



Contract No. FP6-2002-SSP-1/502481

HEATCO

Developing Harmonised European Approaches for Transport Costing and Project Assessment

Specific Support Action

PRIORITY SSP 3.2: The development of tools, indicators and operational parameters for assessing sustainable transport and energy systems performance (economic, environmental and social)

Deliverable 3

**Key Issues in the Development of Harmonised Guidelines
for Project Assessment and Transport Costing**

Due date of deliverable: 15 July 2005

Actual submission date: 26 August 2005

Start date of project: 29 February 2004

Duration: 27 months

Lead contractor for this deliverable:

TNO, The Netherlands

Final draft

Key Issues in the Development of Harmonised Guidelines for Project Assessment and Transport Costing

HEATCO Deliverable D3

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Delft, August 5th, 2005

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1. Introduction

This report presents the first results of WP2 of the HEATCO project. It is meant to present the reader state-of-the-art insights into transport project appraisal. We do this by first trying to indicate existing evaluation frameworks in countries. Based on the research carried out in the HEATCO project so far, we discuss the advantages and drawbacks of main elements of evaluation harmonisation. Furthermore, we deal with those methodological questions that demand a choice to be made in the harmonisation framework. Bearing this in mind, the current paper is in fact an issue paper to guide further research in the HEATCO project: it is meant to *identify the relevant issues for further research*, and to indicate the questions that will have to be answered.

The structure of this report is as follows:

In chapter 2 we provide an international comparison of evaluation frameworks, to see what we can learn from existing practice. We have included here the current practices in the US and Japan, as well as Britain, Germany and the Netherlands.

In chapter 3 we deal with the general/cross cutting issues that cover different aspects of harmonisation within appraisal methodology.

Chapter 4 generalizes the technical questions that were posed by EUNET and places these in broader context of the question of two different modes of harmonization: EU-averages or country specific values?

In chapter 5 we draw main conclusions with regard to the research agenda, based on the previous chapters.

In the annex the minutes of the first HEATCO workshop with stakeholders held on the 14th of April in Brussels are included.

2. State of the art in evaluation guidelines

2.1 Evaluation guidelines at EU level

In this chapter we give a general overview of different evaluation guidelines which supersede national boundaries. Further we provide an overview of evaluation practice in the EU countries. Notably in the Netherlands guidelines have resulted in tables with direct and indirect effects to be determined for inhabitants of a country and international effects. Also in this chapter, a comparison is provided with the U.S.A and Japan. A new element introduced in CBA in Japan is the benefit incidence matrix, which shows to which groups benefits and/or costs of projects accrue.

2.1.1 *Current evaluation procedure at EU-level*

The largest percentage of large scale European projects has to be financed by the member state or by private investors. The maximum financial contribution by the Commission is 20%¹. Instead of aiming at deciding which projects should be implemented, European guidelines represent an important element for the definition of “infrastructure of European interest”, thus also helping member states in the prioritisation, evaluation and selection of the infrastructure projects to be invested in.

The current rules for funding a project are that a project has to comply with European policy objectives (among others, transport and environmental objectives) and the Guidelines of the Trans European Transport Network. In practice, there is a wide domain of transport modes that goes from railways and inland waterway to satellite networks (Galileo). The River Information System (RIS) in Europe is an example of a project that complies to these European Guidelines.

The decision to finance or not to co-finance a project is not taken by the unit responsible for TEN project evaluation (unit B3) alone, but is part of a wider process that involves several other units in the DG TREN, the Commission in general, and the member states. The most important role of the responsible unit B3 is to check if a project complies with the selected criteria. In particular, it is mandatory to check if a project complies with the community legislation about environment (defined by DG Environment) and rail interoperability. When submitting

¹ This only applies in few special cases like Galileo and specific cross-border sections. Until now, the contribution by the Commission has been much lower (<10%).

proposals, applicants must use the application form wherein relevant criteria for the Commission are listed. Part of this application concerns a non-technical summary of the project.

An important criterion is the “maturity of the project”. This is a combination of different criteria such as: how serious is the member state with regard to the implementation of the project; has a CBA been carried out; have the balancing finances been arranged; in case of cross border projects, what arrangements are in place with neighbouring countries? Also a risk assessment is an important element in this respect with a view to possible PPP agreements for the financing of the project.

2.1.2 The TINA guidelines

The Transport Infrastructure Needs Assessment (TINA) process was designated to initiate the development of a multi-modal transport network within the territory of the candidate countries for accession: Estonia, Latvia, Lithuania, Poland, Czech Republic, Slovakia, Hungary, Slovenia, Romania, Bulgaria and Cyprus. The TINA-Secretariat, supported by the EC and based in Vienna, is responsible for the coordination of the TINA process.

More specifically, TINA has set a methodological basis for the definition of common criteria regarding bottlenecks, missing links and quality of service of infrastructure networks. The design of the network has followed two main steps:

- the definition of a backbone network, which is the network proposed by the European Commission – and accepted in the TINA process – as the starting point for a differential network design, identical with the links and nodes of the ten multimodal Pan-European Transport Corridors of Helsinki, on the territory of the TINA countries;
- the definition of the additional network components, proposed by acceding countries and the three TINA regional subgroups and approved by the TINA Group, after having assessed the relevant proposals.

In the TINA process guidance for project appraisal is proposed. Its overall aim was to establish a common framework so that schemes and options submitted to the various financing/ funding institutes by different states can be selected and appraised on a broadly comparable basis, and are presented in a way that facilitates review and analysis. Before any decision on financing/funding individual projects would be taken, the projects proposed for implementation had to be subjected to a socio-economic assessment. The TINA group recommended a common method for such a socio-economic project assessment, which the funding and financing institutions would endorse.

The principal focus of this guidance is the social appraisal of projects that is an assessment of the overall economic and social value. Also of interest is the spatial and social pattern of gains and losses associated with the project. In particular, the financial sustainability of the project is relevant, so that the pattern of financial, economic and social flows associated with the project needs to be demonstrated. It is suggested by TINA that this is best achieved by the use of a framework approach containing at its core a cost-benefit analysis, but with additional reporting of environmental impacts and impacts of broader policy.

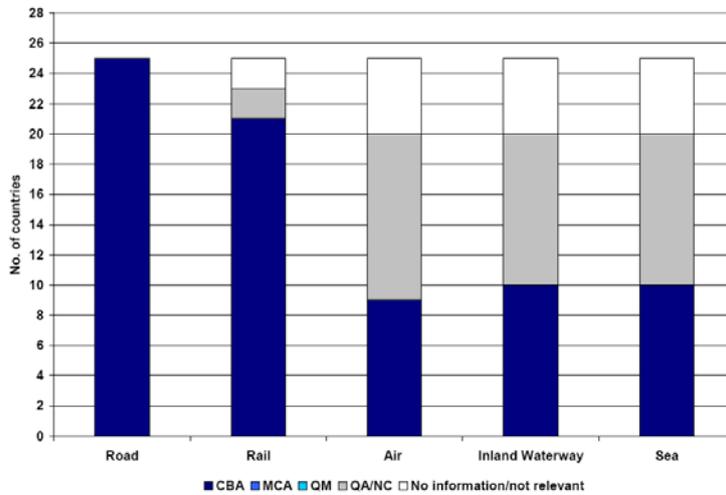
The guidance states clearly that the project must be properly defined at a level of detail that permits sensible appraisal. The guidance also provides recommendations for evaluation using both local and European values.

2.2 Guidelines at Member State level

The degree of standardisation of principles for project appraisal varies considerably across countries and modes. This is one of the main conclusions of the HEATCO survey of the current practice. Figure 1 presents an overview of the methods used per country and per mode. For more specific information about current practice in the EU at member state level we refer to Deliverable 1 of the HEATCO project.

