Infrastructure development for the Transeuropean Transport Networks

Improved ex ante evaluation methods through comparative analysis of MIRT and TEN-T

Niels Heeres
University of Groningen
Faculty of Spatial Sciences
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Improved ex ante evaluation methods through comparative analysis of MIRT and TEN-T

N. Heeres
s1396803 (nielsheeres@gmail.com)
Supervisor: Dr. F. Niekerk
Co-supervisor: Dr. Ir. T. Tillema

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Summary

Since the early 1990s the European Union has intended to develop a comprehensive, multimodal and sustainable transport network (TEN-T) covering its whole territory, as part of the common transport policy of the Union. Recent publications have shown that the development of this network is not meeting its objectives. Therefore the EU is looking for ways to improve the development of the network. It appears that one of the aspects that is slowing down the development of the Transeuropean Transport Network in the desired directions is the lack of a sound evaluation and selection methodology. In its search for possibilities to improve the planning and construction of TEN-T, the EU has indicated that the evaluation and selection methodology is one of the elements that may need to be reconsidered.

In relation to the above problems, this thesis intended to be able to make recommendations about possible points of improvement on the manner the ex ante evaluation and selection of TEN-T projects is handled by the European Union, through comparative analysis with another infrastructure programme: the MIRT-programme in the Netherlands. The research question involved in this thesis was the following: *In which way can ex ante evaluation methods for the purpose of the selection procedures of proposed projects for the Transeuropean networks (TEN-T) be improved by learning from positive experiences with ex ante evaluation and selection of projects in the Dutch MIRT-programme?*

The research in this thesis has been divided into three main parts. The thesis started with a theoretical part in chapter two. The objective of this part has been to develop a theoretical framework that can serve as a frame of reference for the further examinations in this thesis. The theoretical framework consists of three dimensions: (1) the policy-making perspective involved, (2) the scope of evaluations and (3) the procedural design of the evaluation studies. The theoretical part was based on an extensive literature study. Secondly, an empirical part involved the analysis of MIRT and TEN-T through the application of the three dimensional theoretical framework. In addition to these examinations two specific TEN-T projects were studied. The A2 Maastricht project from the Netherlands and the City Tunnel project from Malmö, Sweden were studied in chapter five, with specific attention for the way ex ante evaluation and selection have taken place. The empirical examinations involved the analysis of specific policy and project documents as well as in depth interviews. The empirical part was followed by an analysis and discussion on the findings of the previous sections. At the hand of the theoretical framework these findings were compared in chapter six to come to a conclusion in the final chapter of this thesis.

From the examinations of the planning and ex ante evaluation framework for the MIRT-programme it has become clear that it has recently been strengthened by an attempt to improve the position of strategic and especially tactical considerations within the development of MIRT-projects. Furthermore, the MIRT framework is characterized by special provisions for public participation and has a theoretically sound procedural design for ex ante evaluation studies. In the TEN-T system there appeared to be a mismatch between the strategic visions of the European Union on the development of the network and the common European interest on the one hand and the individual interests of the Member States on the other hand. Consequently to the nature of the European administrative system the achievement of the common EU objectives appeared to be lacking behind. In this system, inspired by the principle of subsidiarity, the Member States are responsible for the operational development of the TEN-T infrastructure. Currently, bottom-up interests often prevail over the strategic vision of the EU. This situation has been confirmed by the case studies. The primary incentive for developing the TEN-T projects is the individual interest of the Member States. Furthermore, in the contemporary situation the European Union is only guiding the ex ante evaluations that are primarily performed by the individual Member States. Despite the importance of solid evaluation systems the EU only has a reactive position in the evaluation chain.

To ensure future development of TEN-T in accordance with the EU objectives, the balance between top-down strategic planning and bottom-up operational planning needs to be readressed. This can be achieved by means of public-public cooperation on the tactical conversion of strategic objectives. An instrument from the Dutch MIRT-framework that could play a role in finding a balance between central and decentral interests is administrative deliberation between the European Union and national administrations on the development of TEN-T projects. A second recommendation is the introduction of a proactive institution to improve the evaluations that are taking place for the purpose of the Transeuropean Transport Network and to enhance cross-border planning and cooperation. This recommendation is inspired by the role of the Netherlands Commission for Environmental Assessment within MIRT, although the proposed institution should have a broader intention in the sense that it should take into account environmental evaluation issues as well as socio-economic and other relevant issues. Furthermore it should consider the complete evaluation cycle (ex ante – ex post). Successful implementation of these recommendations would primarily involve institutional and social-cultural adaptations from both sides involved.

Preface

In early 2009 I was looking for a subject for my final thesis in Environmental and Infrastructure Planning. My attention was caught by a small news item on the proposed changes to the planning of the Transeuropean Transport network of the European Union. The idea of a comprehensive, multimodal transport network covering the whole territory of the European Union immediately appealed to me and I decided to write my thesis about it. In the Dutch MIRT-programme I found a frame of reference for the development of recommendations on the improvement of the TEN-T methods evaluation and selection. During the construction of this thesis, it appeared that my initial conception about the Transeuropean Transport Network and the objective of my examinations needed to be refined many times. The development of a comprehensive infrastructure network for the common interest of the European Union is not as straightforward as I had imagined. Nevertheless, it has been an interesting process to get a grip on the actual methods and relationships involved in the creation of a comprehensive European infrastructure network. This thesis is concluded with recommendations on improving the ex ante evaluation and selection of projects within the planning framework of the Transeuropean Transport Network.

Besides the time that it has taken me to complete this thesis, it has also given me the opportunity to learn what it takes to research an issue in depth and how to write a well-considered document. I think that this is one of the things that I have missed during my period as a student at the University of Groningen; a period that comes to an end with completion of this thesis. My period as a student has been a wonderful period and has given me many opportunities to learn and develop myself, during my studies and also in my personal life. The combination of studying and many extracurricular activities have made it an enjoyable and valuable experience. There are two moments that I would like to mention here (in no particular order), I consider them to be the highlights of the past six and a half year. At first, my time as a member of the board of the faculty union of Spatial Sciences, Ibn Battuta. Ibn Battuta has played a special part in my student life, which culminated in my year in the board. Together with my fellow board members we had a magnificent and successful year. Secondly, I would also like to mention my time as an exchange student at the University of Auckland, New Zealand. Again, a wonderful and valuable experience, this time in an amazing environment.

My period as a master student and writing this thesis have inspired me to continue my time at the university. I am looking forward to starting a PhD in 2010. Now that this thesis is

completed I would like to express my thanks to my supervisor, Femke Niekerk, for the inspiration, guidance and advice provided. I also would like to thank my second supervisor, Taede Tillema, as well as all the people who have been helpful in interviews and conversations.

Over past the six and a half years I have met many new friends and inspiring study mates. It is too much to thank all of them personally here; nevertheless I am very grateful to each of them. Finally, I would like to thank my parents and sister for supporting me all the time and Anne for helping me get up early and listening to me.

Niels Heeres Groningen, December 2009

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List of figures and tables

Chapter 1

Introduction

1.1 Introduction

Since the introduction of a common transport policy during the 1980s, the development of a Transeuropean transport network (TEN-T) is on the agenda of the European Union. This policy aim was anchored in the Treaty of Maastricht (Commission of European Communities, 1992). According to the contemporary objectives the TEN-T infrastructure network should have the dimensions described in table 1.1. A visual overview of the network can be found in appendix 1. Besides the dimensions described below TEN-T also contains the Motorways of the Sea-project, aiming to stimulate sea transport as an attractive alternative to land based transport, and the Galileo-project on satellite navigation.

Roads	97.500 km
Railroads	106.000 km; including ca. 32.000 km high speed rail
Inland waterways	13.000 km
Ports	404
Airports	411

Table 1.1 TEN-T in figures (Smets, 2009)

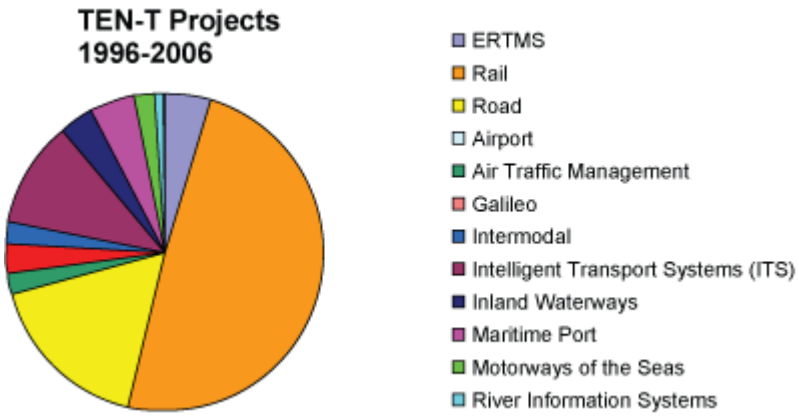

Figure 1.1 TEN-T projects, modal distribution (TEN-T EA, 2009)

The core of the Transeuropean transport network is formed by a selection of 30 so called Priority Projects. These projects are considered to be essential for the integration of the transport infrastructure network and deserve special coordination, according to the EU (EC, 2009). An overview of the priority projects can be found in appendix 1.

With the realisation of the objective of the common transport policy, by means of a Transeuropean transport network, the EU aims to accomplish one of the objectives laid down in the Treaty on the European Union; strengthening the internal market of the Union. The presence of well functioning infrastructure, in the form of an integral, multimodal transport network, is seen as an essential precondition to reach this policy objective. It is supposed to strengthen economic and social coherence (EC, 2009b).

However, the development of TEN-T is not working out with the desired prosperity. Many projects appear to take off rather difficult and are lagging behind their intended schedule. Related to this there are often problems with acquiring the required funds for the projects and, recently, sustainability considerations have started to play an ever more prominent role. With this, the ambition of the creation of an integral European transport network over the planned time span is in danger. The coherence in the network is still hard to find and TEN-T is currently more 'a patchwork of national priorities' (Smets, 2009) instead of the desired integrated transport network.

On February 4th 2009 the European Commission published the Green Paper titled *'Towards a Better Integrated European Transport Network'*. This report raises a number of questions about the development of TEN-T as it has taken place since the official starting point in 1992. A question that is asked is the future direction the development of the network should take. In addition to this, interested or involved people and institutions are invited to give their opinion on the future directions of TEN-T.

One of the problems described within the report mentioned above is the lack of a sound ex ante evaluation methodology for the purpose of the selection of possible TEN-T projects. In relation to this, problems are also signalled on the issue of connecting the priority projects to the rest of the network and completion within the proposed timeframe.

> *"By and large, the TEN-T priority projects cover major rail, road and inland waterway axes that traverse several Member States. Chosen in 2004 for their high relevance to transnational traffic flows, cohesion and sustainable development objectives, they were subjected to a common socio-economic evaluation. However,* ***questions still arise, for example, as to the methodological soundness of their selection****, the potential for interconnection and extension (both geographically and modally), the approach to coherent capacity and quality*

standards, and the means of better stimulating their completion within the planned timeframe." (European Commission, 2009)

1.2 Research objectives

From the above it may be concluded that doubts exist about the methodological soundness and correctness of the evaluation and selection methods applied by the European Union for adding projects to the Transeuropean Transport Network. A well functioning evaluation and selection framework should form the basis for the development of an efficient, Europe wide, infrastructure network. The objective of this thesis is to propose improvements for the TEN-T ex ante evaluation practice. The possible improvements will be distilled from the ex ante evaluation framework of the MIRT-programme in the Netherlands.

The MIRT-programme is the Dutch Long-Term Programme for Infrastructure, Spatial Planning and Transport. It has been introduced in 2008 as a modification of the MIT-programme (see chapter 3). The choice for the ex ante evaluation framework of the MIRT-programme as reference for the development of improvements for the TEN-T methods of operation is inspired by multiple assumptions. Firstly, the MIRT and TEN-T are comparable programmes in the sense that they share the aim for coherent investments in infrastructure. The objective of MIRT is to increase the coherence in investments in major spatial projects, infrastructure and (public) transport (Ministry V&W and VROM, 2009; Ministry V&W et al., 2009). In this respect, it is possible to consider both MIRT and TEN-T as development programmes for infrastructure networks aiming at coordinated and coherent investments. Secondly, the planning framework in the Netherlands and specifically the framework for the MIRT-programme is well developed. This includes intensive ex ante evaluation studies in the pre-decision making phases, using well-developed evaluation methods and instruments. Finally, the MIRT-programme is very well approachable for research, partly due to the open methods of operation it stands for.

Since the year 2000, in the Netherlands the obligation exists to apply a standardized form of ex ante project evaluation in the case of major infrastructure projects. By means of the introduction of a broad cost benefit analysis (OEI/CBA) the Dutch government has sought to improve the process of decision making. The introduction of the obligation to perform a standardized CBA has appeared to be a methodological improvement. In general, the quality of ex ante evaluations for the purpose of planning of major infrastructure projects in the Netherlands has been improved since the introduction of standardized CBA (Annema et al., 2007).

The MIRT-programme is characterised by a comprehensive reconnaissance phase, in which projects are being evaluated extensively on different facets. Only after extensive reconnaissance and evaluation, projects pass to the plan study phase. For the direction of projects within this structure the MIRT-programme has an extensive and transparent framework of rules, in which the requirements regarding ex ante project evaluation and selection are described. To do so, the framework of rules describes the process that a new MIRT-project (starting in 2009) has to complete, with the intention to make the planning process and programming by the government followable by everyone (V&W and VROM, 2009).

This thesis aims to contribute to the future development of TEN-T. In particular to the ex ante evaluation and selection procedures, which currently appear to fall short for their purpose, by examining how the ex ante evaluation methodology could be improved. By extracting elements from the Dutch practice and experiences in relation to the MIRT-programme, recommendations will be made about possible improvements to the process of evaluating and selecting projects for the TEN-T programme.

1.3 Theoretical backgrounds

The aim of this section is to briefly introduce the position of the subject of this thesis within the scientific land use planning field. From the perspective of the rational planning tradition an ideal typical planning model can be described. Within this model, used by many, ex ante evaluation of policy alternatives is considered to be a separate stage in the planning process taking place in advance to the decision on the preferred plan. Kaiser et al. (1995: p. 38) provide the following model[1]:

1. Goals and objectives formulation
2. Design of alternatives and plans
3. **Evaluation of consequences**
4. **Choice of preferred plan**
5. Implementation of adopted plan
6. Monitoring and feedback of outcomes
7. Plan revision (feedback step)

[1] See for example also Linden and Voogd, 2004

Ex ante evaluation procedures are a decision-supporting instrument for policy makers. Ex ante evaluation procedures aim to strengthen the communication between policy makers and experts and to, consequently, improve the quality of land use planning. Policy evaluation is therefore not a straightforward, technical process, but takes place in a wider social-economic and political context (Nijkamp and Blaas, 1994). This implies that besides the technical dimension to ex ante evaluation, also communication and institution oriented dimensions to ex ante evaluation can be distinguished. Ex ante evaluations offer support to the plan forming process through the comparison of policy alternatives and by offering insight into the effects of different policy alternatives. Depending on the objective of the evaluation study, evaluations can have different objectives and appearances. Well known examples are the environmental impact assessment, the social effect report and the technological effect report. Furthermore differences in scope, or level of abstractness, of the ex ante evaluations, as well as in the procedural design of the evaluation studies can be noticed (Niekerk, 2000).

When an administrative authority takes over policy from another administrative authority, this is called 'policy transfer'. This phenomenon is described by Dolowitz and Marsh (1996) as "a process in which knowledge about policies, administrative arrangements, institutions etc. in one time and/or place is used in the development of policies in another time and/or place". According to them this particularly takes place when institutions have to deal with uncertainties and when their own routines are no longer effective to handle a certain problem. In such situation institutions have the possibility to look outside the door to comparable situations for finding a useable solution.

One of the 'objects of transfer' named by Dolowitz and Marsh are 'policy instruments and administrative techniques'. The subject of this thesis, ex ante evaluation methodologies, can be placed within this group. The extent to which it is possible to transfer policy of one authority to another authority primarily depends on the subject of the policy. Other factors that have a stake in the applicability of this principle could be complexity, policy from the past, institutional structures, resources to implement the transferred policy, the bureaucratic structure and economic resources (Dolowitz and Marsh, 1996).

1.4 Research questions

The research conducted for this thesis will take place on the basis of the following research question:

> *In which way can ex ante evaluation methods for the purpose of the selection procedures of proposed projects for the Transeuropean networks (TEN-T) be*

improved by learning from positive experiences with ex ante evaluation and selection of projects in the Dutch MIRT-programme?

To answer this research question the examination will be divided and structured using the following sub questions:

What elements are necessary for the concept of ex ante evaluation to serve as a valuable policy instrument?
CHAPTER 2 - THEORY EX ANTE EVALUATION

In what manner can suitable policy elements for the purpose of evaluation and selection from one administration be transferred to and positioned in the ex ante evaluation and selection methodology of another administration ?
CHAPTER 2 - THEORY POLICY TRANSFER

How are new infrastructure projects in the MIRT-programme in the Netherlands being evaluated and selected and what are strengths and weaknesses in this approach?
CHAPTER 3 - MIRT-PROGRAMME

How are proposed infrastructure projects currently being assessed and selected within the TEN-T programme and what are strengths and weaknesses in this approach?
CHAPTER 4 - TEN-T PROGRAMME and CHAPTER 5 - CASE STUDIES

What elements of the Dutch ex ante evaluation methodology could be helpful to improve the ex ante evaluation methodology for the purpose of TEN-T?
CHAPTER 6 – POLICY TRANSFER AND DISCUSSION

1.5 Research Methods

As has been described in section 1.2 the objective of this thesis is to make informed recommendations about the ex ante evaluation and selection methodology for the purpose of TEN-T. These recommendations should be based on an informed conclusion. This requires thorough examinations and the application of a sound research methodology. This thesis will involve different, appropriate research methods, such as desk research (especially literature and document analysis), interviews in depth and case study research. The persons

interviewed are selected on the base of their knowledge and expertise, which is often only present at specific individuals. They are representants of the main organizations involved in the development of MIRT and TEN-T, as well as persons with relevant knowledge involved in the development of the considered policy. A complete list of the persons and organizations interviewed can be found in appendix 10.

The research conducted for the second chapter of this thesis will be based on a study of available relevant literature mainly. The prime objective is to clarify the theoretical context within which the subject of this thesis is framed. The aim is to develop a theoretical framework that can serve as a frame of reference for the content of the following chapters. The literature study embraces the study of publications about the planning process and the position of ex ante evaluation methods within this. Secondly, attention will be paid to literature about the theory of the concept of policy transfer, regarding its relevance for this thesis.

The following chapters are on the Dutch and European infrastructure networks and their contemporary ex ante evaluation systems. The current approach will be examined from a procedural point of view as well as from the perspective of content, using the framework developed in chapter two as a theoretical benchmark. The examinations will involve the analysis of relevant policy and programme documents as well as an examination and analysis of relevant legal provisions. A further method is the use of in depth interviews with persons involved to gain a more profound insight.

In chapter five two infrastructure projects will be examined on their position within the MIRT and TEN-T programmes, with specific attention for ex ante evaluations that have been conducted for these projects. The projects are selected from different countries, so that they have a different background with regard to the methodology of land use planning and ex ante evaluation. On the other hand the projects will have in common that they are both part of the TEN-T network. The examination of the cases intends to take place on the basis of the analysis of project specific sources and in depth interviews with relevant individuals.

