operations, the Bank may also carry out strategic environmental assessments as the need for them arises”.

This paper will begin by providing an overview of the Bank’s experience in carrying out project-level EIAs on highway, railway, port and airport projects in central and eastern Europe and the former Soviet Union.. It will also describe the Bank’s attempt to facilitate a strategic level environmental assessment of the Slovenian Transport Sector.

The paper will then outline the “lessons learned” from carrying out EIAs in general in the transport sector. It will conclude with some thoughts on the type of SEAs which might best be carried out in central and eastern Europe together with suggestions as to how the Bank might co-operate with other IFIs, international organisations and national ministries of transport and environment in carrying them out.

STRATEGIC ENVIRONMENTAL ASSESSMENT
FOR TRANSEUROPEAN TRANSPORT NETWORKS
DEMONSTRATION STUDY OF THE DANUBE CORRIDOR

ERNST LUNG, MINISTRY OF TRANSPORT,
HELFRIED GARTNER, ENVIRONMENT MINISTRY
ANREAS KAFER, TRAFICO
AUSTRIA

1. Preamble

The DG VII (Transport) and DG XI (Environment) in the European Commission are interested in a method for strategic environmental assessments (SEA) of the Transeuropean Transport Networks (TEN). For this purpose in demonstration studies, methods for SEA are elaborated and checked, if they are suitable for the whole network and some corridors.

The federal ministry for the environment, youth and family affairs and the federal ministry of science and transport in Austria decided after the discussion to these plans of the commission in the ad-hoc working group "SEA for TEN" to work out a SEA demonstration study in Austria. This study is 50 % cofinanced by the European Commission from the TEN-fund. Experts from the DG VII and from the DG XI are also involved in questions to the content of the study. Moreover the federal ministry for the environment, youth and family affairs established a cooperation with the CEI working group "transport and environment", so that also interested experts from reform countries in Central and Eastern Europe are informed about the development of SEA.

2. Why was the "Danube-Corridor" selected for the demonstration study?

The Danube Corridor is very suitable for a SEA demonstration study, because

- the transport modes rail, road and inland waterways are available in this corridor,
- in Austria and also in the neighbour countries in the corridor are affected on the one side dense populated agglomerations (e.g. Vienna and the "Eastern Region" and the central region of Upper Austria, the cities Budapest and Bratislava and on the other side sensible natural areas (Wachau, Wienerwald and many forests along the Danube with important ecological functions),
- some interesting studies to the Danube-Corridor are a good base for the SEA demonstration study, but only few studies are focussing on all transport - modes;
- the corridor is important for the East-West transport in Europe and as a completion of TEN in Central and Eastern European reform countries. Sustainable solutions for transport problems can be an example for a successful cooperation of member states of the EU with reform countries.

The SEA demonstration study Danube Corridor is as a first step focussing on Austria. Within the CEI-Group on Environment and Transport a future extension to interested CEI-Danube countries was decided as a useful second step.

Based on concrete questions there is a distinction between a narrow and a wider study area

The narrow study area is including the following

- * the Austrian part of the Danube,
- * the railway lines from Vienna to the Hungarian and the Slovakian border,
- * the railway line Vienna - Ebenfurt - Sopron ,
- * the railway lines Vienna - Linz - Salzburg and from Wels to the German border in Passau and in Simbach,
- * the motorways A1 (Vienna - Salzburg), A4 (Vienna - Hungarian border), A8 (Wels-german border near Suben , A21 und A23 (by-passes of Vienna, the A23 is situated in a dense populated area).

In the wider study area are considered functional relations, like trade, transport flows and possible alternative routes to the Danube Corridor. For this wider area in the present demonstration study no SEA will be worked out. But relevant developments in this wider area will be considered very well, because they are important for the development of transport flows and the environmental impacts in the narrow study area.

3. Objectives of the Danube Corridor Study

A main purpose of the demonstration study is to find good methods for the SEA, which are suitable for the evaluation of environmental impacts of large scale plans, programmes and policy measures in the transport sector and ensure there a stronger consideration of sustainability.

Other objectives of the study:

- * to identify how the SEA can be helpful for the EIA of single projects (e.g. with basic datas, base for the selection of single projects)
- * to find suitable methods for public relations and citizen participation for basic decisions of transport policy (e.g. internalisation of external costs to get fair and efficient prices) and large scale infrastructure planning.

If the demonstration studies prove, that SEA is a suitable instrument for the transport sector, SEA should be worked out before planning the infrastructure projects in detail and the EIA of these projects. In Austria some EIAs for transport infrastructure projects, especially for new railway tracks include important steps of SEA and are a valuable knowledge base for SEA development. So it's possible, that a suitable SEA can facilitate the project EIA.

For the Danube Corridor should be answered the following questions:

- * Where the present transport in the corridor is causing severe environmental problems and health risks for the affected population ?
- * How will develop transport performance and modal split in the corridor till the year 2015 in a "business as usual" transport policy scenario and what trends are possible in the further future ?
- * What impacts would have such a development for affected people and the environment ?

- * What policy- and planning targets to develop the transport system (traffic and environments conception, investment-programmes for transport infrastructure) are existing and what impacts on environment and health would have to realise these targets ?
- * What measures and strategies of a more ecological transport policy could be realised in the forecast period ? (definition of reasonable ecological transport scenarios coordinated with the Austrian federal transport infrastructure plan = “Bundesverkehrswegeplan”)
- * What role can play the ship transport in future depending on different transport policy scenarios ?
- * What impacts would have a more ecological transport policy on effected people and the environment ? What would be the most important advantages compared with a business as usual scenario ?
- * What connections exist between different transport policy scenarios (“business as usual” and “ecology”) and the need for additional transport infrastructure in the Danube Corridor? In what extent is it possible to save expenses for transport infrastructure and to avoid negative environmental impacts by realising an ecological policy scenario ?
- * What evaluation criteria are suitable for SEA, especially for corridors ? What instruments are helpful ? What scale of maps are suitable ? How can GIS (geographical information systems) be helpful ?
- * Are there formal evaluation methods (e.g. cost benefit analysis), which are well qualified for SEA? What advantages and what disadvantages have different methods ? What developments of evaluation methods for SEA are necessary to get useful results ?

Different from the draft of a SEA guideline, in the SEA Danube Corridor demonstration study, there exists no final plan which is to evaluate. The results of the SEA should be a base for transport policy decisions and for recommendations of the federal transport infrastructure plan. For this plan were worked out transport policy scenarios and traffic forecasts which are a useful input for the demonstration study.