The vast majority of the countries in the North/West region of the EU have comprehensive guidelines for project appraisal, whereas the guidelines in the South and East regions seem less developed. Furthermore, the appraisal framework for rail seems less standardised than for road and only around one third of the surveyed countries have formulated principles for the appraisal of air, inland waterway and sea transport projects.

Figure 1. Types of analysis by mode (no. of countries using relevant type of analysis by mode). QM = quantitative assessment, QA/NC = qualitative assessment/Not covered



Source: HEATCO Deliverable 1, 2005.

UK

The UK has an MCA in which the partial CBA plays an important role. CBA is compulsory for motorways. An identical framework is being set up for other modalities of transport. Indirect effects are not quantified. The method mentions indirect effects; assessments should point to which degree projects foster development of backward regions. Furthermore it is qualitatively evaluated to which extent a project contributes to government policy; in government policy different indirect socio-economic goals are defined like the reduction of unemployment and so forth. Likewise, external effects are only assessed in a qualitative manner. CO₂, noise and local air pollution are identified as external effects. Harmonisation of evaluation criteria has contributed to transparency, and has fostered the role of CBA in decision-making.

Netherlands

In 2000 the project OEEI (*Onderzoeksprogramma Economische Effecten Infrastructuur*; the acronym was later changed to OEI) project was finished. It aimed at providing a standard for carrying out CBA's. This standard was called *OEI-leidraad*. In the following years, the OEEI standard was applied to all major infrastructure projects in the Netherlands. The goals of the project were to achieve more agreement about the methodological framework, and to define instruments for determination of effects.

An evaluation of experiences with the standard was published in 2002. It revealed that all parties concerned were quite pleased with the standard. However, many possible improvements to the standard were identified, such as:

- Pinpointing indirect effects in a theoretical, empirical and pragmatic sense

- Quantifying and monetising external effects
- Standardising more issues (e.g. rest value, risk valuation)
- Improvement of instruments for estimating socio-economic effects

With respect to the contribution to decision-making, it was concluded that costs and benefits that cannot be monetised tend to be ignored by decision-makers.

The following matrix is used to identify effects:

Table 1. Typology of project impacts in the Netherlands (Adapted from OEEI, 2000)

		Domestic				Foreign
		priced effects		non-priced effects		
		distributive	efficiency	efficiency	distributive	
Direct impacts	operators and users third parties	<i>Company profits Cheaper transport</i>		<i>Uninsured risk Travel time savings, safety, air pollution, noise annoyance</i>		<i>Travel time savings Air pollution</i>
Indirect impacts	Backward and forward linkages	<i>Strategic impacts Technological development</i>		<i>Regional disparities Effects of mitigating measures</i>		<i>Trade impacts Industry productivity</i>

Germany

The *Bundesverkehrswegeplan* (BVWP) is meant to develop a coherent transport investment programme every 5 to 10 years. The BVWP describes a partial CBA which is compulsory only for projects that are part of this national plan. It is mainly used to discriminate between infrastructure projects in states and to decide whether federal funds are used or not. The BVWP was updated for the last time in 2003. External effects like air pollution, noise, climate change need to be monetised; issues which have to be described qualitatively in the MCA include other environmental damages and effects on urban development.

2.2.1 HDM-4 in the new Member States

HDM-4, the Highway Development and Management System, is a software package for investigating road investment choices. This software system is used in a number of Central Eastern and Eastern European countries such as the Slovak Republic, the Czech Republic and Estonia. HDM-4 is a decision support software system for assisting road managers to predict future economic, technical, social and environmental outcomes of possible investment decisions concerning road assets. The HDM-4 system will assist managers in making effective investment choices at all levels. The possibilities may range from policy or strategic planning studies, through programmed allocation of funds to maintenance or improvement works on a network, to the detailed economic and environmental assessments of project options at the project level.

The International Study of Highway Development and Management Tools (ISOHDM), an international project to develop new road investment analysis tools, has continued since 1993. This project has been sponsored by the World Bank, the UK Department for International Development, the Asian Development Bank, the Swedish National Road Administration, and other sponsoring organisations, including PIARC member governments.

This software system has a strategy analysis application, which allows analysing the road system as a whole, to prepare long term strategic planning estimates of expenditure for road development and maintenance under various budgetary and economic scenarios. The main outputs are estimates of medium to long term budget requirements for the entire road system together with forecasts of pavement performance and road user effects.

2.3 A comparison with USA and Japan

Many countries outside the EU such as the United States, Australia and Asian countries like Japan and Taiwan, have guidelines or rules for CBA. It is mainly used for prioritizing or selecting projects. In some cases a CBA takes part in a broader appraisal method like MCA. The development in methods and guidelines for project appraisal is often induced by changes in transport policy (see Bristow et al. (2000) for examples). An example outside transport policy is the disaster of the oil spill of the Exxon Valdez in the US, which led to a guideline for contingent valuation of natural assets (Arrow et al. 1993).

In order to put the European approaches into perspective, in the following we discuss how assessment is performed in Japan and the USA. These are both countries with advanced economies comparable to those of the countries in Europe and therefore a comparison can be insightful. Furthermore, Japan and the USA each have a different assessment approach which makes the comparison more interesting.

2.3.1 USA: focus on environmental impact

There are no federal or state specific guidelines for project assessment in the USA. The USA only uses environmental and "environmental justice" (social equity) frameworks that are being used for a long time.

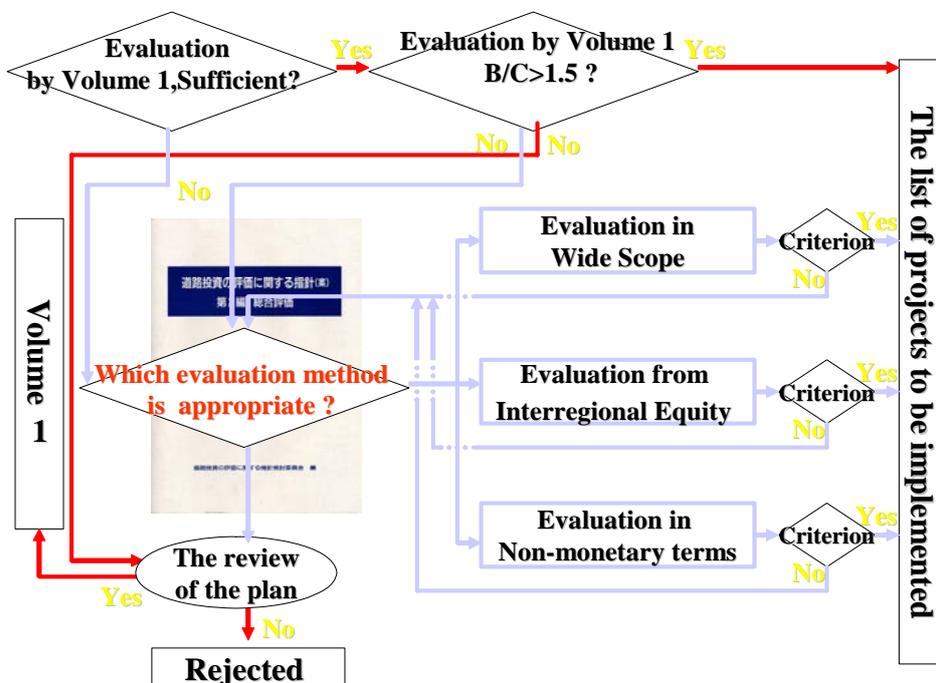
The environmental impact statement was first required by the National Environmental Protection Act (NEPA), and is required for most major transport projects. A standard practice of

sorts has emerged over the years, but the exact structure of the assessment varies from state to state since the state departments handle the transport projects in their state or at least provide major portion of funding for major projects. For example, California has stricter air quality standards, but the NEPA process is still capable of handling this. Environmental justice was a big topic at the end of the nineties, but seems to have faded away. According to representatives of the federal transport department it seems rather unlikely that a national policy or legislation on sustainability would pass in the U.S. Finally, they state that they have never been into rigorous cost-benefit analyses as in the UK. In their experience there has been no consistency in how this has been carried out in the few instances that it was used in the decision making process.