Finally, the insights from the practical sections will be compared and discussed in chapter six. Here, specific issues on the transfer and implementation of existing policies in another administrative situation will also be taken into account. The theoretical context formulated in the second chapter will serve as a frame of reference. The objective is to, finally, come to conclusions about the way ex ante evaluation and selection methodology for the purpose of

MIRT and TEN-T projects is currently structured and recommendations how the TEN-T system can be improved by drawing lessons from the Dutch practice.

1.5.1 Case studies

As has been mentioned above, this thesis will include the preparation of case studies in chapter five. Performing research on two specific cases as part of the empirical examinations is interesting, since it will clarify the practical impact of the methods of operation. It will also illustrate what has been stated in the preceding descriptions of MIRT and TEN-T. Consequently, improvements can be identified more effectively. Since the prime objective of this thesis is to consider the practices in the TEN-T programme, the case studies will primarily involve projects from the TEN-T programme (see also figure 1.2). However, to have a frame of reference comparable with the overall thesis, an infrastructure project that is included in the MIRT programme as well as in the TEN-T programme will also be included in the case studies (see the dotted line in figure 1.2) The cases studied in this thesis are infrastructure projects from the Netherlands and from Sweden. The choice for these projects is based on the fact that the projects involved are developed in comparable situations. Both countries have a developed society and planning system. A difference between the Netherlands and Sweden is the density of the present infrastructure provisions. The Netherlands has a very dense network, while the Swedish network is characterised by a low density. The projects that will be studied are the A2 Maastricht project in the Netherlands and the City Tunnel in Malmö, Sweden. Although these projects involve different transport modes, they share the TEN-T objective of removing a bottleneck on a major European transport axis. More information on the case studies can be found in chapter five.

A case study can be defined as “an empirical inquiry that investigates a contemporary phenomenon within its real life context”. The objectives of this thesis very well connects to the methodology of performing case studies. It is about answering the question ‘how’ and ‘why’ about “a contemporary set of events over which the investigator has little or no control” (Yin, 2003). The projects treated in this thesis have such a character.

The treated cases will not merely be an illustration of what has been described before, but also have a learning function. The research will aim to examine the grounds on which a certain project has been included in the considered infrastructure networks from the perspective of ex ante evaluation and selection. This takes place on the basis of the following research plan. First the examinations will assess in what manner the ex ante evaluation has taken place within the overall planning process. The second point is whether these ex ante evaluations have been successful from the perspective of the individual project and from the

perspective of the European Union. The strong and weak points of the ex ante evaluation and selection arrangements will be pointed out.

The selection of projects for the case studies is for one thing dependent on the character of the project. The objective is to examine projects with a comparable nature, in the sense of modalities involved, size of the project and project objectives. On the other hand the projects are situated within different contexts. In this thesis a choice has been made to consider projects from infrastructure networks of individual Member States of the European Union, operational within a comparable societal context.

1.6 Structure of the thesis

To be able to conclude in a well underpinned manner about the question whether and how ex ante evaluation methodology for the purpose of the TEN-T programme can be improved, a thorough examination will be carried out. The objective of this section is to explain the structure of the conducted research in this thesis. The research in this thesis consists of three main blocks: a theoretical part, followed by an empirical part and a section aiming to analyse and discuss the findings.

Before the actual examinations of ex ante evaluation methodologies commence, this thesis will first describe the relevant theoretical context of ex ante evaluation and selection methodologies. Since this description contains the necessary preconditions for a sound ex ante evaluation process, this theoretical context will serve as the starting point for the further examinations. The objective of the second chapter is to develop a relevant theoretical framework, which can serve as the basis for the examinations in the following chapters. Furthermore, the second chapter will also pay attention to the theoretical concept of policy transfer. This concept is relevant to this thesis since the final objective of this examination is to advice about the possibility of transfering a policy instrumentarium or parts of it, from an administrative institution to another administrative institution, at another scale level.

When the theoretical framework for the examinations in this thesis has been compiled, the research for this thesis continues with an empirical part. The empirical part consists of examinations of the MIRT and TEN-T programmes in chapters three and four, followed by case studies in chapter five. The third chapter aims its attention to the Dutch practice of policy evaluation and selection, concerning the infrastructure projects in the MIRT-programme. This chapter will examine what the contemporary practice is and what the current test criteria are. In doing so, a distinction will be made between on the one hand a

process oriented approach and on the other hand the content oriented criteria that are in place. Furthermore, the third chapter will examine what the weak points and strengths of the current Dutch practice to ex ante evaluation of proposed infrastructure within the MIRT-programme are. The empirical value of this chapter, as well as the following chapter, will principally be secured by in depth interviews.

The objective of the fourth chapter is to examine how the current ex ante evaluation and selection methodology applied on possible TEN-T projects is constructed and in what manner this methodology is experienced insufficient. The attention will be directed to both a procedural perspective and the content of evaluation studies. To be able to make a solid comparison between the Dutch and EU practice and to be able to make grounded recommendation about possible improvements, this chapter will have a comparable structure to the third chapter.

In addition to the fourth chapter and as a strengthening of the empirical part of this thesis, chapter five will study two individual infrastructure projects. The objective of the case studies is to illustrate the contemporary situation and possibly present problems. A second objective of the case studies is to elaborate individual projects from the TEN-T programme in different countries and contexts.

Chapter six of this thesis aims to compare the gained insights and discuss them to make a sound comparison. This chapter will examine how the examined Dutch way of ex ante policy evaluation can have a learning function for the European policy directions. While doing so, this chapter will pay specific attention to possibilities and limitations regarding the transfer of policy. The question is which elements of the considered Dutch policy system can have additional value for the improvement of the ex ante evaluation system of the European Union.

In the final chapter, chapter seven, conclusions will be made about the main question whether it is possible to draw lessons from the Dutch evaluation and selection practice and policy involved for the European Union for the purpose of improving the TEN-T practices and policy. The aim is to make practical and theoretical recommendations in this chapter. The thesis will be concluded with a brief reflection on the research conducted for this thesis and the need for additional research. Figure 1.2 provides a schematic visualisation of the structure of this thesis. The three main parts of the thesis can be distinguished. The continuous lines represent a direct link between the elements in the structure of this thesis, the dotted line is an indirect link two elements.

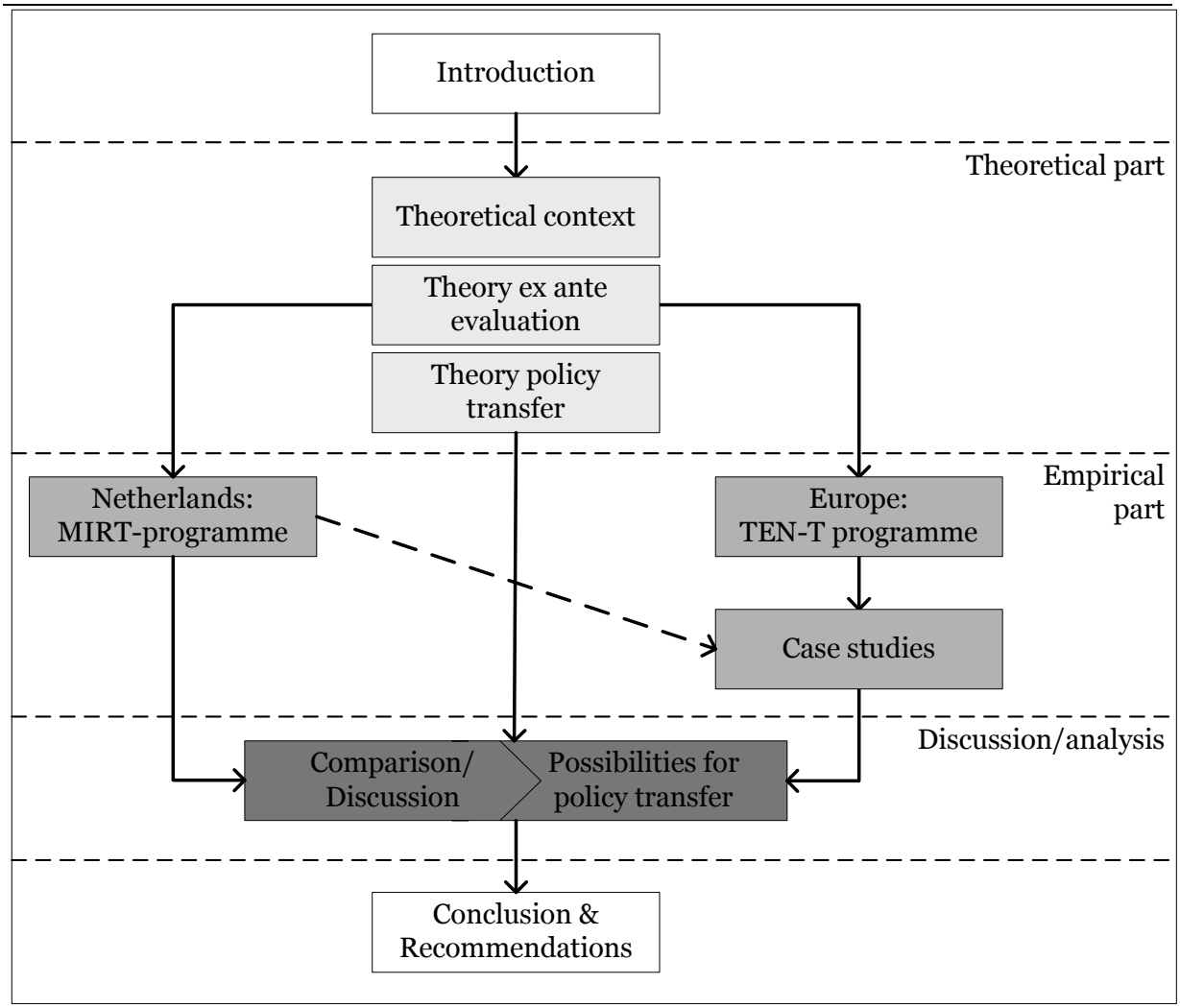

Figure 1.2 Schematic visualisation of thesis

Chapter 2

Theoretical context

2.1 Introduction

The objective of this chapter is to develop a theoretical framework capable of assessing ex ante evaluation procedures on their theoretical quality and methodological soundness. In the following parts of this theses this framework will be used as a tool to assess the ex ante evaluation methodology in the Netherlands and in the European Union. The intention of these assessments is to relate theory about ex ante evaluations to practice situation with the objective to advice about possible methodological improvements. The assessment framework for ex ante evaluation practices will consist of three levels, capable of characterising the used evaluation methodology in the Netherlands and within the European Union. By applying the framework to the situation around MIRT in the Netherlands, valuable lessons can be learned for improvement to evaluation procedures for the purpose of TEN-T. For the development of the framework a description of the theoretical context of methods of ex ante policy evaluation will be prepared, before concluding this chapter with a schematic visualisation of the theoretical model. The theoretical description contains the necessary preconditions for a methodologically sound evaluation and selection procedure. The assumptions in this chapter will serve as the basis for the following section of this thesis. This chapter will aim at the following question: *What elements are necessary for the concept of ex ante evaluation to serve as a valuable policy instrument?*

The description of the theoretical context of ex ante evaluation procedures will start with defining the position and function of evaluation procedures within the policy-making process. After this, the components of the theoretical framework will be set out separately. The framework consists of three separate, but interrelated variables. This chapter will be constructed with a decreasing degree of abstractness, starting with high abstractness and developing towards the practical application of ex ante evaluation and selection. The theoretical description and the development of the framework will be based on available literature on the subject of policy evaluation, with a specific focus on land use planning.

The final objective of this thesis is to advice about the possibilities for elements from the MIRT-programme to serve as a useful example for the TEN-T modes of operations. Therefore this chapter will be concluded with some theoretical considerations around the transfer of policy from one administrative context to another public administration. This section will

involve to following question: *In what manner can suitable policy elements for the purpose of evaluation and selection from one administration be transferred to and positioned in the ex ante evaluation and selection methodology of another administration ?*

2.2 Land use planning and policy evaluation

For the purpose of this thesis it is not necessary to provide a complete historical description of the discipline of land use planning. A review of relevant theoretical developments in planning theory should be sufficient. For the purpose of this thesis mainly the developments after the Second World War are of importance, although it should be noted that land use planning and policy evaluation existed long before the twentieth century. Over the past decades land use planning has been defined in many different ways. For an overview of the broad range of definitions, three will be provided here. First, Forester (1989: p.3) defines planning in a very general way as 'the guidance of future action'. According to Voogd (2001: p.5) spatial planning is the systematic preparation of actions, aimed at deliberate intervention in the spatial setting and the preparation of these interventions, with the objective to maintain and improve spatial qualities where possible. Finally, Healey (2006, p.6) has a more socially oriented view on the planning tradition being 'a continual effort to interrelate the conceptions of the qualities and social dynamics of places with notions of the social processes of shaping places through articulation and implementation of policies'. Although these definitions appear to differ clearly at first glance, they contain a couple of linking elements. The central elements of land use planning are systematic preparation of future oriented actions with the aim to shape spatial qualities of places.

Land use planning is considered to be part of the social sciences. Social sciences have their scientific foundations in general scientific principles based on philosophical discourses, going back to the fundaments of contemporary science. This throughput from philosophy is fundamental for the way the landscape of planning theory has been and is still being shaped. The thinking and thoughts about the theory of planning have developed along with philosophical and scientific discourses. (De Roo and Voogd, 2004: p. 28)

Evaluation of policy alternatives is considered to be a separate stage in the policy making. There is a difference between ex ante, prior to decision making, and ex post evaluation, which takes place after the policy has been developed and implemented (Crabbé and Leroy, 2008: p. 6). Crabbé and Leroy indicate that the development of policy can be considered as a cyclic process with ongoing iterations and reiterations. All steps in the policy cycle require some form of policy evaluation (figure 2.1). The implication of this conception is that ex ante and ex

post evaluation are interdependent. Ex ante evaluation feeds ex post evaluation through the development of new policy; ex post evaluation has a learning effect, which leads new policy making, requiring ex ante evaluation. However, since the aim of this thesis is to improve the methods used in the development of plans, ex ante policy evaluation is the primary concern of this thesis.

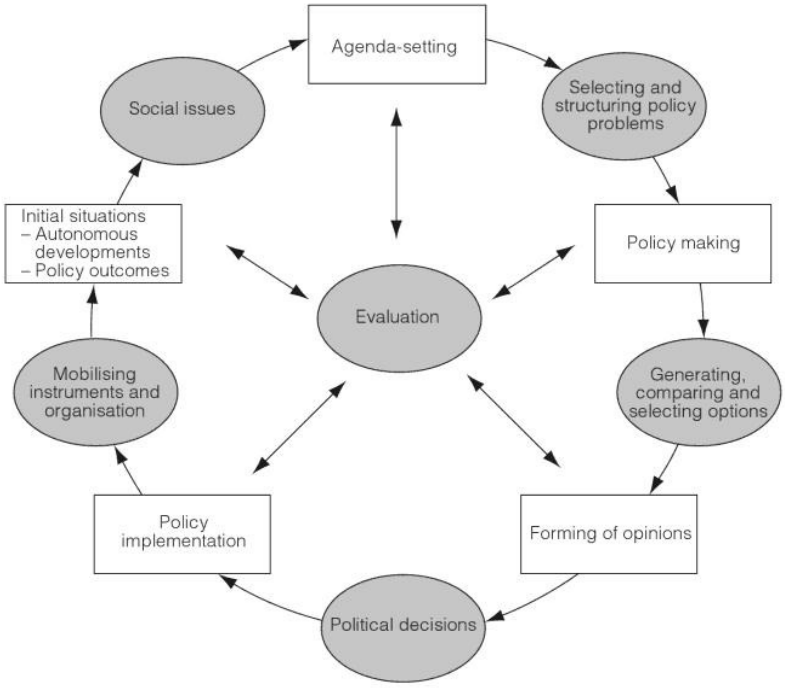

Figure 2.1 The policy cycle (Crabbé and Leroy, 2008: p. 3)

Ex ante evaluation of policy alternatives for the purpose of infrastructure planning can be considered to be a form of general policy evaluation. Therefore the principles of general policy evaluation also apply to ex ante evaluation procedures within a land use planning process. Nijkamp and Blaas (1994: p. 21) point out 'that planning is closely related with information provision to decision-makers' and other actors in the decision-making process. Faludi and Voogd see evaluation procedures as a decision supporting instrument in planning processes: 'The purpose of evaluation is to give as objective a description of the' alternative options available to the decision maker 'as is humanly possible, and to appraise it prior to making a considered choice' (Faludi and Voogd, 1985: p.1). Crabbé and Leroy use the following definition in their handbook: 'policy evaluation is a scientific analysis of a certain policy area, the policies of which are assessed for certain criteria, and on the basis of which recommendations are formulated' (Crabbé and Leroy, 2008).

Where ex ante evaluation is supportive to the pre-decision phase, ex post evaluation of policy takes place after the decision has been taken. As described above, ultimately, ex post

evaluation could lead to new agenda setting and ex ante evaluation of new policy issues. In relation to environmental and infrastructure planning the term 'follow up', following the evaluations in the ex ante phase, is often used (Morrison-Saunders et al., 2003). The objective of follow up is 'to improve project implementation with respect to environmental protection outcomes and to provide feedback on EIA procedures. Follow up will be further elaborated in section 2.6.2 on the procedural design of evaluation studies. However, the main focus of this thesis will be on ex ante evaluation.

2.3 Towards a theoretical framework

The main objective of this chapter is to provide a framework for the assessment of evaluation procedures as used in the Netherlands and in the European Union. This model will be used as a measurement tool for an objective comparison of the situation in the Netherlands and the EU. To do so, the framework will assess the ex ante evaluation procedures in three dimensions, that characterise the methodology and its applicability in another context. These dimensions have decreasing levels of abstractness.

Dimensions of evaluation procedures		Abstractness
1.	Ex ante evaluation from the perspective of policy-making theory	Abstract
2.	Scope of ex ante evaluation	
3.	Process design	Practice

Table 2.1 Dimensions of the theoretical model, serving as assessment framework in this thesis

2.4 Ex ante evaluation from a policy-making perspective

The science of land use planning provides many different views on the land use planning process. The implications of these competing paradigms are different approaches to land use planning issues and consequently, a different approach to the evaluation of policy alternatives. The planning process is a policy-making process in more specific terms aiming at policy-making within the land use planning sector. The policy-making process has obvious parallels with the planning process. Therefore it is of particular interest for this thesis to look at policy studies and the theory of policy-making. As well as the planning process, the policy-making process can be simplified into a series of stages. Crabbé and Leroy (2008: p. 3) describe policy-making as 'an ongoing iteration of a policy cycle in which more or less consecutive stages and the according processes can (analytically) be distinguished'.

2.4.1 Land use planning as a rational goal-oriented process

The first paradigm from policy science defines policy-making as goal-oriented rational processes. This approach can be considered to be the classic approach to contemporary land use planning. It has been dominant within land use planning for much of the twentieth century, particularly in the first decades after WWII. The foundations of this concept descend from the straightforward processes of process technology and engineering sciences. In this respect policy-making is seen as a process driven by a problem solving rationale. Rationality as an important concept is a product of the modern era in philosophy. Modern philosophy originates from the enlightenment period and it promotes a movement *'toward the advancement of knowledge, toward human understanding, and toward progress through method or through experience'* Silverman, 1996: p. 316). In policy-making this leads to an instrumental rationality, with calculating and analytical procedures. The consequence for land use planning was a strong belief in the value science and objectivity and a strive for comprehensive plans (Forester, 1989: p. 49; Sager, 1999).