2.3.2 Japan – a two-level approach

Japan differs from the USA in that it has formal guidelines for CBA’s concerning road investment projects. Recently, an addition to the appraisal (Volume 2) was published, which captures more effects. The appraisal is done in two stages. First a CBA (following the guidelines in Volume 1), if a project does not meet the CB-Ratio criteria, the second appraisal procedure is used (Volume 2). This process is illustrated in Figure 2.

Figure 2. Road project appraisal in Japan



Source: Taka Ueda, on IASON website www.inro.tno.nl/IASON

When a project is rejected based on the first appraisal stage, a second appraisal stage is carried out which includes extra effects. These extra effects are grouped in three categories:

- Evaluation in a wider scope (extension of cost-benefit items)
- Evaluation of interregional equity
- Evaluation in non-monetary terms

An important element of the second stage appraisal is the evaluation of the interregional equity and especially the use of the Benefit Incidence Matrix (BIM, also called Morisugi Table, after the person who launched this approach). The goal of the BIM is to provide a clear overview of how the effects (costs or benefits) are distributed to different groups of stakeholders. The different classes of groups of stakeholders can be based on regions (see Figure 3), but can also be based on sectors like households, landowners and so forth (see Figure 4).

Figure 3. Example of a benefit incidence matrix of a certain project in Japan with the benefits distributed to regions

Benefit Incidence Table of Tokai-Hokuriku Motorway Project									
100 million euro									
	Highway Company	Region							Sum.
		Tyama	Ishikaw	Gifu	Aichi	Mie	Othes	Sum.	
Construction Cost	-167								-167
Running Cost	-4								-4
Toll Revenue	43								43
Time Saving	Passenger Car	30	1	114	8	0	3	156	156
	Freight Car	9	11	15	12	3	187	237	237
VOC Saving	Passenger Car	15	0	76	9	-1	4	103	103
	Freight Car	18	4	43	19	1	19	104	104
Toll Payment								-43	-43
Safety Benefit								3	3
Sum.	-128	(72)	(16)	(248)	(48)	(3)	(213)	560	432

注1) SCGEモデルで推計した波及便益は、大型車の時間短縮便益に含めており、この項目のみ広義の利用者便益として算出している。
注2) 地域別便益の概計は、事故減少便益が地域別に分けられないため、事故減少便益を含まない便益額を()内に記載した。

Figure 4. Example of a benefit incidence matrix of a certain project in Japan with the benefits distributed to sectors

Item	Stake-Holder	Transport Company	Household	Firm	Land-Owner	Government	Sum.
Investment Cost		-29					-29
Running Cost		-6					-6
Toll Revenue		10					10
Saving of OPC for Travel			5	7			12
Saving of Time for Travel			23	27			50
Price Changes in Commodity Markets			-3	3			0
Price Changes in Land Markets			-30	-22	52		0
Wage Changes in Labor Market			12	-12			0
Subsidy		25				-25	0
Tax			-1	-2	-12	15	0
Sum.		0	6	1	40	-10	37

注) 現在価値換算値

It is not uncommon for evaluation guidelines to contain formats for presentation, especially when it concerns the information that can typically be underemphasised in a CBA, like distributional or qualitative effects. Besides the Japanese BIM and the Dutch OEI-matrix shown above, the SE-matrix in the new RAILPAG guidelines (see EIB, 2005) is yet another example.

2.4 Conclusion

What can we learn when we confront the situation within the EU with the USA and Japan? First of all, approaches are vastly different. In the US states are autonomous in choosing their evaluation approach, whereas in Japan even the numbers to use in an evaluation process are prescribed in detail. Secondly, there is little research that could indicate which of the two contrasting approaches would be more effective. Have the Japanese made better investments than the US? Could this be due to their different approaches towards ex ante evaluations?

Possibly, Europe will end up choosing a position somewhere in the middle with HEATCO, as both total harmonisation as total fragmentation have advantages and drawbacks. A harmonised approach has clear transparency advantages but it is probably not wise to take harmonisation to cover all details due to subsidiarity problems and local cultural identity considerations. Therefore, local preferences and constraints will be central to the discussion.

3. Harmonisation: needs, possibilities and constraints

3.1 Introduction - Opportunities to improve guidelines for evaluation

A unified European transport network is essential to guarantee freedom of movement of goods and persons. The trans-European networks have gradually arisen as one of the driving forces for the achievement of growth, competitiveness and employment. By defining priorities at the Community level, the guidelines for the development of the trans-European network make it possible to channel Community funding towards projects with a high Community added value. Payments from the Structural Funds, the Cohesion Fund, the budget heading for the trans-European networks and the European Investment Bank are therefore co-ordinated with each other, but also with payments from the Member States, the regions and the private sector.

The development of the trans-European network should help to strengthen economic and social cohesion within the Community. In order to achieve this objective in the best way, efforts should be made to maximise consistency between the Community guidelines for the trans-European network and the programming of the relevant financial instruments available at Community level. Clear guidelines would help in attaining this objective.

According to the new guidelines the Commission will continue to develop improved methods of analysis for strategically assessing the environmental impact (as well as economic, safety and social impacts) of the whole TEN network (including all modes of transport). The objective of these improved methods is, by facilitating amongst others appropriate coordination, avoiding duplication of efforts and achieving simplification and acceleration of procedures for cross border projects and corridors.

The question to which improvements are necessary in evaluation practice; the following points can be mentioned:

1. Improving guidelines: a) improving state of the art in evaluation within Member States and at the European Commission and b) bringing these improvements into guidelines.
2. Harmonising guidelines. Notably in cross border projects it could be the case that guidelines of 2 countries are applicable. Now there is no process in how countries deal

with these. This could lead to either situations of low coordination (such as the Dutch Betuweline) or cases of prolonged coordination and, most of all, delayed decision-making (such as the Iron Rhine). Both contain a risk for the project to be undertaken.

3. Improving data and models needed for developing guidelines (making sure that points above can be executed). An improved understanding of methods will lead to convergence at EU level. For example, different methods are applied in determining the VoT in Europe. Through a comparison either best practices can be transferred or conversion rates can be established. Both lead to an improved situation from the perspective of evaluation of TEN-projects.

According to the new TEN guidelines new instruments comprise:

- A coordination mechanism for cross-border projects with a need for harmonised evaluation; in this context the issue arises whether subsidiarity is affected.
- A declaration of European interest: the Commission wants strategic EIA applied, but CBA as well; therefore guidance for TEN project appraisal is required concerning which impacts to include, how to measure and value them, and if possible to provide general values for use if no other data are available.

Accordingly, rules have to be set up that (TEN) projects have to comply with, in case EC financing is requested. In past research only little focus was put on a consistent framework for monetary values (VoT, value of health impacts). In HEATCO the framework will be broader and will cover a wide range of effects to be included in the evaluation. From the Dutch and Japanese experience we can learn that a structured presentation of effects (along the dimensions of different stakeholders and type of effects: direct, indirect, priced and non-priced) is helpful in developing guidelines.

Existing standards of cost benefit evaluation, such as the RAILPAG assessment and the Dutch OEI system, confirmed that uniform appraisal is indeed practically possible, and that it has clear advantages. In this chapter we give a theoretical framework for harmonisation of cost-benefit analysis. We do this by first discussing the purpose of cost-benefit analysis, as well as identifying advantages and constraints of harmonisation. We conclude by giving general requirements harmonisation proposals should meet.