The problem solving rationale is the central element of this approach to policy-making. The emphasis on rationality in this approach has a dual character. First, the main consequence of rationality for policy-making, and therefore land use planning, is that efficient and effective strategies are sought, based on scientific methods, to overcome the detected problems. Besides this, rationality also refers to the behaviour of actors involved. Rational behaving actors look for the best solutions in a calculating manner, a concept is also known as the Homo Economicus (Crabbé and Leroy, 2008: p. 8).

This paradigm results is a linear land use planning process with a straightforward and obvious role for ex ante policy evaluation. Proposed policy needs to be assessed and evaluated to predict effects and effectiveness of the proposed measures. The objective is to evaluate how likely it is that intended effects are actually achieved when the policy is implemented. The emphasis on the scientific basis of policy-making provides ex ante evaluation with a clear task. 'Policy must essentially be assessed and optimized using the criteria of goal attainment and suitability, often played out in a series of clear cut indicators'. In practice, the use of these indicators leads to a standardization of the process as evaluation is restricted to monitoring only these indicators. In this sense, 'policy evaluation is intended to contribute to further rationalization of the policy' (Crabbé and Leroy, 2008: p. 10).

2.4.2 Land use planning as a process of interaction

In the previous paradigm on policy-making, policy-making is considered as a control loop. A problem is detected and decision makers 'decide to tackle it by means of a well-considered intervention'. The *well consideredness* of the intervention is the point where ex ante

evaluation of policy alternatives plays its part in the process. Despite its straightforwardness, this approach has three main constraints. First, the 'rational actor theory' does not always hold as actors appear not to be driven only by principles of rationality and goal-orientation. Simon introduced the concept of bounded rationality, which 'postulates that human rationality is very limited, very much bounded by the situation and by human computational powers' (Simon, 1983: p. 34). Secondly, the thought that problem solving is the only driving force behind policy-making is not true either. There appear to be many other contextual influences, such as for example power relations and traditions. Finally, the notion of policy-making as the mentioned control loop overlooks the complexity of reality. Policy is not created by automated processes. Rather it is created in an 'environment of continuous social and political interaction' and within institutional contexts (Crabbé and Leroy, 2008: p. 11).

This institutional context of policy-making leads to a whole new paradigm on the concept of policy-making, which will be treated in paragraph 2.4.3. This paragraph focuses on social and political interaction as driving forces behind the policy-making process. It can be argued that these approaches developed out of the constraints of rational goal-oriented approaches. The previously described modern way of thinking is being rejected from a postmodern thought world. *'Postmodern thought means the appeal to differences - differences in theories, differences in formulations, differences in identities. Postmodern thought rejects hierarchies and genealogies, continuities and progress, resolutions and overcomings'* (Silverman, 1996: p. 318).

In approaches that consider policy-making as a process of interaction, policy is seen as the result of 'an unfolding struggle between conflicting interests and power bases'. In this sense, policy can be defined as 'the product of power relations between various social and political actors, groups, convictions and interests'. The recognition of complex power relations produced a new range of policy-making approaches in land use planning over the past decade. Instead of focussing on effectiveness and efficiency in reaching goals, these approaches shift their focus to issues of communication, participation and consensus building. Especially the works of the German sociologist Jürgen Habermas and his theory of communicative action get much attention from the land use planning community (Woltjer, 2000; Healey, 2006). It is important to notice communicative approaches to land use planning processes do not have a clear, linear structure like their rational, goal-oriented counterparts. Instead, as a consequence of the increased contextual complexity and the aim for interaction, planning processes tend to follow a more cyclic, flexible path in pursuing their policy goals. These iterative approaches to land use planning provide a certain tension with

evaluation processes. As evaluation procedures are often determined by regulation, they tend to follow a linear, stepwise approach (Arts in Linden and Voogd, 2004: p. 262-263).

In the light of processes that take note of power relations as a factor of importance in policy-making, ex ante evaluation procedures have a different purpose than within rational goal-oriented processes. The objective is not to optimize the outcome based on comparison of policy alternatives, but rather the final policy goals must reflect the power relationships between the different actors. Voogd refers to this as a paradigm shift in the function of evaluations: 'from preparing information about alternatives to involving stakeholders in the evaluation process' (Voogd in Linden and Voogd, 2004: p. 227). Therefore ex ante evaluation studies should critically assess 'the connection between the policy process and the policy organization, on the one hand, and its very outcome – the substantial policy product – on the other'. According to Voogd (2001: p. 16) a policy decision is rational within processes of interaction if all actors involved can agree on their own motives. Policy outcomes should therefore reflect reality as completely as possible (Crabbé and Leroy, 2008: p. 14-17).

2.4.3 Land use planning as an institutional phenomenon

On the one hand, approaching policy-making as a process of interaction has a number of advantages over rational goal-oriented processes. On the other hand, these approaches also have a number of constraints in terms of complexity. Crabbé and Leroy describe two drawbacks of policy evaluation in the sense described above. At first, attention to issues of complexity and interaction may lead to undesirable outcome of evaluation procedures. Secondly, policy goals often remain vague and ill formulated, with the consequence of long lasting interactive processes (Crabbé and Leroy, 2008: p. 17).

A third possible approach to policy-making is approaching policy as an institutional phenomenon. Equally to the previous situation, these approaches also take note of increased contextual complexity. This does pay more respect to the complexity of reality. On the other hand it makes controlling policy-making processes more difficult, compared to a situation of rational goal-oriented process.

Approaching policy as an institutional phenomenon recognizes that policy takes place in a broader and relatively stable framework. This framework is a 'pre-existing institutional context in which a specific policy process unfolds' (Crabbé and Leroy, 2008, p. 17). Healey (2006) has prepared an extensive description of the relationship between land use planning and institutional approaches to societal issues. Based on the structuration theory of Giddens she states that individual identities are constructed by their social situation and that any individual is embedded in cultural webs. Consequently, society consists of a collection of

networks and relationships. The consequence for planning is that it should focus 'on the relational webs or networks in which we live'. 'Planning becomes a practice of building relational capacity' which can address collective, spatial concerns by making links between a 'very wide range of people with stakes in a place, although the stakes are potentially very diverse' (Healey, 2006: p. 55-59).

Policy evaluation from an institutionalised perspective has again a different purpose. In this sense policy evaluation 'requires an analysis of the institutional context' of the proposed policy measure. To optimize the chances of achieving effective policy, policy processes must be 'attuned to the context or vice versa'. From an institutional perspective it is important to question 'what the typical features of a certain institutional context are and how they affect specific policy processes and policy products (Crabbé and Leroy, 2008: p. 20-21).

2.4.4 Conclusion

Above, three different perspectives on policy-making have been discussed. A rational approach, based on modernist scientific principles; an approach aimed at analyzing interaction, based on more postmodern thoughts and institutionalized thoughts on policy-making, analysing the pre-set contextual frameworks. All three approaches have their consequences on the purpose and methodology of policy evaluation in the land use planning process. Later on in this theoretical part, these perspectives will be integrated into the theoretical framework that will be used for assessment of the ex ante evaluation systems in the following chapters. The table below summarizes the described approach on their main point for this thesis.

Perspectives	Policy-making is …	Function of ex ante evaluation
Rationalism	Problem-solving oriented	Assessing likeliness of intended effects, optimizing outcomes
Interaction	Interaction between agencies and interests involved	Assessing the relationship between process organization and outcomes
Institutionalism	Functioning of regimes; institutional arrangements	Attuning policy to the context and vice versa

Table 2.2 Ex ante evaluation from different policy perspectives

2.5 Scope of ex ante evaluation

Besides the assessment of policy evaluation from different theoretical perspectives, a further aspect of policy evaluation that has to be assessed for this thesis, is the purpose of ex ante evaluation procedures within the planning process. The purpose of the evaluation study performed within the planning process determines the desired scope as well as the position evaluation takes within the planning process. In literature about evaluation studies, three different theoretical levels of abstractness are generally distinguished. Evaluation with a strategic character takes place early in the process, while an evaluation procedure in the later stages of the planning process takes place on operational issues. Furthermore, an in between form of ex ante policy evaluation is the evaluation of proposed policy on tactical issues. The impact of the different levels of evaluation on the decision making process depends largely on the institutional and legal context and on the way stakeholders perceive the used evaluation instruments (Runhaar, 2009). The distinguished levels of abstractness of ex ante policy evaluation as well as their significance for the evaluation procedures will be elaborated further below.

2.5.1 Strategic evaluation studies

The purpose of strategic evaluation studies is to consider the implications of proposed policy, plans or programmes in the early stages of the decision making process. Strategic assessment intends to assist in determining the most preferable means for achieving a desired end. In land use planning the desired end is a vision of a desired spatial state or quality. Therefore, in strategic evaluation studies, *backcasting* is generally the preferred approach. Noble describes backcasting as working 'backwards from a future endpoint to determine the specific actions necessary to achieve it'. Strategic evaluation assists in choosing a proactive strategy for achieving the desired ends. Early determination and consideration of a full range of alternative options when little preconditions have already been decided upon leads to flexibility in decision making (Noble, 2000; Mitchell, 2002: p 164-165). Evaluation on project level is often too narrowly focused on operational issues. Consequently, opportunities for integrated regional approaches are missed. Strategic evaluation pays attention to the relationship with other spatial developments, which are best dealt with in early phases of the planning process, 'when the degrees of freedom are relatively large'. Strategic impact assessments have a broad and normative character. The focus is on identifying alternative options instead of focusing on the impacts of specific projects. Therefore strategic evaluation studies are characterised by a long time span. For large-scale infrastructure projects this could mean a period of ten years or longer before the completion of the project. The attention for strategic forms of evaluation has increased over the last decades along with increased attention for integral approaches and the aim for sustainability (Niekerk, 2000: p. 53-55; Arts and Van Lamoen, 2004).

It appears that the contribution of strategic assessment of environmental effects to the planning process is dependent on multiple factors. Runhaar (2008) indicates that a traditional approach towards establishing the contribution of SEA to decision-making is linking then Strategic Environmental Assessments with the 'characteristics of stakeholders and other elements in the context in which SEAs are conducted'. Other elements that could be relevant are the relevant formal planning procedures involved, the institutional organization, present dominant policy styles and the certainty of available knowledge. In addition to this traditional context analysis as an approach to optimize the 'set-up and planning' of Strategic Environmental Assessments, Runhaar advocates the involvement of discourse analysis in the study of SEAs. Although there is not a common understanding of how a discourse should exactly be defined, the relevant idea for this thesis is that 'different social understandings of the world lead to different actions'. The involvement of discourse analysis aimed at the content of SEAs provides an additional perspective with a focus on the way in which actors give meaning to Strategic Environmental Assessments within a decision-making process. By means of linking discourses to other elements, such as actors, institutional aspects and resources, explanations can be derived on what the function and contribution of an SEA is within in a specific arena. Relevant examples of different arenas in the light of this thesis are the individual national planning systems of the Member States of the European Union. Runhaar concludes that the involvement of analysis on how the content of planning and evaluation procedures are perceived provide an elaborative additional perspective next to the relationship between the context and the evaluation procedure. The perspectives on the role of strategic ex ante evaluation within planning may differ widely since strategic assessment is an element in a policy process in which different evaluation 'discourses compete for hegemony' (Runhaar, 2008). This statement is important in the explanation of differences in the application of Strategic Environmental Assessment by the European Union and the individual Member States (see chapters 3,4 and 5). The legal framework for the application of environmental assessment, as far as relevant for this thesis, is described in box 2.1.

2.5.2 Tactical evaluation studies

Next to strategic and operational evaluation of policy alternatives, an in between scope level is ex ante evaluation on tactical issues. In the tactical policy arena, policy is being constructed at the hands of the framework set by the strategic considerations that have taken place before. The tactical level can be considered as a bridge between strategic and operational evaluations of policy alternatives. The focus is shifting towards more practical issues for the implementation of the strategic policy objectives that have been constructed before.

The main issues that are taken into consideration at the tactical policy evaluation level have a dual, complementary character. Tactical policy forming in infrastructure planning involves choices about the desired transport and traffic systems. First, the development of a transport system involves the consideration of nodes and connections. The goal is the development of a network, fitting to the strategic issues that function as a frame of reference. The second objective of tactical evaluation of policy options is the assessment of a suitable traffic system. This primarily involves choices within the preset framework about the movement of transport means over the set transport network. In essence, this is the stage where choices about modalities are made in the infrastructure planning process (V&W, 1998).

The planning and evaluation of tactical issues in the infrastructure planning process takes place on the middle-long term, 5 to 10 years in advance to realisation of the proposed infrastructure. In essence the objective of this planning stage is to evaluate and decide on the development of networks and matching modalities, within the previously set framework of strategic objectives.

2.5.3 Operational evaluation studies

While the emphasis within strategic and tactical assessment is on 'alternative options', the emphasis of operational assessment is on 'option alternatives'. Opposite to strategic evaluation studies, which take a high position on the spectrum of abstractness of evaluation studies, operational evaluation studies have a more practically oriented character. Ideally, the framework of preconditions has been set by evaluations and decisions on strategic and spatial level. Operational evaluation directs its attention 'in greater detail to the potential impacts' of the chosen alternative. This is the vertical dynamics of the ex ante evaluation column. The objectives from higher scopes have a directing and framing function in the lower planning arenas. Noble refers to this sequential character of evaluation studies as 'tiering' (Noble, 2000). Operational evaluations aim at short term issues. The main question in operational evaluation studies is 'how' projects can best be executed. Issues that are treated have a concrete character, such as design of the location, construction materials and constructions techniques. Operational evaluations takes place on short term before the implementation of the project, in the five years before implementation Niekerk, 2000: p. 53-57).

Box 2.1: Environmental Assessment

Within the European Union the assessment of environmental effects of spatial developments is largely guided by the environmental directives of the EU. These directives provide the legislative context regarding the environmental impacts of proposed investments. The provided guidelines must be taken into account in the ex ante evaluation of plans, projects and projects. For TEN-T there are five relevant environmental directives:

- Environmental Impact Assessment (EIA) Directive (85/337/EEC; last amended in 1997: 97/11/EC)
- Strategic Environmental Assessment (SEA) Directive (2001/42/EC)
- Birds Directive (79/409/EEC)
- Habitats Directive (92/43/EEC)
- Water Framework Directive (2000/60/EC)

These directives are leading for the Member States of the European Union. Member States are obliged to implement these directives into their legislation and procedures to safeguard the environmental interests in the planning process.

When considering the **scope** of environmental assessment, especially the first and second directive play an import role in the development of assessment instruments. The Environmental Impact Assessment has been introduced in 1985 and concern the environmental effects of **projects**. The objective of this directive is to ensure "that environmental consequences of projects are identified and assessed before authorisation is given. The public can give its opinion and all results are taken into account in the authorisation procedure of the project. The public is informed of the decision afterwards." (DG Environment, 2009) The implementation into the Dutch legislation has taken place by means of the obligation to perform a project-EIA on individual projects with considerable environmental effects, since 1987 (VROM, 2006; InfoMil, 2009).

In 2001 the European Union has adopted the Strategic Environmental Assessment directive with the objective to ensure attention to environmental consequences of certain **plans and programmes** in the policy making process. The individual Member States of the EU are obliged to implement this directive into their own legislation and planning processes. In the Netherlands the SEA directive have been operationalized by means of the introduction of the plan-EIA in 2006 (VROM, 2006). More specific information on the instruments project-EIA and plan-EIA can be found in chapter three

2.5.4 Conclusion

The figure below elaborates the scoping differences between strategic, tactical and operational evaluation studies. This is a theoretical typology, showing the vertical dynamics of the planning and evaluation process. From the practical perspectives of MIRT and TEN-T, it must be noted that ex ante evaluation takes place on different scales. Certain aspects of the policy proposal are being assessed in early phases on strategic level, while other elements ask a spatial or operational evaluation study. Evaluation studies on different issues, such as environment and economy, may takes places after each other or besides each other in a situation of overlap. The precise form of ex ante evaluation is context dependent in every situation. The balance between strategic, tactical and operational evaluation processes should be considered carefully.

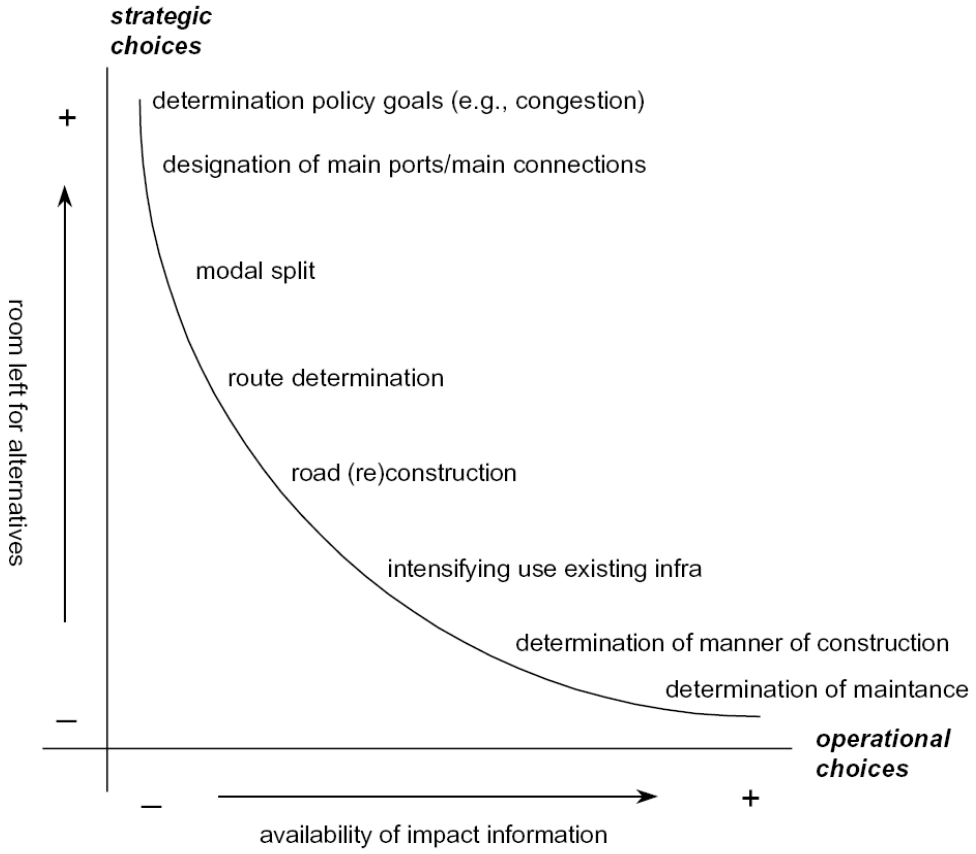

Figure 2.2 Relationship between strategic and operational policy evaluations (Arts and Van Lamoen, 2005)

Above three levels of ex ante evaluation studies have been described. The table below gives an overview of characteristics of the different approaches to evaluation. This threefold classification will be integrated into the theoretical model at the end of this chapter.

	Strategic	Tactical	Operational
Question	What is the preferred option?	What is the preferred method?	What are the impacts of the chosen option?
Content	Examines strategies within broad vision on goals and objectives	Modalities, spatial choices (locations, routes)	Potential outcomes of already predetermined options
Scope	Broad focus, low level of detail	Broad focus, more detailed	Narrow focus, highly detailed
Function	Frame of reference for lower levels	Frame of reference for operational level	Higher levels are directing
Characteristics	Proactive Backcasts before forecasts Long term: +/- 10> years	Reactive and proactive Forecasts +/- 5-10 years	Reactive Forecasts Short term: +/- 0-5 years

Table 2.3 Strategic, tactical and operational perspectives on plan making and ex ante evaluation (Based on V&W, 1998; Niekerk, 2000: p. 54; Noble, 2000)

2.6 Process design for ex ante evaluation procedures

A sound ex ante evaluation process is crucial for the quality of decision making in land use planning. A sound evaluation procedure consists of various elements. A clear overview of the elements or steps and the dimensions of ex ante evaluation is required for the purpose of this thesis. The procedural nature of this dimension to ex ante evaluation implies a link the technical rational dimension of policy making and evaluation (see section 2.4).

Ex ante evaluation procedures for the purpose of decision making about infrastructure proposals have been described extensively in scientific literature. Often the focus is on rather specific evaluations, such as Environmental Impact Assessment (EIA). However, for the purpose of this thesis, a rather different focus is required. Different instruments for ex ante evaluation within MIRT and TEN-T projects will have to be assessed with a broad scope to be able to judge whether they are of additional value. Ex ante evaluation procedures should be capable of assessing projects on different elements, such as environmental, social-economic, financial and network-synergetic effects, from an integrated evaluation process. Therefore this paragraph will focus on a general theoretical design for ex ante evaluation studies for infrastructure proposals.

Ex ante evaluation of policy alternatives takes place during the policy preparation phase of the planning process. In the land use planning process it is positioned before the decision about the preferred alternative (Voogd, 2001: p. 9). The literature describes the following stages for ex ante evaluation studies.

Stages in an ex ante evaluation procedure
1. Screening *Testing the need for evaluation*
2. Scoping *Defining problems and goals, determining the extent of the study*
3. Generation of alternatives *Design of relevant alternatives to be studied*
4. Identification and analysis of effects *Objective estimation of impacts*
5. Mitigating and compensating measures *Measures aiming at diminishing negative impacts*
6. Evaluation of alternatives *Comparing the alternatives*
7. Presentation *Publication of the results of an evaluation study*

Table 2.4 Stages in ex ante evaluation procedures[2]

It is important to notice that the procedure above is an ideal typical vision on practice situations. In practice there will be differences between the procedures followed in ex ante evaluation studies depending on the context of the study. Rational, goal-oriented planning processes tend to take a stepwise approach and will generally follow the approach described above, from their bias for procedural rationality. Communicative and institutionalist perspectives are characterised by more dynamic evaluation processes. These approaches take account of contextual complexity and accept the involvement of many different actors and institutions. Consequently, the defined stages can be distinguished in a more diffuse, iterative manner.

2.6.1 Stages in an ex ante evaluation procedure

From here, the stages above will be described separately. The purpose of the *screening* stage is to determine whether an evaluation study is required. The need for impact assessment can be determined via two basic approaches. The first possibility is a procedural assessment of a

[2] Based on Sorber in Faludi and Voogd, 1985 (p.147); Niekerk, 2000 (p.50); Arts in Linden and Voogd, 2004 (p.236)

plan or policy proposal with a predetermined set of criteria. Secondly, lists can be used to identify activities that require evaluation. This is the approach used in the Netherlands (Arts in Linden and Voogd, 2004: p. 244-245).

The next phase is the *scoping* stage. This step determines the extent or the range of the evaluation study as well as the methods used. The degree of integrity of an evaluation study ranges from very broad policy evaluation studies to evaluations of only a single specific sector. A single sector evaluation, evaluating single interests such as economy or environment (EIA), is more thorough and intensive on the subject than an integral approach. Integral approaches aim at finding a balance and better coordination of policy through an integral study of all relevant interests. To make a well considered choice about the scope of the evaluation, it is crucial that the problem definition and the goals of the study are clear. Questions that have to be answered in this stage are: *What is needed for decision making?*; *What is required by regulations/policy?* and *What are major project-specific issues?* (Niekerk, 2000: p. 57-61, 70); Arts in Linden and Voogd, 2004: p. 246-247).

The following stage defines and *designs the relevant alternatives* for the study. An evaluation of policy alternatives is only meaningful if a set of relevant alternatives is taken into account. According to Nijkamp and Blaas a pre-selection has to be made 'based on strategic considerations like (technical or financial) feasibility, flexibility, ease of implementation, risk level etc.' (Nijkamp and Blaas, 1994: p. 39). Furthermore, sufficient information about the effects of each alternative needs to be available. According to Arts, it is important to have a clear view on the level of planning (strategic, location or operational) within which the process takes place. In the selection of alternatives there is, among others, at least a zero-alternative. A zero-alternative, also known as a reference alternative, describes the autonomous development without introduction of any new policy. It is highly recommendable and in some instances even obligatory to take other specific project alternatives, such as the Alternative Most Friendly to the Environment (AMFE), into consideration. Other alternatives that might be relevant are the preferential alternative, the modality alternative, location/route alternatives, construction alternatives and others (Eijgenraam et al., 2000: p. 34-35; Arts in Linden and Voogd, 2004: p. 249-253).

The fourth stage, *identification and analysis of effects*, is the start of the actual policy impact study. In this stage, the considered alternatives are being studied and assessed on relevant criteria. In the literature on evaluations various typologies of effects can be distinguished. Nijkamp and Blaas provide the following; intended vs. unintended effects; direct vs. indirect effects; integral vs. partial effects and single vs. compound effects. Besides this typology,

factors of importance are time, space, sequence of effects and degree of impact (Nijkamp and Blaas, 1994: p. 39; Niekerk, 2000: p. 81).

The objective of the phase of *mitigating and compensating measures* in an ex ante evaluation process is to bring an end to predicted negative impacts by making 'minor adjustments to mitigate those impacts'. Solutions are sought in minor variations since the strategic decisions about the alternatives have already been made (Noble, 2000). These possible measures should be taken into account during the evaluation and comparison of alternatives. Mitigating measures aim at mitigating impacts through effects based measures (e.g. noise barriers in between motorways and residential areas). When compensation takes place, the negative impacts remain the same, but the damage or loss is compensated somehow (Niekerk, 2000: p. 81-82).

For the actual *evaluation of alternatives*, a crucial step is deciding on an appropriate evaluation method. There is a wide range of assessment methods available, which can generally be divided into two main categories: monetary methods and non-monetary methods. Examples of monetary methods are *Cost-Benefit Analysis* (CBA) and *Cost-Effectiveness Analysis* (CEA).These methods are fairly straightforward. However an important constraint in land use planning uses is that it is difficult to appraise non-monetary issues in monetary evaluation since it deals with quantitative criteria only. Monetary evaluation methods can be branded as part of traditional rationality in planning. Non-monetary methods such as *Multi-Criteria Methods* (MCA) are developed are developed from the desire to include non-monetary, qualitative dimensions in ex ante policy evaluation. Gamper and Turcanu conclude from their research that MCA has strong decision supporting potential, especially within the complexity of the supra-national level. According to their research, MCA is capable of considering alternatives with a set of sustainability criteria, with respect to 'financial, natural and social resources and the respective interactions between these systems' and at the same time also considers direct local preferences (Gamper and Turcanu, 2007). However, a problem with the use of MCA is that legal preference is often given to CBA. Considering contextual complexity, there is not a single best evaluation method. Therefore the choice for an appropriate evaluation method should be a very conscious one. According to Sorber and others the application of different evaluation methods may lead to varying outcomes of the evaluation study (Sorber in Faludi and Voogd, 1985: p. 147; Niekerk, 2000: p. 66).

The final step in an evaluation process is the *publication of the results* of the study. The reliability of the information presented and the quality of the presentation must meet a certain standard. The required standard is mainly determined by the
completeness, correctness, probability, accuracy of the outcomes and largely depends on the actors involved in the evaluation process. To meet the required presentation standards, these aspects are not only an issue in the final stage of the evaluation, but should be overlooked during the entire process. The usefulness of an evaluation study further depends on the quality of presentation. Since the final objective is transfer of objective knowledge to others, especially decision makers, the clarity and comprehensibility must be accommodated to the target audience (Niekerk, 2000: p.65-69).

Another factor depending on the purpose of the evaluation process is the degree of transparency of the evaluation process. An open evaluation process aims at interaction between actors from the thought that communication can prevent one-sided policy choices. Interaction and communications are especially important factors in an evaluation process aimed at communicating policy impacts and creating policy support. Private evaluation studies are primarily oriented at the specific outcomes, since these studies are intended for internal use only. Consequently, they may therefore involve as little actors as possible and do not have to justify normative choices (Niekerk, 2000: p. 62-65).

2.6.2 Follow up in evaluations

As described in section 2.2 evaluation procedures are not finished after the decision to implement a policy aim has been taken. In the policy cycle (figure 2.1) ex post evaluation plays an important role in the evaluation of the implementation of policy and newly created situations. One of the ex post instruments that is relevant in environmental and infrastructure planning is the application of follow up methods. Only a brief description will be provided here, since the main focus of this thesis is on ex ante evaluation. However, the relation with ex post evaluation should not be ignored. The aim of follow up methods is to monitor and evaluate 'the impacts of a project or plan (that has been subject to ex ante assessment) for management of, and communication about, the environmental performance of that project or plan' Morrison-Saunders et al., 2003). Successful assessment follow up is dependent on a number of factors. The model below, provided by Morrison-Saunders et al., shows the interaction between stakeholders and contextual factors that are relevant for successful follow up.

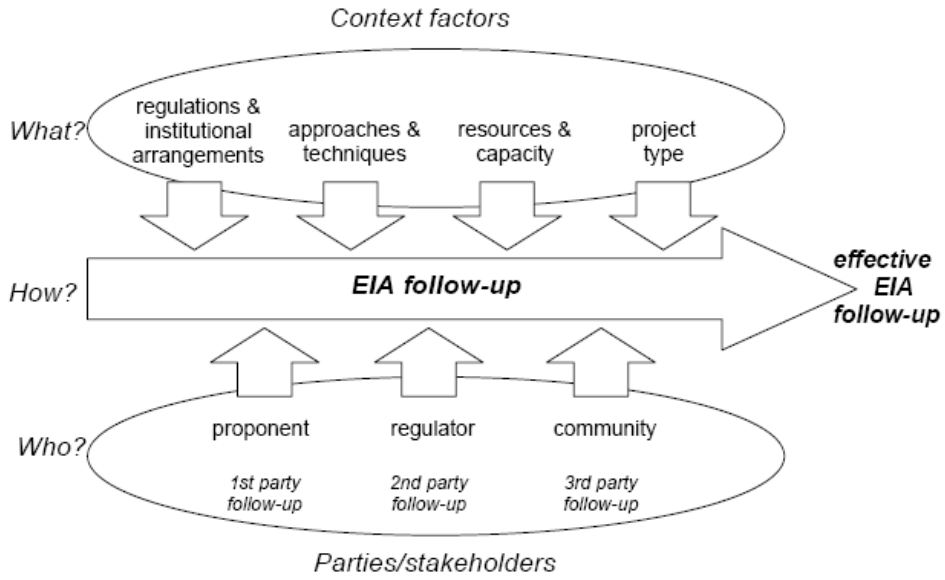

Figure 2.3 Contextual factors and parties relevant for successful EIA follow-up (Morrison-Saunders et al. (2003)

In practice this results in 'regulations that provide for monitoring and evaluation of projects and plans during their construction and operational phases'. In addition to regulations, effective follow up also requires institutional awareness about the added value of follow up instruments. Institutional framing of follow up leads to self-regulation and public awareness. In combination with legal arrangements. In combination with appropriate approaches and techniques, sufficient resources and a project specific setting, this will result in the will to perform efficient follow up (Morrison-Saunders et al., 2003).

2.7 Theoretical model for ex ante evaluation

This chapter has described relevant theoretical considerations behind ex ante evaluation procedures. It appears that evaluation procedures are, like the planning processes in which they take place, very much context dependent. Therefore, the optimal design of evaluation processes is depending on a complex framework of process surrounding variables. Therefore the conclusion must be that *the* ex ante evaluation process does not exist.

The objective of this thesis is to perform research on the practical application of ex ante evaluation in the Netherlands and in Europe. The assessment of the practical applications in the following chapters should lead to improvements of ex ante evaluation for TEN-T by implementing elements from the Dutch practice. Therefore, to conclude this theoretical section and to direct the theory towards the following practice situations, a theoretical

framework for the assessment of ex ante evaluation of (infrastructure) projects in the planning process is developed here.

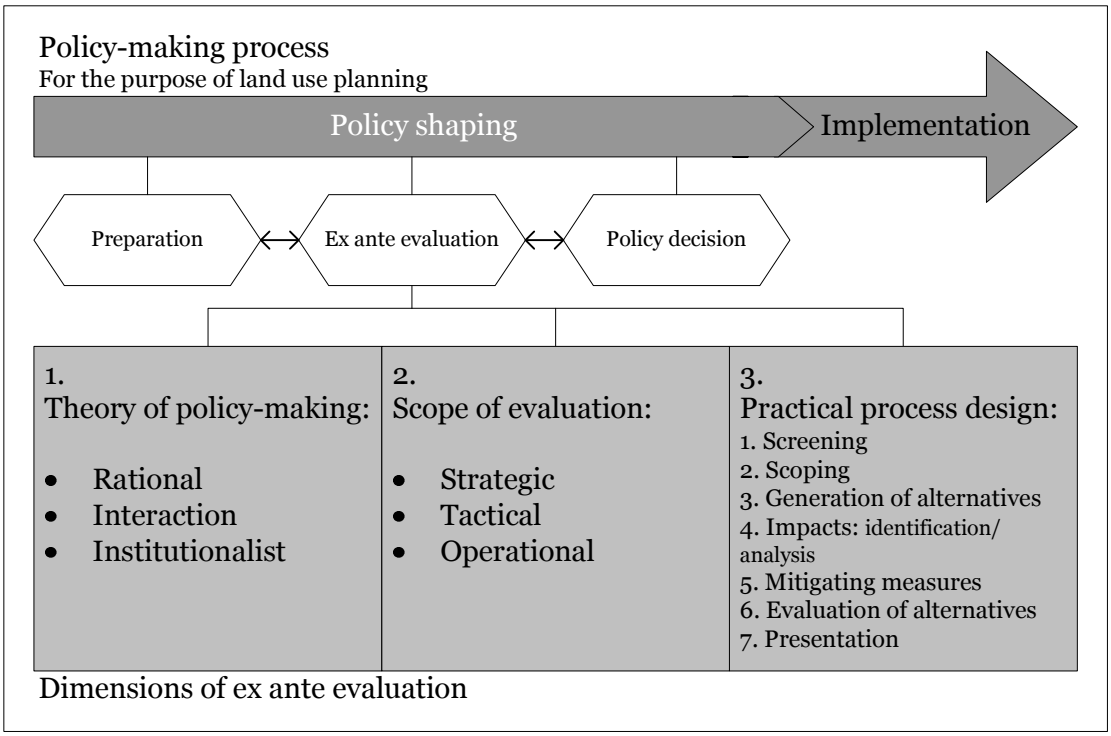

Figure 2.4 Theoretical model for ex ante evaluation

The model serves a theoretical framework that shows the position of ex ante evaluation procedures within a simplified planning process as part of the policy shaping phase. Ex ante evaluation is a stage in the policy shaping phase of the policy making process. Theoretically, it can be considered to be situated in between preparation and decision making. However, since policy making is generally more dynamic and ex ante evaluation takes place on different levels of abstractness, it should be noticed that there is not one single evaluation moment. Preparation, evaluation and decision making are entangled in a cyclic process.

This thesis considers three dimensions of ex ante evaluation, in accordance with the theory described above:

Dimensions of evaluation procedures		Abstractness
1.	Ex ante evaluation from the perspective of policy-making theory	Abstract
2.	Scope of evaluation process (strategic/spatial/operational)	
3.	Process design	Practice

Table 2.5 Dimensions of the theoretical model, serving as assessment framework in this thesis

In the following chapters processes of ex ante evaluation in the Netherlands (MIRT; chapter 3) and in the European Union (TEN-T; chapter 4) will be assessed by applying these theoretical dimensions. The purpose of this assessment is to discover strong points and weaknesses in the processes, with the objective to advice about learning possibilities for TEN-T from the Dutch situation.

2.8 Relevant theory on policy transfer

This section considers the relevant theoretical underpinnings of the concept of policy transfer. The objective is to determine what the theoretical preconditions are for transferring policy or policy instruments from the Dutch situations to practical application in European Union. This framework of preconditions is used in chapter five to complement the recommendations about useful policies and instrument. With the use of this framework it is possible to establish how elements from the Dutch practice can best be implemented in the European evaluation context for the assessment of possible TEN-T projects.

Dolowitz and Marsh (2002) conclude that policy transfer is a phenomenon that has become common practice in contemporary policy making. The use of policy from outside the own administration has become much easier because of the recent growth information technology. Representatives of administration nowadays meet much more frequently. Furthermore, they also identify policy entrepreneurs, who develop and promote ideas by 'selling' policy around the world.

Different types of policy transfer can be distinguished.[3] It is important have a clear view on the circumstances and type of policy transfer. To do so, the following questions should be taken into consideration (Dolowitz and Marsh, 2002):

- *Why transfer?*
  There can be a wide variety of reasons for the transfer of policy or policy elements. This can vary from coercive transfer, such as direct imposition of policy, to voluntary transfer, which could imply the drawing of lessons from other administrations.
- *Who is involved in transfer?*
  Many actors can be involved in the transfer of policy. Usually at least elected officials and bureaucrats are involved. Others that could be involved are consultants, think tanks, (supranational) institutions, and ideologies and cultural values.
- *What is transferred?*

[3] Appendix 9 provides an overview of a policy transfer framework (from: Dolowitz and Marsh, 2002)

On the one hand the objects of transfer can be projects, or project goals, -content and –instruments), or programs. On the contrary it is also possible to learn from each others failures and take negative lessons, about how an issue should not be approached.

- *From where are lessons drawn?*
  Lessons can be drawn from both the past and present and transfer may vary from within a nation to cross national cooperation.
- *What is the degree of transfer?*
  Finally, the degree of transfer can also vary significantly. Complete copying of policy is not very likely to happen, since there are always situation specific issues that have to be taken into account. Other forms that exist are emulation, mixing and inspiration.

The characteristics of policy transfer are important to be able to develop a suitable approach to maximize the chances of a successful transfer of policy itself or (a whole of) policy instruments. If the chosen approach is not considered properly, transfer may result in failure of the implemented policy. Banister (in Rietveld and Stough, 2005, p. 55-56) states that at least six barriers to policy transfer can be distinguished. It is important that these barriers are taken into account when considering the possibilities for policy transfer.

1. Resource barriers
   This is a straightforward precondition. The implementation of a policy measure requires a certain amount of financial and physical resources. The lack of these resources may cause considerable delay of implementation or cancelling. Lack of resources can be linked with following barrier.
2. Institutional barriers
   Implementation of transferred policy also requires a certain institutional capacity. Problems on this subject often relate coordination problems between different or within administrative organizations. Another aspect are possible problems with other, already existing policy.
3. Social and cultural barriers
   This barriers concern the acceptability of measures to the targeted groups. If measures are not accepted by the groups they are aimed at, then the effectiveness of the policy will be reduced.
4. Legal barriers
   The implementation of new policy takes place within the context of already existing regulation and policy. This may complicate or the existing laws may even prohibit the introduction of new policy measures taken from another administrative system.