3.2 Purpose of cost-benefit analysis

The central goal in cost-benefit analysis is optimal allocation: ensuring that economic resources are applied in ways that render as much societal utility as possible. Market and/or government

failures distort optimal allocation. Quite obviously, several kinds of market and/or government failure can be identified when discussing CBA. More precisely, CBA itself can be regarded as a way of dealing with market failure: Coordination problems keep individuals in society from evaluating and constructing certain goods and services that are to some extent public. This coordination problem is called hold-up. Transport infrastructure certainly suffers from the hold-up problem. CBA is used to identify which projects make society as a whole better off; in other words, if benefits exceed costs and if, in principle, those gaining from a project could compensate those losing from it. CBA can thus be regarded as solving a coordination problem. That is not to say, however, that appraisal itself is free of problems. Governments, solving market failure, can fail themselves. Government failure in transport project appraisal may include soft budget constraints, short term policy or inertia due to political cycles, delayed problem recognition, decision making and implementation causing pro-cyclical timing of investments (Friedman), under- or overestimating the influence of government itself on the economy, problems in dealing with vested interests (Olson), and bureau maximisation (Niskanen).

3.3 Advantages of harmonisation

Why harmonise cost-benefit analysis in the EU? It is clear that the hold-up problem is much larger for the EU than for individual countries. Current societal trends such as globalisation foster mobility and economic integration. Related is the rise of global environmental problems which is very clear in the case of transport. Problems such as carbon dioxide emissions and pollution cannot be solved by individual states. The need for integrated European transport projects calls for integrated appraisal; European integration causes hold-up in a European sense. It is this problem that could be solved by harmonised assessment.

Concrete problems in transport project appraisal identified during the HEATCO workshop of April 14th, 2005 included cost underestimation (Flyvbjerg), delayed decision-making (Iron Rhine) and compatibility problems due to differing methods for appraisal. These problems distort the allocation of resources: wrong decisions might be taken in the sense that projects are carried out which, ex post, do not turn out to be cost-efficient. Or the opposite: projects that might be rewarding are not carried out.

Many of these allocation problems can be solved, at least partly, by better transparency. This means that cost and benefits can be made comparable with, for example, those of similar projects (be it domestic or in other countries) or projects from the past. For transparency, compatibility is required. From a compatibility viewpoint, any standard could be attributed two

elements of value to: use value and network value. The former is determined by the degree to which costs and benefits are correctly assessed. The latter, however, is determined by the number of users of the standard. It is clear that a single standard would have a much higher score on this than separate standards, due to the transparency increase.

3.3.1 Borders

Another reason why harmonised assessment could improve allocation is borders. Borders distort assessment. Harmonised assessment enables internal borders to be replaced by external borders, the latter being much shorter than internal borders. The distorting effects will therefore decrease. Interdependencies between EU-member states can be better assessed, so that many more profitable projects can be assessed as such that would, due to their internationally spread effects, be out of scope in the national setting.

3.3.2 Time saving

A third cause for better allocation of resources is time saving. With the increase of mobility of citizens, the amount of international projects requiring appraisal will be on the rise. Nowadays, designing cost-benefit analysis equalling the number of participating countries in cost-benefit appraisal is necessary. This is problematic, as decision making procedures are (sometimes greatly) enlarged by it, pushing benefits of projects backward, which in turn can be to the disadvantage of the project. Harmonised guidelines would enable a single cost benefit approach, delivering faster project assessment procedures.

3.3.3 Cost estimation

As uncertainty about costs can lead to cost underestimation (Flyvbjerg), ex ante uncertainty should be reduced as much as possible. Although optimal transparency requires more than just harmonisation, harmonised appraisal could contribute to a large extent because it would increase the clarity about methods, values and assumptions that were used. Hence it would always be possible to have appraisals checked if there would be disagreement.

Related to cost underestimation is the budget allocation system within governments. This could function cost-inefficient: maximisation of budget instead of optimal allocation can be the preferred policy line by bureaucrats. This tendency can reduce the attention for cost effectiveness because given budgets have to be exhausted maximally. Again, harmonisation can contribute to better second opinion and hence better cost effectiveness.

The HEATCO Workshop of April 14th, 2005 confirmed that harmonised guidelines are to the benefit of both the EU and its member states. Several presentations indicated that harmonised guidelines could:

- improve the comparability of appraisals and leading to the selection of the best project alternative,
- save time (the Iron Rhine case),
- contribute to reducing cost underestimation.

3.4 Constraints

3.4.1 Support from member states

Harmonised appraisal might have difficulties itself. The subsidiarity requirement (organise on the lowest possible level of government) might not be met: that decision-making occurs centrally, whereas it could be done by member states. The EU as a decision-making unit experiences information problems; member states are closer to citizens. In a general sense, the EU experiences serious problems in exposing itself in a clear way towards its citizens. Member states might have more support and information. The EU is thus only to be responsible for policy if the coordination benefits exceed the distance to information and eventual lack of support. For example, it would not be wise to harmonise decision-making on transport projects that have no supranational relevance whatsoever. Generally speaking, transparency requires that the number of government levels that are involved in appraisal should be minimised.

3.4.2 Finance

If the EU finances or co-finances projects, support for harmonised guidelines will be higher than in situations where only member states contribute to funding. One could argue that coordinated funding might increase financial possibilities. Furthermore, optimal incentives require that correct appraisal should be a mandatory condition for funding.

3.4.3 Rent seeking

Furthermore, rent seeking should be regarded as a threat. Member states understandably seek to enlarge the share of the collective prosperity pie they receive, whereas only minding about the share reduces the total size of the pie because the goal of optimal allocation is pushed into the background. Having individual countries compete for EU funds might foster optimal allocation from a competition viewpoint, but only if appraisal is transparent and without distortions. National vested interests are understandable, but require close monitoring, and maximum consistency.

3.4.4 Path dependence

It was pointed out in the previous section that any harmonised standard, regardless of its quality, will be hard and costly to change. It is therefore imperative to arrive at an optimal standard. Existing evaluation instruments, methods, software and other tools used in current evaluation, could be hampering this as they are based on national evaluation. There is no reason to assume that these tools are automatically suited for harmonised appraisal. The alternative costs of applying existing tools to future harmonised evaluation can be high.

Another constraint is the existing differences between EU member states. These are large, as previous publications have shown. As the project seeks to provide harmonised guidelines that are acceptable to all parties involved, it is dependent on those involved to accept differing guidelines.

3.4.5 Cultural identity

Harmonised appraisal could, in theory, be harmful to national cultural identity if and when this is not or wrongly included in the appraisal. Cultural identities differ between regions and countries. For example, cultural divisions are frequently made between Northwest-Europe, Mediterranean Europe and Eastern Europe. Differences exist between countries, but as well within countries. The trade-off here seems to be national preference versus maximum transparency.

3.5 Requirements for the harmonised guidelines

What can be concluded from this section? The challenge addressed in the project is to design guidelines that live up to the following general requirements:

- Harmonised guidelines should allow us to address supranational projects and/or projects where EU funding is involved.
- the guidelines should allow a more effective decision making process to ensure that investments result in more efficient and sustainable transport systems.
- the guidelines should be based on transparent criteria for the prioritisation of investments and should allow for second opinion.
- in order to achieve optimal standardisation value, the guidelines should develop full support from policy makers throughout the EU.
- trade-offs between different harmonisation alternatives should be thoroughly investigated.

4. Issues in harmonisation of transport policy appraisal and costing

4.1 Introduction

In this chapter the most important issues will be discussed regarding harmonisation of project appraisal and transport costing. It should be stressed that these act as a basis for discussion both within the HEATCO consortium, with the EU and the stakeholders, ahead of decisions to be taken in the HEATCO project team on how to deal with the issues in detail. We have aimed to identify issues that cover different aspects of harmonisation within appraisal methodology. Based on the requirements resulting from the previous chapter, we identified issues that concern 1) the choice of an appraisal framework which is in line with our goal of an efficient and sustainable transport system and 2) the choice regarding the objects of harmonisation (measurement or valuation methods and the values themselves). Clearly, these choices interact closely. An attempt to capture this in an issue map is presented below. The discussion in the following sections will develop its own narrative, guided by this issue map and the topics discussed during project meetings and the HEATCO workshop of 14 April, 2005 (see Annex).