5. Side effects
   The introduction of transferred policy can have serious side effects in its new context, such as the hindrance of other policy or activities. The implementation of new activities may be complicated to serious extends.
6. Other (physical) barriers
   Other barriers may have physical forms, such as geographical or topographical. For some policies there could be spatial restrictions involved in the implementation, which may limit the possibilities for transfer or the effectiveness. This implies that the specific context of the situation is important when considering the implementation of transferred policy.

These six barriers all have constraining effects or may limit the efficiency of transferred policy and should therefore be taken into account when considering implementation of transferred policy. They will be involved in the discussion (chapter five) about the possibilities of implementing the Dutch approach to policy evaluation, or elements of it, in the European TEN-T framework.

Chapter 3

The Dutch situation - MIRT

3.1 Introduction

The overall objective of this chapter is to define the necessary preconditions for sound ex ante evaluation of proposed infrastructure projects. The framework, which has been developed in the previous chapter, will be used to conduct research on the three main dimensions, which have been defined. The required preconditions for successful evaluation of infrastructure proposals and projects within the context of TEN-T will be extracted from the evaluation methodology used in the MIRT-programme (Meerjarenprogramma Infrastructuur, Ruimte en Transport, in English: Long term programme Infrastructure, Space and Transport) in the Netherlands. As described in the introduction to this thesis, TEN-T and MIRT are comparable programmes aimed at the development of a consistent infrastructure network in a certain geographical area. The main difference between these programmes is that MIRT has recently been extended with a spatial dimension (R is for 'ruimte', space) and now promotes an integrated spatial planning approach. For the purpose of this thesis the main focus is on the infrastructure parts of the MIRT-programme. A second difference is the scale level; MIRT is operating on national level, TEN-T is a continental programme. However, since the objectives of both MIRT and TEN-T are very much comparable, a sound comparison between the two can be made.

This chapter examines the way new MIRT infrastructure projects are evaluated and selected in the Netherlands and what elements can be considered as strong values, offering chances for programmes of comparative nature. With conducting this assessment the following question will be answered in this chapter: *How are new infrastructure projects in the MIRT-programme in the Netherlands being evaluated and selected and what are strengths and weaknesses in this approach?*

The MIRT methodology will not be considered as a static unity in this chapter. The objective is to give a view on the current MIRT approach on ex ante evaluation as the dynamic result of experiences and developments, which have taken place, to obtain a good view on the underlying thoughts of the current evaluation methodology. The research conducted for answering the question above aims at the three dimensions of ex ante evaluation defined in the previous chapter and considers both content and procedures of ex ante evaluation.

Before the mentioned three-dimensional review of the MIRT-framework for ex ante evaluation and selection commences, this chapter starts with framing the MIRT-programme in the wider context of developments in Dutch spatial and transport policy (paragraph 3.2) and the legal frame in which MIRT operates (paragraph 3.3). The general MIRT ex ante evaluation methodology and its backgrounds will be elaborated in paragraph 3.4, with the objective to have a clear view on the position of ex ante evaluation within the MIRT-programme. After this, ex ante evaluation will be considered from the perspective of policy-making theory in paragraph 3.5. This will be followed by an assessment of the scope of the evaluation processes within the MIRT-programme in paragraph 3.6. Finally, in paragraph 3.7, the process design of MIRT ex ante evaluation procedures will be taken into account. After the three dimensions of ex ante evaluation have been assessed within the context of MIRT, the chapter will be concluded with defining the position of MIRT on the three-dimensional spectrum and the possible usefulness of Dutch evaluation principles in the European context.

3.2 Dutch transport policy

For a solid understanding of the setting of the current approaches in the MIRT programme it is important to understand the evolution in the field of spatial and transport policy in the Netherlands. Therefore, this section provides an overview of essential developments in this policy field and the national plans on spatial policy and mobility policy. The description starts in the period of the emergence of mass transport after the Second World War.

3.2.1 Integration of transport planning

Initially, transportation planning was rather inward oriented at facilitating the beginning of mass-transport with the supply of adequate infrastructure. This resulted in a sectoral oriented, linear approach to the planning of road infrastructure. The attention was on the planning and realisation of the infrastructure plans. The relationships with other aspects were largely ignored in planning process. Under the emerging mobility and environmental problems in the final quarter of the twentieth century, this traditional approach met increasing resistance. Especially the narrow, sectoral focus was challenged. At first, this led to internal integration, followed by external integration of the planning of transport infrastructure with other policy sectors. Internal integration is a policy process aimed at the integration of various elements within a specific policy sector, in this case the traffic and transport sector. The internal integration of the sector was, for example, expressed by policy measures as the coordination of different modes of transport and infrastructure, resulting in a search for multimodal solutions. A further example is the concentration of the

infrastructure development policy on network approaches, by primarily considering the coherence in the infrastructure network (Struiksma and Tillema, 2009).

An early aim for external integration of the Dutch transport policy with other relevant policy sectors can be retrieved in the third long term advice on traffic and transport of 1998 (Vuijsje, 1998). This advice dissociated from previous advice notes in the sense that it calls the government to produce a broad, clear and integral vision on the coherence between welfare, economy, spatial policy and mobility, including objectives and preconditions for responsible authorities. This consistent vision should serve as a 'casco' for governmental plans about future development in the concerned policy sectors. According to this paradigm spatial planning should be seen as a broad policy process, instead of oriented at specific policy sectors. A paradigm shift is asked from infrastructure planners and policy makers in related sectors. A shift towards area oriented approaches aimed at the sustainable development of specific areas and acknowledgement of the opportunities offered by cooperative processes, rather than protecting the existing situation by means of strict norms (Weimer, 2007). Thinking from the perspective of the area involved in the planning tasks in a broad cross-sectoral process, should prevent cost overruns and delays (Struiksma and Tillema, 2009). This is also one of the main conclusions of the influential Elverding committee in 2008 (Commissie Versnelling Besluitvorming Infrastructurele Projecten, 2008).

3.2.2 The national spatial plan and national mobility plan

Despite the first steps towards external integration of infrastructure planning in the 1990s, the long term plans on infrastructure and transport still aimed at internal integration through optimization of utilization of roads and paying for mobility. The national spatial plan of 2004 was the first to state concrete proposals for coordination of mobility and spatial planning through integrated plans ('Nota Ruimte': VROM et al., 2006). The national spatial plan of 2004 intended to increase the coherence between traffic and transport, spatial considerations and economy on different administrative levels (Weimer, 2007).

The convergence of infrastructure planning and other spatial sectors was continued and implemented by the national mobility plan of 2006, which sets the national transportation policy till 2020 ('Nota Mobiliteit': V&W, 2004). The national mobility plan called for coherence among spatial policy sectors, as well as integration of spatial policy and transportation policy. Another aim of the mobility notice is to develop cooperative approaches the central and decentral administrations, as well as cooperation processes with private and other relevant actors (Weimer, 2007). The objective of the national mobility plan is to prepare and accommodate the Netherlands for future growth of the transportation sector for the strengthening the country's international competitive position. A further

objective is to settle existing problems in the transport network, which have not been settled by previous policy intentions. To achieve this, the plan calls for area-oriented approaches, promoted by the national government. For the achievement of these objectives the government determines on plan maps, which linkages are to be added to the network or upgraded. These plan maps define the (future) spatial claims of the major infrastructure of national importance; road-, rail- and waterway networks with an essential role in achieving the objectives of the plan. The plan maps also function as a guiding regulation for spatial development, including transport infrastructure, on lower administrative levels (regional, provincial and municipal). The lower governmental layers are obliged to develop regional and local mobility plans with additional benefit to the infrastructure network planned and realised by the national administration (V&W, 2006).

According to the current legal setting the national mobility plan requires a Strategic Environmental Assessment to be performed. However, the adoption of the current mobility plan has taken place just before the implementation the plan-EIA in Dutch legislation.

3.2.3 MIRT-programme

Finally, the aim for integration of spatial planning sectors was also implemented in the planning framework for the MIRT-programme, with the introduction of the spatial policy dimension (R) in the traditional MIT-programme in 2008. The MIRT-programme is coordinating the realisation of the intended spatial policy in the national spatial and mobility plans (Weimer, 2007). It aims at an integral and area oriented approach of spatial and mobility related issues by means of area agendas leading to synergy in the spatial policy.

In 2008 the influential Elverding committee advised about improvements and accelerations to the infrastructure planning framework (Commissie Versnelling Besluitvorming Infrastructurele Projecten, 2008). The advice of this committee has been largely incorporated into MIRT-framework. The committee urged for a broad, directive reconnaissance phase, followed by a compact and pragmatic plan study phase. The objective of this broad reconnaissance is to prepare for a smooth continuation of the planning process, through the early involvement of relevant stakeholders in the planning process. The early involvement of stakeholders takes away the stress on the final decision of the reconnaissance phase, by introducing the opportunity of broad-shared proposals. The result should be a strong base for the continuation of the process. In the final realisation phase, the committee advises that hindrance to the progress of realisation should be reduced by means of a change in legal arrangements (Commissie Versnelling Besluitvorming Infrastructuur, 2008). The advice of this committee is a much as possible implemented into the MIRT-framework.

The implication of these changes is that there are two types of decisions in which ex ante evaluation plays an important role, can be distinguished. At first there is the broad reconnaissance phase; secondly there are decisions on more operational issues in the plan development phases. The specific character of these decisions requires the support of different ex ante evaluation studies. The reconnaissance phase requires broad and global evaluation studies, such as plan-EIA and a CBA on indicative figures. On the other hand the plan development phases require more in depth evaluation and project analysis, highly detailed and with a narrow focus, such as a project-EIA (Visser and Korteweg, 2008). The differences between strategic, tactical and operational accents within ex ante evaluation studies have been described in table 2.3 More specific information on the implementation of this division into the framework for the MIRT-programme can be found in section 3.4.

3.3 Legal framework of the MIRT-programme

The objective of the MIRT-programme is to coordinate the planning of important infrastructure projects in the Netherlands and to streamline the financial framework of the projects involved. The legal framework for decision making on (most of) the projects involved is laid down in the 'Tracéwet' (1994), which has the objective to provide a target oriented and integrated procedure for timely decision making on and realisation and modification of major infrastructure, and the recent 'Wet Ruimtelijke Ordening' (WRO, 2008), which indicates how authorities can make and modify spatial plans. Major infrastructure projects within the MIRT-programme, the main concern of this thesis, are subject to the Tracéwet procedures. MIRT-projects which consider provincial or municipal infrastructure, are subject to the WRO.

The Tracéwet is a procedural law. It describes how the decision-making on infrastructure takes place. Furthermore, the law demands attention specific points as social-economic effects (OEI/CBA, see section 3.4.2) community support, spatial and environmental considerations. The procedures of the Tracéwet have been included in the framework of rules of the MIRT-programme. The MIRT-framework and its phases will be described in section 3.4. For the assessment of environmental effects the Dutch law has special provisions defining the need for Environmental Impact Assessments (EIA).

The application of environmental assessments is legally framed by the implementation of European directives on Strategic Environmental Assessment and Environmental Impact

Assessment[4] in the 'Wet Milieubeheer' (WM, 1993: Act on Environmental Management). The European guideline and the Dutch act regulate the application environmental impact assessment for projects that may have considerable effects on the environment. The implementation of the SEA-directive has resulted in the application of a strategic Plan-EIA (since 2006) for plans and programmes. The European EIA-directive forms the basis for the obligation for a project-EIA, on more operational environmental issues. The act also refers to a specific decree on EIA, which further describes EIA-obligatory activities, as well as the differences between different types of EIA (InfoMil, 2009). The objective of the EIA provisions is to fully incorporate environmental considerations into decision making. In the Netherlands, a special commission on environmental assessment the quality of impact assessments and provides independent advice about the assessments to the decision making authorities (Netherlands Commission for Environmental Assessment; NCEA, Box 3.1).

[4] More specific information on the European SEA directive and the EIA directive can be found in chapter two, box 2.1. This section elaborates the European guidelines for environmental assessment.

Box 3.1: Netherlands Commission for Environmental Assessment (NCEA)

Since 1987 the role of the Netherlands Commission for Environmental Assessment has been to provide independent advice about the projects and plans that involve considerable environmental consequences. The NCEA is currently involved in the preparation and completion of plan-EIAs as well as project EIAs. The influence of the environmental assessment procedures are concentrated at two specific moments. The first involvement of the EIA-commission is at the start of the procedures when the commission advices about the scope of the assessment. At the end of the environmental assessment procedure the commission provides an advice on quality of the assessment in relation the spatial decision that have to be taken. The involvement of the NCEA is currently obligatory in the case of operational project-EIAs and often voluntary in the case of strategic plan-EIAs. Besides this the commission can be requested to provide voluntary advice and support to environmental assessments on other elements in the procedures. The practical role of the NCEA in a specific project in the Netherlands is elaborated further in the case study of the A2 Maastricht project in chapter five (NCEA, 2009)

On January 1 2010 the legislation on environmental assessment in the Netherlands is expected to be moderated. The main point of environmental assessment shifts towards the strategic level. Furthermore, the changes aim to accomplish more coherence between plan-EIA and project-EIA. A final objective is reduce the weight of the legal burden on the procedures, by legally prescribing not more then the European Environmental directives prescribe. In the renewed situation the strategic assessment level will take into account the global description of use and necessity of a plan as well as a consideration of location alternatives, which provides a tactical accent to the plan-EIA. The assessments on project level will have a more concrete character. Depending on the complexity of the issues at hand a limited or extended procedure will be followed. In accordance with these changes the role of the NCEA will also be subject to change. The main point of the involvement of the commission will shift to providing advice about the quality of performed strategic or extended operational assessment. Advice about limited operational procedures as well as advice at the start of procedures (on scoping) will be no longer mandatory (Van Velsen, 2009).

3.4 The MIRT-programme and ex ante evaluation

The objective of this section is to provide an overview of the modes of operation of the MIRT-programme. First, the general methodology and procedures will be described. This will be followed by specific attention for the included ex ante evaluation provisions.

3.4.1 The MIRT planning framework

As described, the MIRT-programme is the successor of the MIT programme. MIT was the long-term programme on infrastructure and transport of Dutch government. The objective of MIT was a coherent programme for infrastructure projects related to mobility and water management (V&W, 2007). In 2008 MIT has been replaced by MIRT. MIRT could be considered as a framework that aims to improve spatial quality by coordinating the investment programmes in infrastructure and transport and other spatial policy sectors by means of coherent area oriented visions (Visser and Korteweg, 2008). Since the MIRT and the framework are only in charge since 2008, its system cannot be seen as a self-contained entity, but should be considered in the context of preceding developments. In this light the ex ante evaluation methodology will be discussed.

The structure of the MIRT programme has been laid down in a framework of rules. This framework of rules describes the process, which projects, have to pass towards completion of the project in the MIRT programme. For this purpose it includes, interwoven with other process elements, the basic structure of ex ante evaluation of projects in the MIRT programme. The universal framework of rules for the MIRT-programme consists of three phases and contains five decision moments (see figure 3.1). This phased structure is roughly the same as the decision-making structure in the former MIT-programme. However, the content of the different phases has changed due to the contextual changes of the MIRT programme.[5] These changes have been described in this chapter. The content of the phases will be described in the following section, from the perspective of ex ante evaluation.[6]

[5] See for comparison the old frameworks of rules of the MIT-programme (e.g. V&W, 1997)
[6] A detailed overview of a MIRT procedure can be found in appendix 2 and 3 that show the procedural elements of the MIRT procedure.

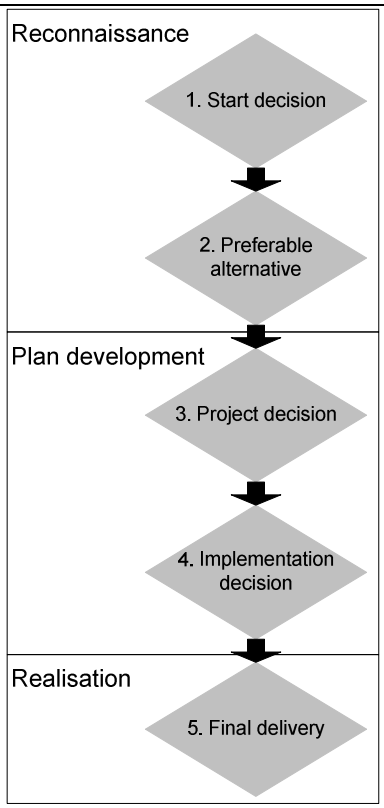

Figure 3.1 *Stages and decision moments in the MIRT-procedure; 3 phases, 5 decision moments*

The objective of the application of this universal framework of rules for all parts of the programme is to ensure a consistent and coordinated spatial policy. This implies the development and application of a uniform ex ante evaluation methodology for all projects within MIRT. Uniformity leads to sound support of proposed policy and it also supports the area-oriented approach of the MIRT programme (Visser and Korteweg, 2008).

3.4.2 Strategic considerations

Before commencing with an overview and analysis of the individual ex ante evaluation instruments of the MIRT-programme this paragraph will first pay attention to the selection of the whole of projects and programmes within the MIRT-programme. In essence the MIRT-programme is a realisation instrument for the administrative institutions involved. The objective of the programme is the realisation of the intended spatial and mobility policy. As described, this policy vision has been laid down in the national spatial plan and in the national mobility plan (see section 3.2.2.). The national plans describe their directions with a notably high degree of abstractness. This provides the involved actors with the possibility to develop area oriented visions, specifically aimed regional, decentral interests (Weimer, 2007). The conversion of this strategic vision into concrete projects in the MIRT-programme takes place in a cooperative effort of administrations involved (national, provincial, municipal administrations). One could argue that this strategic conversion is also a form of

evaluation and selection of projects. Therefore this combination of top-down and bottom-up plan making deserves attention in the light of this thesis. In strategic planning of the projects in the MIRT programme a special task is role is played by the so-called administrative deliberations ('bestuurlijk overleg'). These deliberations, between national and regional authorities have the objective to monitor the coherence of the MIRT-programme as a unity, as well as the monitoring of the effectiveness of the programme, in essence also forms of evaluation. These deliberations have a formal role in the process. A further objective is to prioritise spatial programmes and projects through the preparation of 'area agendas'. In essence this is the conversion of the strategic policy visions into specific projects. The prepared area agendas are the shared integral visions of national and regional administrations on the future development of the region. They form the basis of the individual programmes and projects within the MIRT-programme. The area agendas provide policy support to possible new projects and programmes. Furthermore, they promote the coherence between among policy sectors and the national and regional policy (V&W and VROM, 2009)

The administrative deliberations take place two times a year between representatives of the national government and of the individual regions (V&W et al., 2009). The consequence of this form of public-public cooperation is that the choices about prioritization and selection of individual projects within the programme are influenced by top-down and bottom-up interests. This mode of operation forms a balanced approach. It appears to be very complex to prepare a more technical or rational framework for these considerations between different individual projects within a strategic programme, according to Arts (in conversation[7]). The first selection of projects and maintaining the coherent development in the programme are in essence political activities, based on area visions and agendas. It appears that at the beginning of the planning process public-public cooperation and political assessment play important parts; more important than instrumental evaluation projects (Arts in coversation). A balance between top-down and bottom-up project initiation and planning forms the start of the MIRT-process.

3.4.3 Ex ante evaluation in MIRT

In response to questions, Visser (KiM) indicates that in principle every formal decision moment in the MIRT-framework for individual projects (Start decision, decision on preferable alternative, project decision and realisation decision) demands some form of evaluation. The evaluations provide information to decision makers to support them in their political task. Without the availability of information it is not possible to take a sound

[7] An overview of all persons and organizations interviewed can be found in appendix 10

decision. According to Visser the MIRT framework provides specific information profiles for each decision moment. It is not possible to see ex ante evaluation as an isolated part of the MIRT-process. Evaluation instruments form an integral unity with the other MIRT-procedures. Therefore ex ante evaluation will be considered in coherence with the total MIRT-methodology. Appendix 2 provides a detailed overview of the MIRT-procedure and shows the interwoven character of the evaluation instruments with the overall MIRT-process.

3.4.4 Ex ante evaluation in the reconnaissance phase

The main core of ex ante evaluation in the MIRT-programme is situated in the reconnaissance phase. Reconnaissance, which is limited to a maximum of two years, commences when the decision to start the MIRT-procedure is taken and follows a path of strategic and tactical assessment. The end of this phase is marked by the decision on the preferable alternative (V&W and VROM, 2009). Early application of ex ante evaluation implies a strategic character of the evaluation studies. An advantage of early tactically oriented evaluation studies is the room for variation it leaves to the project; in early stages it is easier to make adaptations. A further advantage is that in the remaining process after the reconnaissance phase smoother progress may be expected. As a consequence of the thorough assessment of project alternatives in the reconnaissance phase, the decision on the preferable alternative can have a more definite character. One preferable alternative is chosen and this choice is, in principle, not challenged anymore in the remaining process (Visser, KiM).

The evaluation in the reconnaissance phase of MIRT forms the foundation for the decision on the preferable alternative, which marks the end of the reconnaissance phase. Visser and Korteweg (2008) argue that the strategic evaluation of activities in the MIRT-programme and the information on which the decision about the preferable alternative is based have a dualistic and complementary character in essence. Firstly, the benefit and necessity of solving the existing spatial problems are being determined. Benefit and necessity are defined by preparing a cost benefit analysis. Secondly, the possible directions for solution are assessed and a most preferable alternative is selected. Determining need and benefit and defining the best alternative can be considered to be the core of strategic evaluation of a project in the MIRT-programme. The evaluation procedures can be retraced in the framework of rules.[8]

The reconnaissance studies, an interwoven series of evaluations and studies, are merged into a reconnaissance report, which forms the basis for decision making. The format for the reconnaissance report is described in the framework of rules. The individual elements will be described below. Table 3.1 shows two possible paths of reconnaissance, depending on

[8] See also the procedural overview in appendix 2

whether or not a structure vision is obligatory. A structure vision is required with area-oriented initiatives and it offers a formal legal framework to the project and increases regional support. The legal arrangements for structure visions are described in the spatial planning act (WRO). Evaluations with a structure vision almost always require a plan-EIA to be prepared.

Evaluation instruments	Reconnaissance with structure vision	Reconnaissance without structure vision
Plan-EIA	x	
CBA (OEI)	x	x
Estimation of costs	x	x
Market participation	x	x
Summary of total effects	x	x

Table 3.1 *Ex ante evaluation procedures in the reconnaissance phase of MIRT (V&W and VROM, 2009)*

Before the actual evaluation procedures can commence, a clear definition of the scope of the project is required for target oriented and sound evaluation practices. Other issues that have to be defined before the actual evaluation can commence are the outline of the reconnaissance and a process design. The process design should let the evaluation process take place in the most suitable sequence and coordinated manner.

Plan-EIA – The attention for strategic and tactical evaluation in the MIRT framework is expressed by the addition of the obligation to perform a plan-EIA. A plan-EIA offers the possibility of strategic assessment of different alternative solutions on their environmental effects. The MIRT's predecessor, MIT, only required a project-EIA on operational issues to be carried out in the later plan study phase. The objective of plan-EIA is to be able to fully consider environmental effects within strategic choices about possible spatial developments. Reconnaissance studies with a structure vision generally require a plan-EIA, which assesses different alternative solutions on their environmental effects. As has been described in box 3.1, the application of plan-EIAs as well as project-EIAs is supported by the Netherlands Commission for Environmental Assessment.

Cost Benefit Analysis – Another addition to improve the strength of the reconnaissance phase is the upgrading of the Cost Benefit Analysis. Where the MIT only required a CBA on indicative figures, the MIRT-reconnaissance requires a full CBA to be carried out. This CBA has to follow the OEI-recommendation, obligatory for all large infrastructure projects in the

Netherlands. OEI is a standardized approach to CBA on large infrastructure projects and prescribes an integral social CBA. The intention is to establish the net benefits to well being on national level. OEI/CBA includes all directs and indirect welfare effects and assesses the benefits of a project for the society as a whole. Besides costs and benefits of realisation and maintenance, it also includes effects on accessibility, economy, safety, nature and environment as well as legitimacy, efficiency and effectiveness of proposed investments. This broad analysis must ensure to include all relevant issues for transparent and well-informed decision-making. Since not all relevant effects can be expressed in monetary terms, the result of an OEI/CBA cannot be a single figure. Non-priceable effects, such as environmental impacts, are quantified as much as possible and shown in the final report. Then the balancing between monetary and non-monetary effects becomes a political issue. This keeps the OEI/CBA-method and the reconnaissance report objective (Eijgenraam et al., 2000: p.25-31; Douwes, 2002; Koopmans, 2004: p.10). A point of attention for the use the OEI/CBA method in the MIRT-programme is its focus on national level, while the area oriented approaches in the MIRT-programme point its attention to regional effects. This mismatch must be addressed in order to ensure optimal contribution of the OEI/CBA method, according to the Dutch intelligence centre for mobility policy in an interview (Visser; KiM).

The intelligence centre for mobility policy indicates that the objective is to align EIA and CBA procedures as much as possible within MIRT. This would be complementary to the integrative modes of operation desired within the MIRT framework. However, the legal status of Environmental Impact Assessments makes it hard to adapt its procedures to the required CBA procedures. Since the MIRT framework is relatively recent, this alignment has to develop further in the future. Currently, the alignment of EIA and CBA primarily takes places on the level of individual projects (Visser; KiM, 2009).

Estimation of costs – This provides an estimation of all costs of realisation of (realistic) alternative solutions. An estimation is important in supporting the required budgets and is described with appropriate margins, which are tightened in the following phases of the MIRT-programme. Increased financial certainty is a precondition for progress of a project in the MIRT-programme.

Market – This continues on the financial estimations. Via a market scan and consultation, chances, risks, possible benefits and the added value of involvement of the market are analysed (V&W and VROM, 2009). Involvement of market parties has proofed to provide serious benefits for both government and private actors, such as innovations and lower realisation costs. The Elverding committee advised to aim for early involvement of the

market and interweaving of public and private roles (Commissie Versnelling Besluitvorming Infrastructuur, 2008). When other parties could be involved in the financing of the project it is often meaningful to prepare a business case. A business case reveals whether it is worthwhile for private parties to step into a MIRT-project with a financial stake and an overview of chances and risks for private parties can be helpful in decision-making. The business case should be prepared when the financial estimations are clear. When the definitive estimations have taken place in the following phases, the business case can also be refined. Another instrument that is used is the Public-Private Comparator (PPC). PPC is based on a business case but provides a different perspective; namely whether or not a private party is able to finance and exploit a project more efficiently than the government. Both the preparation of business cases and PPC are meant to improve the financing of a project within the MIRT-programme (Wortelboer-van Donselaar et al., 2009).

Summary of effects (total) – This summary takes into account all effects of all (sub)projects of the preferred alternative. Also synergy effects are to be incorporated, in qualitative and quantitative terms.

Preparation of all the above evaluation studies should take place in a coherent manner, so they fit into the same determination frame. It is important for decision makers to be able to decide about projects on the basis of coherent information. Therefore the instruments cannot be seen as being independent. To achieve this, there are guidelines available, such as the guideline on preparing a business case (Wortelboer-van Donselaar et al., 2009).

3.4.5 Further ex ante evaluation in MIRT

In the reconnaissance phase of the MIRT-programme ex ante evaluation has a strong strategic as well as solid tactical focus in the preparation of the decision on the preferable alternative. When the decision on the preferable alternative is taken, the degree of political certainty around the project and how it will be implemented increases. In the plan study phase, the scope shifts to more operational issues about the implementation of the preferred alternatives. After the decision on the most preferable alternative, the next decision is the project decision. This decision is on possible variants within the chosen preferable alternative, which coincides with the 'Tracé-decision' from the Tracéwet. This decision often requires a project-EIA to be carried out. A project-EIA builds further on the results of the reconnaissance phase and has a more operational focus than a plan-EIA. The alternative and variants are elaborated more in detail. Environmental developments, including autonomous developments, are considered and mitigating and compensating measures are proposed. Furthermore, on other issues involved in evaluation, such as technical issues and financial, economic and social effects, the estimations are made more specific, since indications about

the final result of projects become much more clearly in the plan study phase (DWW, 2006: p.15; V&W and VROM, 2009: p27-30).

The plan study ends with an implementation decision. This is mainly a decision of technical and financial considerations. The main point of ex ante evaluations is on the financial details of the realisation itself and the possibilities for market involvement. This phase provides the final details on construction costs and possible benefits for private parties involved. When the implementation decision has been taken, the realisation of the project and construction works can commence. This point marks the end of the ex ante evaluation of projects in the MIRT programme. The objective of evaluation shifts here from planning to monitoring and controlling (V&W and VROM, 2009: p.31-33).

3.5 Ex ante evaluation in MIRT from policy-making perspective

From this point the ex ante evaluation framework will be assessed by means of the three theoretical dimensions on policy evaluation that have been described in chapter two. This paragraph considers the policy-making perspectives on evaluation. It is important to notice that one perspective on policy-making does exclude the other perspectives. Depending on the developed ex ante evaluation practices, all three perspectives have their role to lesser or greater extend. It is not possible to conclude in favour of one and reject the others. The ex ante evaluation of projects in MIRT is made up of instruments such as CBA and EIA. From a traditional point of view these instruments can be considered to be rather straightforward and technical instruments. The application of these instruments requires a fair amount of specific expertise. However, when the ex ante evaluation instrumentarium is considered as a unity and in coherence with the MIRT-framework, the instrumentarium does appear to include elements of communicative and institutional policy-making.

Besides the technical-rational dimension to ex ante evaluation, the framework of rules explicitly considers the involvement of stakeholders of crucial importance for the process and the decision that are taken. Early involvement of stakeholders of any kind is considered to be a priority. Often, these actors cannot have a formal role in the decision-making process. However, as indicated by the above mentioned Elverding committee (2008) in the Netherlands and supported by the Ministry of Transport, early, coordinated and well-directed involvement of relevant stakeholders has considerable benefits. The advice of this committee is embedded into the MIRT-framework as much as possible. According to the committee report proper involvement and participation of stakeholders in problem analysis, formulation of ambitions and decision on the preferable alternative can:

- Strengthen the programme content
- Increase project support
- Speed up the decision-making

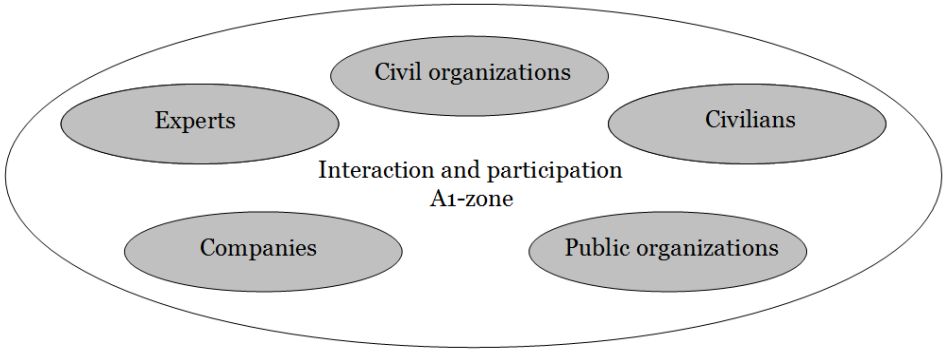

Figure 3.2 Stakeholders in the planning of infrastructure projects (Based on Overijssel Province, 2009: p. 11)

In essence the Elverding report has provided a legal basis for consultation and participation processes that have already proved their value to planning processes. In planning processes consultation of the public traditionally takes place at the end, when a prepared plan is presented for formal consultation. The preparation of plans used to be a matter of interaction between national and regional administrative authorities. In an interview[9], the Dutch Centre for Public Participation indicates that this method often appeared to be prone to failure and has been the cause for many considerable delays to planning processes. The solution to this problem is, as the Centre indicates, the reduction of the weight of the formal consultation moments at the end of the reconnaissance phase as described by law, by introducing new possibilities for public participation during the preceding planning process, with a more informal character. This idea has been implemented in the framework for the reconnaissance phase of the MIRT-programme, which can currently be typified by careful and interactive plan forming. According to the Dutch Centre for Public Participation, advantages can be achieved in the following stages of the process, by means of a professionalised organisation of the preparatory stages.

The framework of rules also considers reaching consensus with and among stakeholders to be essential for the continuation of the process during the reconnaissance as well as during later phases of the process (V&W and VROM, 2009). The approach of involving many stakeholders in the MIRT-programme from the early stages, both formally and informally,

[9] An overview of all persons and organizations interviewed can be found in appendix 10

indicates a clear aim for a communicative approach. It shows awareness of the importance of the process environment for a successful result. Furthermore, the involvement of stakeholders in MIRT-projects can also be considered as an institutional approach. In order to achieve successful and functional participation, individual situations deserve a 'custom made' approach. Due to the differences between projects and the complexity of the issues involved the most suitable approach is dependent on the specific context. Responding to the situational context in the design of the consultation strategy can be considered as a recognition of institutional frameworks surrounding the evaluation and decision-making process of a certain infrastructure project.[10]

For individual projects, the aim of involving stakeholders as early and intensive as possible often results in the development of a specific communication and participation strategy next to, for example, strategies for content and for decision-making. The objective of such strategies is to optimize stakeholder involvement and participation through a considered and coordinated approach.[11] The benefits of solid involvement strategies are very clear and after the advice of the Elverding committee, the Dutch government has pressed for the development of a guideline on consultation and participation, to professionalise development of involvement strategies. The guideline prescribes the development of a process design and participation strategy at the beginning of the reconnaissance, embedded in the start decision, and plan study phases (Centrum Publieksparticipatie, 2009). In essence, the guidelines have professionalised and streamlined what often already happened. The guideline states five starting points for healthy public consultation:

1. Participation must take place at the service of decision-making
2. Custom-made participation forms
3. Cooperation of directors, officers and public
4. Appropriate attitude, skills and knowledge
5. Clear and reliable communication

Despite the fact that the administrative arrangements for the open approach described are relatively new, early involvement of relevant stakeholders looks to meet the expectations. It is experienced as an innovative approach. The benefits of involving and bringing stakeholders together in an early stage are currently experienced. It is an advantage if all points of view are clear from the beginning. Further, in this approach stakeholders are provided the opportunity to get used to each other and learn to 'speak the same language'. Especially the early involvement of the market looks to bring much benefit. The possibilities for public-

[10] Based on an interview with the Dutch Centre for Public Participation
[11] See for example: plan for the MIRT-reconnaissance Antwerp-Rotterdam; Ministry VROM, 2009 and plan for MIRT-reconnaissance A1-Zone; Overijssel Province, 2009

private cooperation are improved. Nevertheless, although the process is smoothened and there is a better chance of avoiding conflicts, real conflicting interests will not be taken away. To conclude this paragraph, the current settings for ex ante evaluation appear to provide a healthy balance between the involvement of technical methods and communicative policy-making, with the awareness of the importance of the institutional context of the planning-process.

3.6 Scope of ex ante evaluation within MIRT

The MIRT framework of rules tends towards standardization and uniformity of evaluation procedures. The objective is to improve decision-making by means of better comparability of evaluation studies. Due to the standardization of the general planning methodology within the MIRT-programme, the scope of ex ante evaluation moments within the MIRT-programme also have a unified character. The standardization of the scope of ex ante evaluations increases the possibilities for mutual comparability of different projects. This increases the quality of decision-making in the planning process (V&W et al., 2008).

The scope of ex ante evaluation within the planning process is dependable on the scope of the overall planning process. The planning process for the purpose of MIRT, as described in the framework of rules for the programme, is characterised by vertical dynamics. The scope of the evaluations and planning develop in accordance with the theoretical considerations and the concept of tiering, as described in section 2.5 of this thesis. The outcomes of levels of higher abstractness serve as a frame of reference for evaluation and decision making in following planning stages. The table below provides an overview of the scope of planning and evaluation in relation to the content of the MIRT-programme.

	MIRT-phases	Scope of evaluation	Result	Vertical dynamics
	National Spatial Plan National Mobility Plan	Strategic	A policy framework for the development of MIRT	↓
0	Public-public cooperation	Strategic	Start decision	
1	Reconnaissance	Tactical	Decision on preferable alternative	
2	Plan study	Operational	Project decision/Implementation decision (end of ex ante phase)	
3	*Realisation*	*Monitoring/ ex post evaluation*	*Completion*	

Table 3.2 Scope of evaluation studies in different phases

Strategic plan making and corresponding evaluation forms the basis for the development of the MIRT-programme. The principles and policy directions for the development of MIRT are extracted from the general spatial and mobility policy, set by the national administration in the Netherlands. These documents form the strategic visionary backgrounds of the MIRT-programme (see section 3.2). The policy laid down in these strategic policy documents has to be converted into operational plans and projects. This conversion and integration of the policy into the MIRT-programme in the form of strategic plans takes place in the administrative deliberations and through the involvement area agendas. In section 3.4 these deliberations have been described as a balancing act between top-down and bottom-up plan making (public-public cooperation). The result of the administrative deliberations is the incorporation of project initiatives into the MIRT-programme by means of a strategic start decision (section 3.4.3). This means that there is an intention to accomplish the proposed spatial and mobility policy by means of the realisation of a project or programme within the MIRT-programme (V&W and VROM, 2009).

After the start decision has been made, the intended project is incorporated into the MIRT-programme. The strategic objectives of the overall spatial and mobility policy have been converted into a concrete project initiative. Within the MIRT-programme, the reconnaissance phase and the decision on the preferable alternative are the most defining steps in the MIRT-process (section 3.4.3). The procedural design of the reconnaissance phase is in accordance with the recommendations of the Elverding Committee. The Elverding Committee has urged the development of a broad reconnaissance, resulting in the decision on the preferable alternative. (Commissie Versnelling Besluitvorming Infrastructuur, 2008) In accordance with the theoretical considerations on the scope of plan making in the previous chapter, this stage in the procedural framework of MIRT has a tactical character. The objective is the generation of sustainable solutions within the frame of strategic objectives. In this tactical project phase considerations about the modal split of possible solutions and route determination issues are taken into account (see figure 2.1; especially the middle section of the spectrum). The reconnaissance phase ends with a decision on the preferable alternative, which has a very strong position within the MIRT framework. This decision is very direction defining for the results of the process. The preferable alternative already defines most of the use of space of the final deliverable in an early stage (Van Dantzig, in conversation[12]). This decision provides a broad basis for further development and is , in principle, not disputed anymore in the further MIRT-process (V&W and VROM, 2009). The character of the ex ante evaluations in the reconnaissance phase is very much determined by

[12] An overview of all the persons and organizations interviewed can be found in appendix 10

the consideration of the Elverding Committee. This is, expressed through a strengthening of the following elements in plan making and the assessment of projects:

- Exploration of possible strategies or plans from a broad focus;
- Aim for a broadly supported vision;
- Relatively low level of detail (for example: plan-EIA), nevertheless the final decision is very binding;
- A defining character for the following phases through the development of a frame of reference for the following phases.