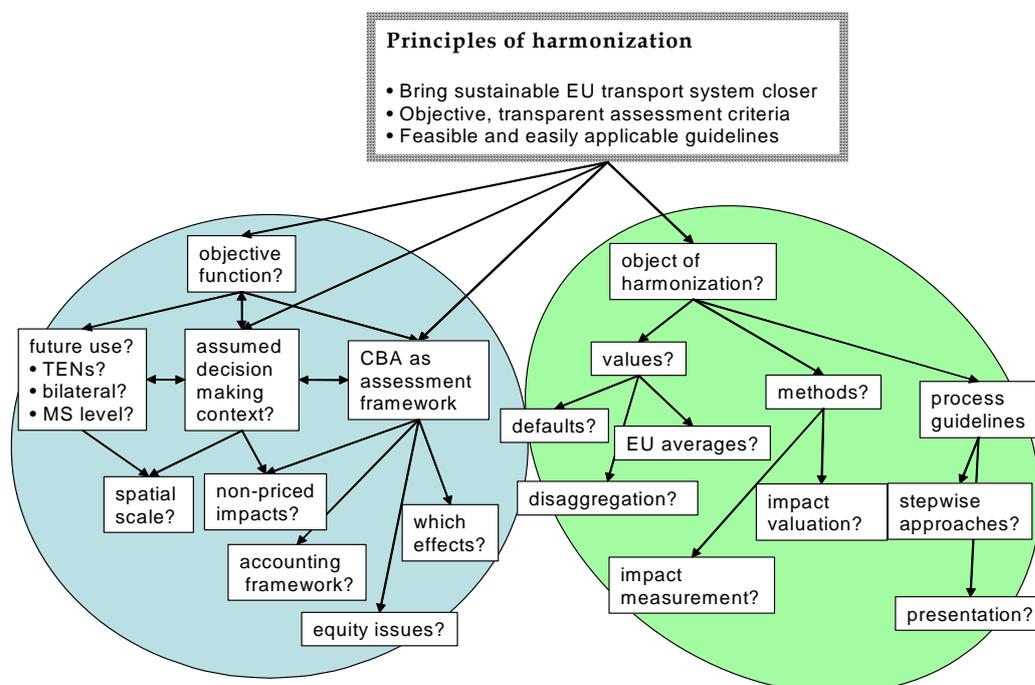


Figure 5. Issue map

4.2 Issues related to the appraisal framework

4.2.1 Harmonisation objectives

Reformulating the benefits of harmonised guidelines as identified in section 3 somewhat, we can distinguish three types of benefits:

- Firstly, they will allow the European Commission to compare alternative investments based on objective and standardised criteria and evaluation methods. This will result in a higher return on investment in the TENs. This is of interest in the case that the European Commission co-finances new infrastructure.
- Secondly, harmonised guidelines can ease multilateral negotiation processes between member states, where co-financing by the European Commission is not feasible. Often in this case cross-border co-operation is hampered or slowed down by diverging guidelines.
- Thirdly, as there will always be differences between countries as to the level of sophistication of their guidelines and methods for evaluation, harmonisation can propagate learning among member states.

Depending on which of these three types of benefits is taken to guide the harmonisation process, different forms of harmonisation will emerge. Identifying and promoting best practices will be critical to achieve the third type of benefit. In the first case, however, the emphasis will be on feasibility of implementation in all member states that submit requests for co-financing. The second case is an interesting one in the sense that one might wonder whether harmonisation at the EU level is needed at all. Here, the solution will rather lie at the meta-level, with methodological recommendations on how to achieve a harmonised approach between a number of countries.

In this project our primary purpose is to achieve the first type of benefit – in other words, we assume that the harmonised guidelines will be mainly used to allow an objective and state of the art evaluation of the impacts of TEN projects on the welfare of EU citizens. Our choices with respect to the different elements of harmonised guidelines, therefore, will be guided by the degree to which they are feasible for direct use among different countries, in a fair and efficient way.

4.2.2 Indicators of sustainability

In general it is accepted that the 3 pillars of sustainability (efficiency, environment and equity) are the basis to find indicators for the quality of a project. The problem of harmonisation of evaluation/assessment lies in the “tension” or “conflict of interest” between 3 dimensions of

sustainability: the economic gain in one country, equity concerns among regions and environmental effects. The following gives the areas of sustainability and a set (not necessarily exhaustive) of indicators, which can be used for the measurement of goal achievement.

Possible indicators of economy

- Welfare measured by Equivalent/ Compensating Variations
- Changes in Generalised Cost (VoT and factor cost)
- GDP
- Disposable Income Consumption
- Employment
- Contribution to Technical Progress
- Competitiveness of Industries

Possible indicators of environmental effects

- Air Pollution
- Noise
- Climate Change
- Disturbance of Biodiversity
- Upstream/Downstream Processes

Possible indicators of equity

- Personal Income Distribution
- Regional Income Distribution
- Fair Distribution of Burdens (Finance, Environment, Damage)

For different transport initiatives the 3 different dimensions are relevant; what does this imply for harmonisation, and if so what are the consequences in the assessment?

4.2.3 Assessment framework: MCA or CBA?

In principle we choose to start from CBA as an accounting framework. In EUNET the following was recommended to be included in CBA and MCA (see table below). Note that this table includes the effects that traditionally fall within a “transport CBA”. At present, the requirements to evaluate EU level major infrastructure projects require a broader base of criteria for comparison.

Table 2. Table of impacts from the EUNET project

Impact		CBA	MCA
Direct	Investment Costs	✓	✓
	System Operating and Maintenance Costs	✓	✓
	Vehicle Operating Costs	✓	✓
	Revenues/User Charges	✓	✓
	Time	✓	✓
	Safety	✓	✓
	Service Quality	x ¹	✓
Environmental	Noise	x	✓
	Local Air Pollution	x	✓
	Regional Air Pollution	✓	✓
	Global Air Pollution	✓	✓
	Landscape	x	✓
	Land Take	✓	✓
	Land Amenity	x	✓
	Special Sites	x	✓
	Severance	x	✓
	Water Pollution	x	✓
	Indirect Socio - Economic	Output	x
Employment		x	✓
Land Use		x	✓
Strategic Mobility		x	✓
Other Policy Synergy		x	✓

After EUNET, the IASON project has provided an extended approach and a description of how to include indirect effects in CBA. At present, therefore, all three EUNET categories of impacts can be treated from within a CBA framework. Thus, we propose that this comprehensive, or full CBA approach is used as a common framework of evaluation. In principle all consequences of a project that may have welfare effects need to be reported, including all environmental and indirect effects.

4.2.4 About including equity concerns in CBA

Results from IASON show that investment in infrastructure would lead to underdevelopment of peripheral regions; does this imply that (under certain circumstances) it would be favourable for accession countries and Europe to connect peripheral regions to the European network at a later date, because they would have more time to accumulate economies of scale and agglomeration effects and would benefit more in that case? In the choices on how to include distributional effects, the following should be borne in mind:

- It is important to refrain from taking over the seat of the politician; however, the line between analysis and political judgement may be a thin one.
- Much transport is an intermediate good. Tracing the *incidence* of benefits back to producers and forward to consumers, by income category is nearly impossible.

- Even decomposing the final benefits (leisure time savings etc) by income group requires a lot of data if it is to be done properly.
- In practice a high degree of averaging is likely to be required.
- The practical questions are how equity is applied - at regional, country or EU level? To some or all modes? Following what rules? A clear example is the appraisal of surface access to airports where the traffic composition and values of time are very different from the average project.

As we have seen in the Japanese guidelines and the new RAILPAG guidelines (EIB, 2005), but also in national guidelines within Europe (Tavasszy et al, 2001), a fixed lay-out for the effects improves the user-friendliness of the guidelines, the transparency of the presentation of the effects and thus the impact of the CBA results on policy making.

4.2.5 On the accounting framework in CBA

Our initial preferences are as follows:

- Discount rate: depends on the audience and should reflect the social time preference of that audience. From the HEATCO perspective the EC is the audience, as it is the EC that wishes to appraise its investment in the TEN. A single harmonised discount rate reflecting the EC's social time preference should be used.
- Life span of projects: should not be harmonised as project life is a context-specific characteristic and reflects, amongst other things, quality of construction, maintenance profiles and environmental conditions (e.g. freeze/thaw in north Scandinavia, flash floods somewhere else, etc.).
- Resource costs or market prices: Real resource costs should be considered as prices net of indirect taxes. In reaching this basis, however, the flows of taxation and other financial effects, such as tolls and revenue, should be explicitly shown in the appraisal framework, so that the predicted financial consequences for Governments can be presented within the financial appraisal.
- How should private finance be treated? Separate financial appraisal, private finance attractiveness as an MCA criterion (as per Greece), shadow price of public funds? Given the significance of funding and financing of projects, it is probable that the method will need to incorporate a means of extracting the relevant lines of the appraisal into a financial appraisal from the perspective of the financing agency.

4.3 Country-specific or common values

The HEATCO context – development of guidelines for project appraisal of Trans-European Network transport infrastructure projects – inevitably gives rise to consideration of situations where, in any given appraisal, different unit values for either costs or benefits are applied in different countries for the same impact. This would be the case, e.g., with work time savings that were predicted to result from a project occurring in two countries. Similarly, the situation may arise where pollutants emitted from transport fuel combustion associated with a project resulted in health impacts (e.g. premature death) in a number of surrounding countries that used different VSLs in transport appraisal. The same issue may relate to the treatment of resource costs where e.g. construction costs differ between countries. In all these cases a common issue to resolve is whether the local (national) level values should be used in the appraisal or whether some averaging of values across the EU or affected countries may be appropriate. Below we set out some of the main advantages and disadvantages that have been identified in relation to these alternative approaches.

As suggested above, there are two distinct approaches to the resolution of the issue of treatment of cross-country costs and benefits. These are:

1. The use of country – specific values
2. The use of EU - averaged values

Variations on these include:

3. The use of country – specific values subsequently adjusted on the basis of distributional weights determined at the EU level.
4. The use of values averaged over the individual countries impacted by the specific project being appraised.

A form of sensitivity analysis might result in a further interpretation:

5. The use of the highest and lowest country-specific values to bound the range of values used in sensitivity analysis.

The option evaluation below considers options 1 and 2 only, though it is generally straightforward to see how the arguments for and against the use of each of these can be transferred to the other variants.

4.3.1 Option 1: The use of country – specific values

Advantages are the following:

- Theoretical: The neo-classical basis for cost-benefit analysis (CBA) argues that economic values should be derived from the expression of individuals' preferences in the form of their willingness to pay in monetary terms. Willingness to pay is assumed to be income-constrained

and cost benefit analysis is concerned only with informing decisions related to economic efficiency, not equity. The implication of this is that the values derived from local (national or sub-national) populations under their resource constraints are likely to be most appropriate when valuing impacts in a CBA. However, with local WTP values there would also need to be some sort of equity/distributional process at the decision-making level.

- Practical: possibly, acceptance of the values used in project CBA by individual member state transport ministries and subsequent “selling” of the project to domestic stakeholders is more straightforward if it is widely understood that the values used derive directly from the national context.

Note, however, that at the national level it is rare to distinguish between values of impacts by the willingness to pay of the population. For example, consider a road passing through two areas – a rich area and a poor area. The road causes both noise nuisance and possibly accidents in both areas. The use of lower damage values in the poor areas, however, would be objected to, and in general the government applies a single value irrespective of which areas are affected.

The disadvantages are mainly practical:

1. Specific unit values may not exist for individual countries within the EU or may be either old, not reflecting state-of-the-art practice or be of poor quality for other reasons (e.g. low sample sizes in stated preference studies used to derive values).
2. Martialling of a range of different country-specific unit values for individual impacts may be a resource-intensive exercise.
3. The valuation of identical impacts using different local values may be considered to be morally indefensible. For example, differences in values of statistical life (VSL) between countries may not be acceptable to project decision-makers. Certainly, within one country it is not generally seen as being acceptable – see above.

4.3.2 Option 2: The use of EU - averaged values

Advantages are the following:

1. Production of a set of common EU values for individual impacts might simplify the appraisal process and provides transparency.
2. Use of common EU values may be more politically acceptable on the basis of perceived equity. In this sense we would be doing at the EU level, what each country does within its borders – take a value for each impact, averaged across its population.
3. Related to (2), the use of common EU values is consistent with existing practice in related areas of public policy such as environmental policy.

The disadvantages are both practical and theoretical. The main theoretical disadvantage is that this approach does not fully reflect differing preferences and resource costs. Thus, the project with the best net present value (with EU-wide average values) may in fact not be the sort of project that the locals want. For example, if an EU average value of time is used in Latvia, the value of time will be higher than the Latvian average. This may suggest that a motorway with high tolls (and more time savings) may be preferred to a dual carriageway with low or no tolls but smaller time savings. If one had used the local value of time one may have found that the dual carriageway is preferred instead - which accurately represents the underlying preferences of the Latvian people - whereas using average values may lead to the construction of a project that they do not want and will not use. One needs look no further for real world examples here than at the failure of some of the tolled motorways in Hungary to attract sufficient demand. The importance of using local values of time in modelling and appraisal (where tolls/fares are important) can hardly be exaggerated.

Practical disadvantages to using EU averages are the following:

1. The use of EU averages implies the use of project appraisal as a means of achieving distributional objectives. This may not be the most cost-efficient way of achieving these ends
2. Use of EU-averaged values in transport appraisal will conflict with values supplied by national level ministries. This may make a practical difference as to which (types of) projects are pursued by the ministries and so distort project selection.

4.4 Concluding remarks

Now, which research questions do the preceding issues provide us with? A first consideration is that of the type of benefit guiding the harmonisation process (comparability, faster policymaking, learning effects). Next, the choice of indicators for sustainability should be considered, with regard to economics, externalities and equity. A very important question is that of working with a MCA or CBA framework. CBA provides a much stronger instrument to decision-makers, but it requires more in terms of monetisation of effects. In this framework, it is very important to avoid double counting of effects. CBA poses a particular equity question: translating benefits back to producers and forward to consumers by income category appears very difficult. As well, the choice of level for equity comparison.

The accounting framework, furthermore, provides very important questions. Should the discount rate be harmonised, and if so, at which level? Would the life span of projects be harmonised, and if so how to account for rest value after the project life span ends? The initial choice is not to harmonise, because of locally specific defining influences on life spans of projects. Next, do we choose resource costs or market prices? Because of the disturbing effects of taxes, resource costs appear best. A last framework question is how private finance should be treated – an increasingly relevant matter when looking at the rise in PPP projects.

Valuation is a further source for consideration. Should country-specific or EU-averaged values be used? Or maybe variations, such as distributionally weighted country-specific values on EU level, values averaged over individual countries as impacted by the specific project, or using the highest and lowest country-specific values to set boundaries within which there can be a range of values? Considerations apply with regard to subsidiarity, transparency, acceptance by local policymakers and stakeholders, efficiency, consistency with existing EU policy in other fields, the amount of input required to arrive at values, to name the most important.

The next step in the project is to make the choices with respect to the approach to harmonize appraisal practices (whether through values or through methods employed to determine values) based on detailed discussions for each specific impact category. The cross-cutting issues and trade-offs treated in this deliverable should assist in developing a balanced set of guidelines for evaluation.