Since the introduction of the MIRT-programme and its framework of rules is only a very recent element in the Dutch infrastructure planning, an evaluation of the success of the method and the attention to strategic and tactical plan making is currently taking place. Currently, this evaluation is not available to the public. However, the Ministry of Transport indicates that, in general, it may be concluded that actors involved appreciate the developed mode of operation in the reconnaissance phase (Van Dantzig, in conversation).

The lower opposite of the spectrum of abstractness (see table 2.3 and figure 2.1) is operational evaluation. This form of ex ante evaluation takes place in the plan study phase in the MIRT-programme (see section 3.4.4). The preferable alternative has been chosen in reconnaissance phase. Ex ante evaluation in the plan study phase is focussed on optimizing the further elaboration and realisation of the preferable alternative. The operational character of evaluation is expressed through the following:

- Determination of potential effects of the preferable alternative;
- A narrow focus (one alternative only);
- Highly detailed studies (for example: project-EIA and increased financial certainty);
- Evaluation studies are reactive to what has already been predetermined.

These elements conform to the theoretical description of operational ex ante evaluation studies in chapter two. This similarity appears from the comparison between the description provided in this section and figure 2.1.

3.7 Design of ex ante evaluation procedures within MIRT

The aim for standardization of procedures within the MIRT-programme includes the procedural design of ex ante evaluation instruments. According to Annema et al. (2004), the use of standardized CBA-approaches in ex ante evaluations has improved the quality of the Dutch evaluation practice. CBA-methods have a firm international and scientific foundation. The use of standardized methods is considered to be an improvement in decision-making by

Annema et al. They consider the Dutch OEI-methodology to be fairly complete and solid. However they also indicate that there is still room for improvement, for example on the issue of non-priceable effects. The responsible authorities are working on this and still produce adjustments (Annema et al., 2004).

Besides the above, a couple more things are to be noticed about the use of standardized approaches. The following findings are based on conversations with Johan Visser and Jos Arts. From the perspective of the decision maker the use of a standardized procedural designs and guidelines has the following consequences:

– Ex ante evaluations are more recognizable
– It provides a quality of guarantee
– It improves mutual comparability of projects and evaluation studies

Nevertheless, decision makers in politics do not seem to be convinced about the use of standardized approaches. They often want to discuss individual projects instead of dealing with the inter-project considerations, where the main benefits of the application of standardized approaches is to be found. For research staffs that prepare the evaluations, the advantages are clearer. Standardized approaches simplify and improve manageability of the evaluation carried out.

The OEI/CBA recommendation describes a framework of steps based on the structure for OEI/CBA described before in this chapter. These steps are a general description and may have a different order and influence in specific applications of the method. However, they do provide a clear structure for performing OEI/CBA. The table below gives a comparison between the stages described in the theoretical design of ex ante evaluations (chapter 2) and the procedures of the OEI/CBA-recommendation. It appears that all critical phases except stages five and seven can be retrieved in this framework (see table 3.3).

For the assessment of environmental effects a difference must be made between the plan-EIA for plans and programmes and project-EIA for individual projects. The theoretical origin of the difference between the environtal assessment of plans and programmes and of projects has been explained in section 2.5. The legal base for these differences are the environmental directives of the European Union (box 2.1). Translated into the Dutch planning context this means a difference between plan-EIA and project-EIA (see also 3.4.4 and 3.4.5). The Dutch regulations provide different guidelines for the these procedures. In general the procedural prescriptions for plan-EIAs are less extensive strict than for project-EIA. The legal framework for project-EIAs consists of 10 phases, while for a plan-EIA only 7 procedural steps have been described. It must be noticed that the legal arrangements are about to change

in 2010, as has been described above. However, despite the differences in prescribed steps both environmental assessment framework appear to pay attention to most of the theoretical steps in ex ante evaluation. Table 3.3 provides an overview of the included theoretical stages in the environmental assessment procedures.

	Theoretical stages in ex ante evaluation procedures	OEI/CBA	Plan-EIA	Project-EIA
1.	Screening	Yes	Yes	Yes
2.	Scoping	Yes	Yes (voluntary involvement of NCEA)	Yes (NCEA)
3.	Generation of alternatives	Yes	Yes	Yes (including AMFE)
4.	Identification and analysis of effects	Yes	Yes	Yes
5.	Mitigating and compensating measures	No	Yes	Yes
6.	Evaluation of alternatives	Yes	Yes	Yes
7.	Presentation	No	Yes	Yes

Table 3.3 Stages in ex ante evaluation, theory and within MIRT (OEI/CBA, Plan-EIA and Project-EIA) (Based on Eijgenraam, 2000; VROM, 2006; InfoMil, 2009)

The OEI/CBA recommendation does not take explicit note of mitigating and compensating measures in ex ante evaluations. Nevertheless, mitigating and compensating measures for environmental issues are taken into account as a part of operational EIA studies. Furthermore, the OEI/CBA recommendation does not give an explicit description of presentation standards. However, the framework of rules of MIRT does provide some guidance for the publication of evaluation results in the sense that the included information profiles for every decision the required information required to enable decision-makers to take objective decisions. However, there is no clear description on the style and way this information should presented. Taking into account the findings in this section it can be concluded that the ex ante evaluation instruments in the MIRT framework are based on theoretically sound models.

3.8 Concluding remarks

This chapter has intended to extract preconditions for solid ex ante evaluation of infrastructure projects within a programmatic approach from the Dutch MIRT-programme. The development of infrastructure in the MIRT-programme, which takes place in close harmony with other spatial developments, is organized in a coherent and coordinated

manner. Ex ante evaluation that takes place with the objective to support and improve decision-making. This improves the quality of the final deliverable.

The ex ante evaluation methodology applied in the MIRT-programme forms a coherent unity. The evaluation instruments have been interwoven with the general planning process and aim to make a complete assessment and prosperous procedures. An overview of the interwoven elements within the MIRT-framework as well as the position of ex ante evaluation instruments can be found in appendix 3. To ensure this prosperity, the methodology has a strong fundament in a broad reconnaissance phase, in which the most essential decisions are taken. The broad base provided by the reconnaissance, ensures the smooth advancement of the following stages of the process.

The assessment of the ex ante evaluation methodology from the three theoretical perspectives has provided possibilities for the improvement of ex ante evaluation methodologies in other planning systems. However, it must be noticed that the current MIRT-approach is rather young and practical experience is not always as strong as may be required. The diagram below provides an overview of elements that could be innovative to other planning systems.

Dimension	Elements
1 Policy-making perspective	The MIRT-programme promotes an open plan-making process. Nevertheless, all considered perspectives have role: - Technical-rational: Despite the open approach, the technical dimension of ex ante evaluation still has a role. Ex ante evaluation requires a certain degree of specific expertise. - Communicative: Relevant stakeholders are involved in the process as early as possible. In MIRT communication is more than informing the public, it is consultation and participation. - Institutional: An interactive process requires 'custom-made', situation-specific process designs. Societal and cultural structures must be considered in the development of interaction procedures.
2 Scope	The aim behind the planning procedures as they have been designed for the MIRT-programme is to provide a solid strategic and tactical fundament for the operational development of projects. This has to be achieved through strategic preparation of the MIRT-procedures and extensive tactical reconnaissance. Elementary choices are made in the first MIRT-phase, which has a broad orientation. The final decision of

	the reconnaissance has a tactical character and provides a basis for the rest of the process and is not disputed anymore. The attention for the reconnaissance phase set an extensive frame of reference, which improves the process in later phases. Strategic and tactical choices have been anchored, later stages can concentrate on operational issues. It appears that strategic, tactical and operational planning and ex ante evaluation has been positioned in such a manner that a balanced situation has been generated. Top-down and bottom-up interests are aligned through specific attention for public-public cooperation.
3 Design of procedures	The use of standardized ex ante evaluation methods mainly provides benefits. It improves the opportunities for comparison of alternatives and decision-making. The leads to a better final deliverable in the end. When the procedural design of ex ante evaluation studies within the MIRT planning framework is considered from theoretical perspective it may be concluded that both social-economic and environmental assessments are based on fairly complete procedures. The design of ex ante evaluation procedures therefore makes a solid impression.

Table 3.4 Strong elements of the MIRT-methodology, from three theoretical dimensions

Chapter 4

Ex ante evaluation in TEN-T context

4.1 Introduction

Chapter 3 assessed the ex ante evaluation procedures of the Dutch MIRT-programme following the three dimensional framework. It appeared that the ex ante evaluation of infrastructure projects within the MIRT-programme is characterised by early involvement of stakeholders, emphasis on strategic planning and standardization of procedures. Although experiences with the described methodology are only very recent, they appear to be satisfactory. The rest of this thesis will aim to find out whether the evaluation methodology of the MIRT-programme or elements of it can provide opportunities to improve the ex ante evaluation methodology applied by the European Union on possible TEN-T projects.

The objective of this chapter is to establish the way ex ante evaluation of proposed infrastructure projects takes place within the TEN-T programme, with specific focus on points that may require improvement. Following the same approach as used in the assessment of the MIRT-programme in the previous chapter, TEN-t will be assessed on the three theoretical dimensions of ex ante evaluation described in chapter 2.

The main questions of this chapter are: *How are proposed infrastructure projects currently being assessed and selected within the TEN-T programme and what are strengths and weaknesses in this approach?* To be able to make a sound comparison between TEN-T and MIRT the structure of this chapter is largely comparable to the structure of the previous chapter. Like chapter three, this chapter commences with describing the backgrounds to the TEN-T programme to set the frame in which TEN-T policy is being developed. Paragraph 4.2 contains a description of relevant developments in European transport policy and the objectives of the TEN-T programme. This paragraph also concentrates on the role the EU plays in the development of infrastructure. This will be followed by a paragraph describing the outline of the TEN-T programme, with specific attention for ex ante evaluation of infrastructure projects (paragraph 4.3). After this, the ex ante evaluation methodology of TEN-T will be assessed using the three dimensional framework; from the perspective of policy-making in paragraph 4.4; the scope of the evaluations in paragraph 4.5 and finally the design of the ex ante evaluation procedures in paragraph 4.6. The chapter will be concluded with defining the position of ex ante evaluations within TEN-T on the three-dimensional spectrum. In addition to this chapter, the following chapter will consider two TEN-T projects

in two case studies. The findings about TEN-T in this chapter and in chapter five will be compared with the findings around the MIRT programme in chapter six.

4.2 European Transport Policy

The objective of this section is to describe the administrative context in which TEN-T is being developed. An important arrangement in this administrative context is the principle of subsidiarity, which prescribes the administrative balance between the EU and the national governments of the EU members. The principle of subsidiarity is laid down in the Treaty of Maastricht (Commission of European Communities, 1992). The principle, defined in a dualistic manner by Duff (1996, p. 26-29), implies that decisions should be taken as closely to the people that are affected, in this case the Member States' governments, and that the EU should only take action, on issues where it is not exclusively competent, when objectives 'cannot be achieved sufficiently by the Member States'. On the issue of the Transeuropean Networks the European Union and the Member States have a shared responsibility (Buitenlandse Zaken, 2008). The consequences for TEN-T are that planning of infrastructure is left to the Member States as a national competence. At the European level no detailed infrastructure plans are being developed. On the other hand the realisation of an integrated, multimodal European transport network is considered to be a community task and is carried out by the EU. However, the EU can only play a stimulating and steering role, for example by providing additional funds. The EU does not plan and realise infrastructure projects by itself.

4.2.1 Common Transport Policy

In other policy sectors (e.g. agriculture) the EU has been successful to develop communal policies. Also in the transport sector it has, since an action plan in 1962 (Treaty of Rome) been the intention to coordinate infrastructure investments. However, despite the presence of ambitions it has taken until the 1980s before the EU started developing a comprehensive common transport policy (CTP). The main reason for the realisation of this old ambition was the aim for a single European market. In 1992 the objectives of the transport policy were published in a white paper, containing three main objectives:

1. Opening of the single market;
2. Development of a comprehensive transport system;
3. Meeting environmental standards.

However, despite the now present ambitions the development of comprehensive transport infrastructure remained difficult. Especially the mutual coordination between Member States appeared to be problematic. In 2001 a new white paper was published, with the objective to tackle problems that had not been addressed by the CTP thus far. Additional objectives were:

1. Taking on the decline of railroads;

2. Challenging environmental problems (meeting Kyoto standards);
3. Challenging congestions problems;
4. Addressing safety issues.

A further challenge in the development of comprehensive transport facilities in Europe is the introduction of new members states, particularly in eastern Europe. Transport infrastructure appears to be far from the desired standards in the new Member States and upgrading and adaptation of rules are required. Additional funds have been made available for this (Oudenaren, 2005: p. 160-163).

4.2.2 Transeuropean Networks

The evolution of TEN-T has taken place in a number of stages. In 1992 the development of the Transeuropean Networks on transport, energy and telecommunications commenced with the objective to support the policy objectives of the CTP. The Maastricht Treaty provided the EU with 'the powers and responsibility to promote the interconnection and interoperability of national networks in the context of the single European market' (Oudenaren, 2005: p. 163). Transeuropean networks are considered to be a substantial factor in the completion of the single market programme. This has been 'hampered by the fact that transport systems, as well as energy and telecommunication infrastructures, were designed to serve separate countries rather than to facilitate travel between them'. Transeuropean networks were designed to stimulate integration of industries and markets, to open the peripheral regions and to reduce traffic congestion and pollution through the promotion of sustainable mobility (EVP, 1992: p. 9; McGiffen, 2005: p. 145). The objectives of TEN-T have been laid down in the *Community guidelines for the development of the trans-European transport network* (EC, 1996: Decision number 1692/96/EC). This act states the following community guidelines for the development of TEN-T. The objectives are to:

- Ensure the sustainable mobility of persons and goods;
- Offer users high-quality infrastructure;
- Include all modes of transport;
- Allow the optimal use of existing capacities;
- Be interoperable in all its components;
- Be economically viable;
- Cover the whole territory of the Community;
- Allow for its extension to the Member States of the European Free Trade Association (EFTA), the countries of Central and Eastern Europe and the Mediterranean countries.

Combined with the Common Transport Policy, these guidelines form the strategic backgrounds of a Transeuropean Transport Network. Besides the above objectives, the guidelines also contain maps of a desired transport network. The combination of the guidelines and the maps can be considered as 'a first attempt to describe the vision of how an integrated network in the unions territory should be developed' (Dionelis et al. in Giaoutzi and Nijkamp, 2009: p. 152). The first projects on the map had the objective of integration of national transport networks to ensure the intra union mobility. The Member States at the time often already had densely developed transport networks. These networks were to be linked up through the removal of barriers. This changed with the enlargement of the EU towards eastern Europe in 2004 and 2007, which lacked the densely developed transport networks. These countries were to be integrated into TEN-T through the development of transport corridors on short and medium term, followed by the network forming on the longer term. The development of these corridors took place at the hands of strategic inventories, such as the *Pan-European Transport Corridors* (1989) and the *Transport Infrastructure Needs Assessment* (TINA, 1999), commissioned by the European Union. TINA 'served as the main framework of reference for the extension of TEN-T' towards the new eastern European Member States (Dionelis et al. and Stratigea et al. in Giaoutzi and Nijkamp).

In 1996 the TEN-T priority projects were introduced. The initial focus of these projects (in 1996 there were 14 priority projects) is on the improvement of passenger and freight rail infrastructure. In the contemporary policy, other types of transport infrastructure, including road infrastructure, also come into consideration. In 2003 the list of priority projects was expanded to 30 projects, as a result of the publication of the reporting of a high commission on the future of TEN-T (Van Miert report). The intention of this report was to improve the realisation of TEN-T projects by setting new guidelines. It called for the speeding up of the realisation of the priority projects, which contribute the most to the TEN-T policy objectives. Furthermore, the group also urged for the release of increased financial resources from the EU funds and for more possibilities for public private partnerships. The EU contribution has indeed been increased, however not yet to the desired level. Finally, the group urged for improved coordination methods by the EU, including the harmonization of evaluation methods and other procedures (European Commission, 2003; Vogelaar, 2005). Together with the expansion towards the east these changes can be considered as the start of a new phase in the development of TEN-T.

The priority projects are considered to be crucial in the achievement of the policy objectives. However, despite the Van Miert report, the development of most priority projects is still

drastically lagging behind schedule. Particularly financing these projects remains a problem, as well as getting the required environmental approvals and solving issues at border points between individual Member States. (Oudenaren, 2005: p. 163-165). Recently, the priority networks have been expanded towards the new Member States in eastern Europe.[13]

The development of TEN-T is not undisputed. McGiffen (2005: p. 145) identifies the following main points of criticism:

- Development of TEN-T is too expensive;
- Too much is being spend on the development of roads;
- The majority of investments in rail infrastructure are in high speed trains. These are inaccessible for ordinary people, and thus provide them too little benefit;
- Too little has been done to provide reasoned economic proof of the benefits.

These points of criticism have largely been subscribed by the commission's Green Paper on the future development of TEN-T.

4.2.3 Administrative arrangements

This section intends to make a brief analysis of the EU organizational framework to describe the structure in which TEN-T is being developed. The objective is to identify the responsibilities for development and evaluation of TEN-T projects and network. The TEN-T policy is being developed by the Directorate General Transport and Energy (DG TREN, Directorate B), under supervision of the European Commission. Decisions about projects, for this thesis in particular financing decisions, in the TEN-T programme are also taken by DG TREN, and controlled by the European Parliament. Besides DG TREN, there is another EU institution involved in the TEN-T programme. The Trans-European Executive Agency (TEN-T EA) is responsible for the efficient and effective technical and financial management of the programme and its projects. It operates under the supervision of DG TREN The table below gives an overview of distribution of tasks between DG TREN and TEN-T EA (TEN-T EA, 2009b).

[13] For an overview of the current priority projects, see appendix 1

European Commission (DG TREN): defines the policy	TEN-T Executive Agency: turns the policy into action
Makes political decisions regarding the TEN-T programme	Implements the TEN-T programme on behalf of the European Commission and under its responsibility
Defines strategy, objectives and priority areas of action	Efficiently manages entire the project lifecycle, including:
Takes the final financing decisions	- Organising calls and evaluations
Monitors and supervises the Executive Agency	- Giving support to Member States
	Prepares financing decisions
	Provides key feedback to the European Commission

Table 4.1 DG TREN and TEN-T EA tasks (TEN-T EA, 2009b)

The implication for the ex ante evaluation of TEN-T projects is that the evaluation process is divided between DG TREN and TEN-T EA. In essence evaluation of individual projects is carried out by the executive agency. Selection of projects for funding is handled by DG TREN. The ex ante evaluation procedures are described in the following sections.

4.3 Ex ante evaluation of TEN-T projects

Before the assessment of the ex ante evaluation methodology of TEN-T commences, it is important that there is clear view on the planning framework within which the TEN-T network is being developed. This framework is characterised by the application of the principle of subsidiarity as described in the previous section. Despite the aim for a comprehensive European network, including a priority network, the planning and realisation of infrastructure projects remains a national issue within the European Union. In essence, TEN-T is a network compiled of different national projects. From an European perspective, the combination and coordinated realisation of these projects should form a network supporting the TEN-T policy objectives.