5. Conclusions and recommendations

Guidelines for transport project assessment have many faces – they may be very detailed (Japan) or only general (US) and sometimes even non-existent – the current EU practice is that of no institutionalised evaluation approach, let alone harmonised. Now, which level of harmonisation is optimal for evaluating transport projects? We identified various advantages as well as drawbacks of harmonisation. Advantages include a high network value of standardisation, transparency, time saving for decision-makers, and less borders. However, constraints exist: maximum support from member states is needed to make harmonised evaluation work; the European financial budget is relatively low; rent seeking should be avoided; any evaluation standard will be hard to change; and issues exist where harmonisation might harm cultural identity or where the subsidiarity principle is violated.

These considerations were translated into requirements for harmonisation topics. Harmonised guidelines should allow us to address supranational projects and/or projects where EU funding is involved (more precisely, the main candidates for harmonised assessment appear to be TEN-evaluations). They should allow effective decision-making in the sense that results of ex ante evaluation of projects should be as close as possible to results of ex post evaluation, which has the benefit of hindsight. There should be transparent criteria that allow for second opinions. Support from policy makers is essential.

Several topics were identified that should be researched along these criteria. Main questions to be addressed include the following. First of all, it will be important to choose either MCA or CBA as a basis for assessment. MCA has the disadvantage that not all effects are labelled with a price; CBA, on the other hand, forces adding prices to effects that might be less realistic. The current understanding is we are using CBA, with the note that one needs to go beyond only transport CBA by including indirect effects in the analysis.

Another important question is that of the treatment of equity. It would be unwise to take over the seat of the politician when evaluating project proposals. Therefore it is perhaps best to take economic utility theories as reference rather than to make political choices ingredients of the assessment. For example, one could choose between Pareto optimality (maximise the sum of individual utilities) or Rawlsian optimality (maximise the minimal individual utility). In either case, it would be wise to indicate the utility basis of research results, as well as how it scores on

the equity/efficiency trade-off. For example, evaluating projects in peripheral regions may have very positive results in terms of equity, but it might be at the cost of labour mobility and total income. Finally, it should be clear whether we want to prescribe methods for evaluation of equity scores, or limit ourselves to prescribing the format for presentation of equity results. The latter seems more appropriate in guidelines for (comprehensive, or full) CBA.

Thirdly, the question of whether to take local, national or EU values should be answered for those indicators and prices that are to be included in the analysis, and where individual preferences have to carry a price tag. A trade-off appears to apply here: standardisation and hence using EU-wide values has clear advantages in terms of transparency, but might be far from actual individual preferences. In any case, it will be important to indicate how proposals for use of values and preferences are located on this trade off curve. Our present recommendation is to use local values as much as possible.

Initial stances were taken in this paper; however, this paper is not the place to make choices for the research in the HEATCO project. Rather, it is meant to indicate the kind of choices that need to be made to arrive at harmonised guidelines, and what these choices depend on, which trade-offs exist that should guide the upcoming research. Within the HEATCO project, these choices will have to be made and clarified.

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ANNEX: Minutes of HEATCO workshop, 14 April 2005

This Annex contains the proceedings of the first HEATCO international workshop held in Brussels on 14 April 2005. This workshop was attended by around 60 people including representatives from different member states' national governments.

Goal of the workshop

The goal of the workshops in this project is to assist in building up a certain degree of consensus between researchers and the potential users of project appraisal guidelines (national and EU level policy makers and other relevant stakeholders) throughout the project. More specifically, by organising interaction with the users we wish to achieve convergence between researchers and users of guidelines in our understanding of a) the purpose of the harmonized guidelines, b) the degree to which guidelines should be harmonized and c) the elements of the appraisal process where new practices should be proposed. Within the boundaries of the HEATCO project timeline, budget and specification of work, the research team intends to respond to questions and comments posed in the workshops by the users of harmonized guidelines.

Structure of the workshop

The workshop was structured in four different parts, part A-D.

In Part A, the goals of the HEATCO project were explained. As an example of EU level harmonization in assessment guidelines, the new guidelines for rail project assessment "RAILPAG", recently issued by the EIB, are presented.

In part B "Current practice in assessment", the intermediate results of the HEATCO project are presented, which includes an inventory of the current state of practice in assessment in the EU25 plus Switzerland. In addition, specific assessment issues are presented in more detail in the following areas:

- Value of time and congestion
- Infrastructure costs
- Value of health damage and safety/accident risk reduction

Part C Experience with harmonisation in member states: Three different presentations provide a broad perspective on the practical experiences of policy makers in the field, with reflections on the requirements for harmonised guidelines:

- The Iron Rhine-case, a cross-border rail project in Belgium, The Netherlands and Germany, where negotiations on the assessment methods went on bilaterally.
- Overview Effects Infrastructure, an account of the process to build up harmonized guidelines for assessment (OEI) within the Netherlands
- Uncertainty in investment costs of large scale infrastructure projects, a presentation on the consequences of lacking standards for assessment of investment costs.

In the final Part D, the speakers and participants discussed about all afore mentioned issues in a panel discussion and gave recommendations for the next stage of the HEATCO project.

Part A: Setting the scene

The goals of the HEATCO project are explained and a presentation of RAILPAG is given, which is an example of harmonisation at the EU level concerning rail projects.

Issues, comments and questions concerning the Goals of the HEATCO project

- As few countries have a similar approach towards evaluation of infrastructure, having something of an appraisal method in a European sense would already be a major achievement. Are the present goals for HEATCO not overambitious, considering these circumstances? Also new member states should be attracted to join the next workshop.
- Note that direct costs and benefits should get the most attention. However, ‘soft factors’ (those with effects that are hard to monetise) can be decisive and hence deserve full attention. Non monetised effects are most critical to policy makers.

Issues, comments and questions concerning RAILPAG, an example of harmonisation at the EU level concerning rail projects

- How Flexible is the RAILPAG approach? The RAILPAG approach provides a clear overview on how the benefits and costs are distributed over the stake-holders (Stakeholder/Effect matrix). The main benefit of the SE-matrix is clarity. It is possible to distinct between users in different countries or any other user distinction one would want. However, the EIB feels that distinction between nationality is not correct in essence.

- RAILPAG uses country-wise sheets regarding economic influence of international railway lines (for more information see www.RAILPAG.org), however this is only a first attempt. It is not intended to divide economic effects by country.

Part B: Current practice in assessment

The first results of the HEATCO project are presented, the current state of practice in assessment in EU25 plus Switzerland. Furthermore, some specific assessment issues are presented in more detail:

- Value of time and congestion
- Infrastructure costs
- Value of health damage and safety/accident risk reduction

Issues, comments and questions concerning the current practice in assessment

- The tradition in the UK used to be having a limited form of CBA. Nowadays more diverse sources of costs and benefits are treated. With this change in assessment in mind, what is harmonisation? The focal point of the harmonisation should be the possibility to compare. More transparency should be central; this does not mean, however, that we should directly opt for having one single method.
- The current state of practice is that all countries tend to be focussed on road projects. Because we want to include other types of projects, like rail and inland shipping, we need a flexible framework. A suggestion is to begin with harmonisation of the general methods, then look into mode-specific issues. Secondly, HEATCO can provide references, individual countries can deviate from this, but they have to argue why. To be able to compare different CBAs from different countries is the most important objective from the EC perspective, rather than the use of the same values.
- The participants believe that transparency and access to the CBA of projects to the public is important (available on the Internet for example). This recommendation could be included in the guidelines for presentation. The level of public scrutiny can contribute greatly to the level/quality of the CBA.
- Apart from the harmonisation of methods and values, an other important factor is the question how to forecast demand for the new infrastructure project. This should be made transparent as well. However, this is outside the scope of the HEATCO project.
- Looking at the problems connected with monetizing of effects, MCA should be used on a more widespread basis. This is more important than having more analysis of more cost and benefit sources. How to deal with the limitations posed by CBA? It is answered that the difference between CBA and MCA is less than what is often believed. But one has to realise

that the values used in the CBA (e.g. value of time, etc) are not just weighing factors. The central process in this is the one between the technical side of the assessment, and the interpretation thereof.

- Finally, there is a practical issue how to incorporate the technical CBA in the total assessment procedure. HEATCO should pay attention to the way the assessment process is embedded in the broader policy making process.

Issues, comments and questions concerning value of time and congestion

- A representative from Poland states that the information for Poland is missing. This is because the consortium did not find a representative for Poland to complete the questionnaires.
- What is the importance/role played by the value of statistical life? It is explained that forecasting traffic should be based on behavioural theory in order to have a proper assessment.
- It is possible to use the same Value of Time values for all countries and correct them by income differences, rather than to use completely different values. This would comply with the wish of policy makers to rate all citizens equally. But this doesn't solve the issue of distributional weights, should we weigh poor people more than the rich?
- Considering alternative methods and methodologies to determine the Value of Time, bear in mind that ranges of the values used in the EU are helpful to decision makers.
- How about shadow prices, for example lower wage costs in Eastern Europe? And how do you account for, say, the small chance of 20 workers dying during construction of a project? It is answered that the building company will internalise this. There is need for bringing consistency in this matter within the project.

Issues, comments and questions concerning infrastructure costs

- Harmonisation of infrastructure costing is a relatively easy issue, but the devil here is in the detail. For example, are disruption and delays in the construction covered sufficiently? And what about the taxpayer's point of view (excess burden)? What about accidents and insurances, this is especially relevant in tunnel projects. In the current practice, it is normally not distinguished.

Issues, comments and questions concerning value of health damage and safety/accident risk reduction

- A question is raised how the effects are valued. It is answered that current practice for noise annoyance is to use hedonic pricing. It is suggested to differentiate noise/pollution costs

according to the location where emissions take place. There is agreement on this, but hard to accomplish in a practical sense.

- The issue concerning total harmonisation of values versus different values is raised. Harmonisation with differences and transparency is desired. It would be good to include national preferences/differences with respect to the value of a statistical life, for example the risk taking behaviour is different for different countries and therefore the value of a statistical life can be different. These are things you should not harmonise. It is explained that a statistical life is not the real value of a life, but the willingness to accept small risks. Only the method should be harmonised.

Part C: Experience with harmonisation in member states

Three different presentations give a broad perspective on the experiences in the field concerning harmonised guidelines:

- The Iron Rhine-case, a cross-border rail project in Belgium, The Netherlands and Germany
- Overview Effects Infrastructure, guidelines for assessment (OEI) in the Netherlands
- Uncertainty in investment on large scale infrastructure projects

Issues, comments and questions concerning the Iron Rhine case

- This presentation rightly stresses the fact that it is important not to underestimate the importance of legal aspects. Furthermore, there are more relevant issues which were not discussed during this workshop so far: reliability of transport, pollution and so forth.
- MCA was used in the recent analysis of the Iron Rhine case. The audience asks why a CBA wasn't used in the recent analysis. The speaker explains that the CBA was already known in 1996 and proved the project to be viable. MCA was used to evaluate the different project alternatives.
- It is asked what difference harmonised guidelines would have made. It is stated that it would have saved a lot of time in the process. The values were harmonised through bilateral negotiations. For some values one had to choose between different national valuations and for other values a new agreed valuation was used. For example, the values for noise used were totally new values and not any of the values used in Belgium, The Netherlands or Germany.

Issues, comments and questions concerning Overview Effects Infrastructure (OEI)

- The process of developing OEI has greatly improved the appreciation of policy makers for formal and standardized methods of assessment. Also, it has led to a convergence of

valuation practices and a better understanding of risks and lacunae in our knowledge about impacts of projects.

- A representative from the UK government states that the UK framework is similar to the OEI. An interesting idea, which hasn't been done in the UK, is to evaluate the framework in European context as has been done in The Netherlands.

Issues, comments and questions concerning uncertainty in investment on large scale infrastructure projects

- What about the relationship between prices (tolls) and cost overruns? The feasibility of the project is dependent on the forecasted demand and the forecasted demand is dependent on the price levels. For example, one could adjust price levels (e.g. toll levels in the channel tunnel) to influence the demand and in order to make the project more feasible.
- The issue is raised that it is hard to translate costs and benefits in contracts. Contract costs will be high if you want to hedge all risks involved. Apart from the fact that you will probably need a major legal effort to develop such contracts, the private sector demands a higher remuneration for taking risk. It is answered that contracts are already huge.
- Estimates of the feasibility of projects tend to be more realistic if the party responsible for the estimation is also made responsible for the outcomes and final consequences of the estimation. On the one hand there is the estimation of the infrastructure costs, in which private companies can be made responsible for the risk of cost overruns as they can control these costs. On the other hand there is the forecasting of demand. For the latter, there are too many uncertainties which influence demand. Private companies have no control over these factors. Therefore, it does not help to improve the quality or realism of the assessment of a project to make private companies responsible for the demand forecasts and thus the cost overruns if the actual demand is too low. In sum, it is important to have a good incentive system to make sure that the estimates are as realistic as possible.

Part D: panel discussion

Based on the presentations and issues raised on this day, the chairman of the panel states four different questions to start the panel discussion with:

1. Is it agreed that guidelines are useful? Should they be mandatory or advisory and to which type of projects do they apply?
2. What should we harmonise? The framework, methodology or the values themselves?
3. Where should the guidelines begin and end? For example, should it contain guidelines on data collection or modelling and forecasting?
4. How do the guidelines fit in the broader decision making process of assessment?

Providing more transparency and clarity in the comparison of large scale European infrastructure projects, is the added value of HEATCO. Adopting the SE-matrix (RAILPAG) or Benefit Incidence Matrix (Morishugi Table) can be beneficial.

Countries can learn from each other by disseminating their best practices in valuation. For example, reliability is a relatively new issue which is not valued in many countries at the moment. In the Netherlands a new method to include this has just been developed. Furthermore, we should combine experiences especially when it concerns modelling. HEATCO should, however, not deliver restrictive guidelines but a flexible approach. Moreover, HEATCO aims at guidelines which integrate all modalities (rail, road, inland shipping). Harmonisation should take place over modalities as well, which requires more general guidelines. The goal is to find the right balance between flexible and general applicable guidelines on the one hand and on the other hand usable guidelines on the project level which are defined clearly. Finally, the HEATCO guidelines should be consistent in the overlap with the just developed RAILPAG guidelines. The EIB guidelines are not as concrete as HEATCO should be.

HDM (a modelling suite for assessment) is used in the Czech Republic and many other Eastern European countries. The HDM is a detailed approach and allows to take into account country-specific issues. The new harmonised guidelines will provide recommendations on which methods and valuation techniques should be used. This can probably be incorporated into HDM. It is not the goal of HEATCO to produce a detailed modelling suite for assessment similar to HDM. In countries like the Czech Republic, where existing national assessment methods apply, there could be more resistance towards European harmonisation.

Overall the workshop has taught that countries can benefit from harmonized guidelines. Above all, such guidelines should not interfere with or limit existing national practices but be an add-on to what is available and sufficiently flexible to provide additional information to decision makers at state and EU level about the added value of projects. For this to materialize, the HEATCO research team needs to consider the positioning of the guidelines within the wider project assessment cycle and the policy making process. In the workshop, suggestions were given for the many methodological choices that need to be made when developing the actual guidelines for the various impact categories.

Closure

The chairman expresses his gratitude to the speakers and the audience for their constructive contribution. The following HEATCO workshop is expected in April 2006 and will present harmonised guidelines for the various impact categories. The chairman closes the meeting.