4.3.1 The role of the European Union

The role of the European Union in the development of the TEN-T programme and the individual projects in the programme is primarily a facilitating and prioritising one, through the collaboration with national governments and the provision of funds. The EU can support Member States in the development of TEN-T infrastructure by awarding grants from the TEN-T budget, grants from the Cohesion Fund budget (in eligible countries only), grants

from the European Regional Development Fund (ERDF) and loans and guarantees from the European Investment Bank (EIB). Nevertheless, the majority of the funds still has to be raised by the individual Member States. This can also be noticed from the breakdown of the financial structure of TEN-T (table 4.1). The consequence of this system is that the main core of decision-making and ex ante evaluation lies at the national level. The realisation of TEN-T is largely dependent on bottom-up initiatives. The EU plays a supporting and stimulating role in the development of TEN-T towards the EU objectives.

Transeuropean Transport Network	**2007-2013 Comprehensive network**		**2007-2013 Priority projects**	
Cost (€ billion)	**390**	**100%**	**154**	**100%**
Total community contribution (Grants, loans and guarantees)	105	27%	47.4	30.8%
Other resources (National)	285	73%	106.6	69.2%

Table 4.2 Financial Breakdown of the comprehensive network and priority projects (EC, 2009c)[14]

The distribution of funds takes place in a yearly repeated procedure in which Member States can apply for funding. To steer the yearly applications the European Union uses different funding schemes. The Member States wishing to receive a European contribution for their project have to apply for the right funding programme (North, 2009). Table 4.3 gives an insight into the available funding schemes in 2009. A noticeable detail is the introduction of the EERP in response to the present financial crisis.

Funding scheme	**Description**
Multi Annual Programme (MAWP: 2007-2013)	This programme "aims to further enhance the effectiveness and visibility of Community financing of the highest priorities of the TEN-T network. Calls are launched in specific fields each year." In 2009 this programme aimed at: - Motorways of the Sea (MoS) (TEN-T Priority Project n°215) Maximum amount available for the selected proposals: **€ 30 million** - Intelligent Transport Systems for Roads (ITS Roads) Maximum amount available for the selected proposals: **€ 100 million**

[14] For a complete financial breakdown, see appendix 5

	- European Rail Traffic Management Systems (ERTMS) Maximum amount available for the selected proposals: **€ 240 million**
Annual Work Programme (AWP)	This programme "intends to complement the efforts developed in the MAWP and does not support actions already supported there under. Given its annual nature, it has a high degree of flexibility to meet new priorities of the projects of common interest. The AWP includes a dedicated budget for the Loan Guarantee Instrument, for which the Community's contribution is managed by the European Investment Bank (EIB)". In 2009 **€ 140 million** is available for this programme.
European Economic Recovery Programme (EERP)	"An ad hoc work programme has been adopted in 2009 in response to the financial crisis: the European Economic Recovery Plan Work Programme (EERP). A call for proposals under this programme brings forward **€ 500 million** of existing funds in order to support works which can start in 2009 or, at the latest, in 2010 and be largely implemented over this two-year period, or which have already started but can be accelerated over 2009 and 2010."

Table 4.3 Funding Schemes 2009 (TEN-T EA, 2009)

The division of responsibilities between the central EU administration and the individual administrations of the Member States also has consequences for the practice of ex ante evaluation of infrastructure projects. In accordance with the described situation the planning of infrastructure takes places in a bottom-up setting, from the perspective of individual Member States. The main core of planning and ex ante project evaluation is on the national level. The European Union can be considered as a supervisor, testing the proposals against its own objectives.

4.3.2 Ex ante evaluation in Member States

The ex ante evaluation systems of the EU members differ strongly as consequence of varying backgrounds, such as national guidelines, regulatory contexts, planning traditions and methodology. This is one of the conclusions of an extensive study on ex ante evaluation methodologies in the European Union. This study (HEATCO; Harmonised European Approaches for Transport Costing and Project Assessment, see also box 4.1) was performed under authority of the EU in the period 2004-2006. The objective was to develop harmonised guidelines for project assessment on EU-level. The result was an extensive proposal for harmonisation of the project appraisal methods among EU-members. This idea for

harmonisation of EU members' evaluation methodologies is comparable with the unification of evaluation processes and standards that has been introduced in the Netherlands (see chapter 3 on the MIRT framework of rules and the OEI/CBA recommendation). Despite the promising prospect, this proposal has never been implemented and the ex ante evaluation methodologies remain very diversified among EU Member States. In 2009, in response to the EU Green Paper, the Dutch government called once more for a harmonisation of ex ante evaluation systems (V&W, 2009).

Box 4.1: HEATCO (2004-2006)

The reason for the HEATCO (Harmonised European Approaches for Transport Costing and Project Assessment) studies that have been performed in the period 2004-2006 can be found in the common objectives of the European Union. As stated before in this thesis the European Union considers the development of high quality transportation infrastructure crucial in support to the Union's social-economic and environmental objectives. According to the findings of HEATCO this requires "an unambiguous and harmonised framework for socio-economic evaluation of transport policies" (HEATCO, 2007) . The specific aim of the studies was to develop guidelines to use in the planning process for the Transeuropean Transport Networks, through the enhancement of cross-border cooperation by means of harmonized ex ante evaluation standards.

As a first step, the current project assessment practice in the EU member states was reviewed and analysed. This inventarisation has proved to be useful in the sense that it provides a good overview of the ex ante evaluation practices in the individual Member States. In the study 11 categories of main effects were identified and included in the examinations. An overview can be found in the table below (HEATCO, 2005)

Effects	
- Construction costs	- Benefits to goods traffic
- Disruption from construction	- Safety
- System operating cost and maintenance	- Noise
- Passenger transport time savings	- Air pollution - local/regional
- User charges and revenues	- Climate change
- Vehicle operating costs	

Table 4.4 Categories of main effects included in the inventarisation of assessment methodologies (HEATCO, 2005)

The figure below provides an overview of the number of main effects that are incorporated in ex ante evaluation instruments, such as CBA, MCA and others, in the European countries. According to the HEATCO report, a striking geographical division can be noticed. North-western European countries generally have a more regulated framework for ex ante evaluation, while south-eastern European countries have a less regulated evaluation practice.

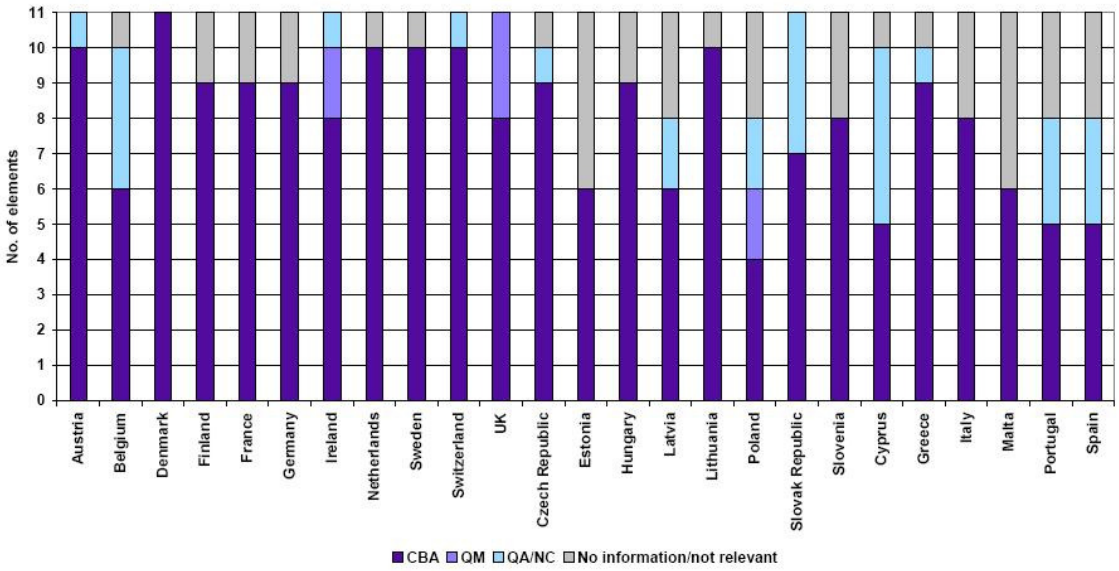

Figure 4.1 Number of different elements used in appraisal of road infrastructure projects by country (HEATCO, 2005)

The development of the desired harmonized approach "was organised in a cycle process, involving representatives from member countries from the beginning of guideline development, with discussions and revision of different guideline versions." Congresses and workshops were organized to present and discuss the proposed guidelines. The final deliverable of the studies was an extensive proposal for the harmonization of evaluation standards. The studies had confirmed the need for harmonization. However, the implementation of the proposed guidelines has not yet taken place (V&W, 2009). More information on the HEATCO studies can be found in appendix 4.

4.3.3 EU ex ante evaluation systems

Besides the role of ex ante evaluation and decision-making on national level, the European level still has a substantial stake in the realisation of TEN-T. Without the financial support and inspiring role of the EU many TEN-T projects would not be realised. The European

Union is responsible for approximately 30% (available from several sources, such as grants and loans) of the total funds required for TEN-T development (see table 4.2). It must be noticed that this figure is a European average and that there are vast differences in the absolute and relative amounts received by the individual Member States. More information on the balance of distributed funds between the Member States can be found in section 5.2. These EU investments in TEN-T play an important part in stimulating both the preparation and realisation phases of projects. The significance of the role of the EU in combination with the dimensions of the funds involved imply that also at EU-level there is a need for sound ex ante evaluation systems.

The European Union has delegated the evaluation of policy to the responsible individual Directorates-General. This means that the responsibility for evaluation of (proposed) actions is laid down at the individual Directorates-General. Directorates-General are supporting departments for the European Commission, each responsible for a specific policy area. Each Directorate-General has to evaluate its programmes and projects of 'significant spending' following a structural framework laid down in the Commission's evaluation standards. This means that each DG has to develop its own evaluation functions. The responsible Directorate-General for infrastructure and TEN-T policy is Energy and Transport, which has delegated a part of its operational responsibilities around TEN-T to the executive agency (SEC, 2000; EC, 2004).

According to the European Commission, the purpose of evaluation is providing a "judgement of interventions according to their results, impacts and needs they aim to satisfy" which should result in a useful assessment of the proposed project or programme. This assessment has the following purpose (EC, 2004):

- To contribute to the design of interventions, including providing input for setting political priorities
- To assist in an efficient allocation of resources
- To improve the quality of the intervention
- To report on the achievements of the intervention

From this definition and other documentation (SEC, 2000) about objective and purpose of evaluation in the EU, it can be concluded that evaluation has the objective to improve the quality of project proposals and improve the quality of decision-making, through providing support. This is in accordance with the theoretical definitions of ex ante evaluation provided in chapter two (see section 2.2)

The evaluation system of the European Union has been refined in a reform process, starting in the year 2000. The reform process has led to a renewed set of basic requirements that provide converging guidance to all evaluations performed within the EU. These guidelines apply to all EU policy areas. They are laid down and formalized in a set of three regulatory documents:

1. The Financial Regulation (Council regulation 1605/2002, articles 27, 28, 33)
2. The Implementing Rules of the Financial Regulation (Commission Regulation 2342/2002, art 21)
3. The Communication on Evaluation (SEC (2007) 213 and annexes)

The financial regulation and its implementing rules apply to all institutions and set an inter-institutional framework for the financial operation of the EU. The commission has further defined the mode of operation of the evaluation system in the communication documents. The communications reiterate "the Commission's commitment towards evaluation and provide new directions with a view to ensuring that evaluations are of high quality, contribute to better regulation and are better integrated in the Strategic Planning and Programming Cycle." (EC, 2004; SEC, 2007)

The environmental consequences of possible TEN-T infrastructure are also taken into account in the evaluation procedures. This is expressed in the guidelines for the development of Transeuropean Transport Networks, article 15. This article refers to the environmental directives of the European Union that have been described in chapter 2, box 2.1 of this thesis.

> *"Environmental assessment pursuant to Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment will in the future be carried out for all plans and programmes leading to projects of common interest. Funding for transport infrastructure should also be conditional on compliance with the provisions of Community environmental legislation, in particular Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment and Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds and Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora." (European Commission, 2008)*

It appears that the decentralised policy evaluation system of the European Union takes into account economic principles as well as environmental considerations. The following section describes the application of this system within the TEN-T procedures for evaluation and selection.

4.3.4 EU ex ante evaluation procedures for TEN-T

The ex ante evaluation of possible TEN-T projects takes place on the basis of applications for funding. Every year Member States can apply for TEN-T funding for specific projects. The proposals have to be submitted to EU by a certain deadline. This is followed by an evaluation and selection procedure and about six months later the Commission announces whether or not a project will receive funding from the EU. This procedure repeats itself on a yearly basis.[15] The difference with the Dutch situation around the MIRT-programme is that infrastructure initiatives in the EU originate in a bottom up manner, from the perspective of the individual Member States. In the Netherlands infrastructure planning proposals originate from the visionary and combined actions resulting from top-down and bottom-up interests.

The assessment of the applied projects by the EU takes place on the basis of the information provided in the applications for each project. This means that ex ante evaluation procedures such as environmental impact analysis and cost benefit analysis are carried out by the individual project organization and are then presented to the EU for assessment. The final decision about funding is based on a dual assessment framework, including external and internal assessment, taking into account the information provided by the applications. The assessment of the content of the projects and programmes applied for funding is carried out in an equal manner against the following award criteria that include both strategic and operational considerations (TEN-T EA, 2009; North, 2009; Sors, in interview, see also appendix 10).

Award Criteria	Description
Relevance	"Relevance refers to the contribution of the Action to the TEN-T priorities (as laid out in the TEN-T Guidelines) and the objectives described in the call for proposals text, as well as to the macro socio-economic benefits at EU level and the need for TEN-T support." The guidelines include economic, environmental and sustainability aspects (see also section 4.2.2).
Maturity	"Maturity refers to the status of preparation of the activities, in particular the capacity to implement the Action in accordance with the foreseen time plan and technical specifications. In other words: is the project ready to go?"
Impact	"Potential impact refers to the anticipated socio-economic effects of the Action (at the micro level) as well as the impact on the environment."

[15] A schematic overview of the decision-making procedure can be found in Appendix 6

Quality	"Quality of the Action refers to its completeness and clarity, in terms of the description of the planned activities, the soundness of the project management process and the coherence between its objectives and planned resources / activities."

Table 4.5 Award criteria (TEN-T EA, 2009)

Project proposals that have been applied for funding, are evaluated by means of a five-stage procedure against the award criteria. According to the EU this procedures is based on two principles: equal treatment and transparency (TEN-T EA, 2009).

Step 1: Assessment of compliance with eligibility and selection criteria, and Community laws (TEN-T EA)
Step 2: Assessment by external experts (TEN-T EA)
Step 3: Internal Evaluation Panel (TEN-T EA, DG TREN and other relevant Directorates General)
Step 4: Evaluation Committee (DG TREN)
Step 5: Adoption by Programme Committee and European Parliament scrutiny (Financial Assistance Committee and European Parliament)

Step 1: Assessment of compliance with eligibility and selection criteria, and Community laws

The first step in the ex ante evaluation procedure is the performance of checks to establish whether the proposal is eligible for receiving TEN-T funding. First, the proposals have to satisfy certain criteria, must be submitted before the deadline and must be complete. Further, proposals have to comply to the formal requirements in table 4.4.

Eligibility criteria	**Selection criteria**
- Projects must be submitted by one or more Member States, or official representatives - Projects must be of common interest - Non-cumulative with or other EU funding - Projects must be in compliance with relevant community law	- Applicators must demonstrate their capacity to complete the intended action: - Financial capacity - Technical capacity

Table 4.6 Eligibility and selection criteria (TEN-T EA, 2009)

Step 2: Assessment by external experts

Proposals that have passed the eligibility and selection criteria proceed to the next step in the ex ante evaluation procedures. External experts, professionals from outside the EU administrative organization, perform the first evaluation of the content of the project. The external experts add substantial knowledge to the evaluation procedure. They are selected from a database provided by DG Research. At least three external experts independently assess the projects or programmes on the four award criteria from table 4.5, followed by a consensus meeting where the objective is to reach a joint recommendation about funding or not. The purpose of the external evaluators is to guarantee independence of the process and to bring in external expertise. They are informed in advance on TEN-T objectives, guidelines, etc. The external experts assess the projects on the following award criteria and they mark the proposal on each criterion on a scale from 0 to 5. (TEN-T EA, 2009; Sors, interview)

Step 3: Internal Evaluation Panel

The external evaluations are followed by an internal evaluation procedure, which is a combined effort of TEN-T EA and DG TREN in cooperation with other relevant Directorates General. The internal panel again takes all remaining projects into consideration, together with the reports of the external evaluators. The objective of the internal evaluation is to assess the available budget for the project, strategic objectives and policy relevance, as well as the overall balance of the considered projects. Other Directorates General are involved to advice about the implications of projects from specific perspectives. Finally, at the end of this step, after external and internal evaluation of the projects a list of proposals recommended for funding is prepared. This list is submitted to the evaluation committee (TEN-T EA, 2009).

Step 4: Evaluation Committee

In the following step the prepared list is assessed, and if necessary modified, by the DG TREN directors and finally approved by the DG TREN Director General. When DG TREN has approved the list, the DG starts an inter-service consultation procedure. In this procedure the objective is to receive further information on the proposed projects and to verify compatibility with other EU policies. In particular DG Environment and DG Regional Development are being consulted, to gain information on environmental and regional economic effects (TEN-T EA, 2009).

Step 5: Adoption by Programme Committee and European Parliament scrutiny

The final step in the ex ante evaluation and selection procedures carried out by the EU is in the hands of the Financial Assistance Committee, consisting of all individual Member States,

and the European Parliament. The institutions have the final decision-making authority. The parliament has a 30-day 'right of scrutiny' and can oppose the list of projects on certain conditions. Finally, the evaluation and selection procedures are concluded with a framework decision. This decision provides a list with all the projects proposals that have been selected for funding and the corresponding amount of funding awarded. On the basis of this decision the individual project organizations are invited to engage in conversations about further details (TEN-T EA, 2009).

4.4 Ex ante evaluation in TEN-T from policy-making perspective

When considered from a policy-making perspective, the ex ante evaluation methods for the planning of the TEN-T principally appear to have a technical orientation. This is expressed by the inward oriented ex ante evaluation procedures of the EU. In essence, the evaluation of proposed projects takes place by EU staff and expertise. The only moment that external expertise is brought into the project is when external evaluators are employed to conduct evaluation and express their views. The objective is to bring external expertise into the evaluation process. However, this should not be seen as an attempt to engage in more communicative planning directions. The only thing that is asked from the external evaluators to apply their expertise to analyse the quality of the proposals and to ensure that the proposals best meet the criteria described by EU guidelines.

The communicative aspects of the ex ante evaluation procedures carried out by the EU are mainly an internal affair. In step three and four, other relevant EU departments are being consulted about specific issues, such as regulations and a check for double financing. In the case of TEN-T, in particular DG Environment and the DG for Regional Policy play a relevant role. Besides the involvement of external experts there are no provisions for extensive external communication, such as communication or extensive feedback with the specific context of the considered funding application. Consequently, to the inward directed orientation of the ex ante evaluation procedures, the institutional context of the project application is left outside the considerations.

On the level of individual projects there is a different situation. Consequently to the central - decentral relationships between the EU and the Member States, the operational part of ex ante evaluation for individual projects is the responsibility of the individual Member States. The applying administrations are responsible for the individual evaluation studies, such as the application of Strategic Environmental Assessment and Environmental Impact Assessment on the level of individual projects. The application of these assessment is guided

by the EU directives that have been described in section 4.3.2. Besides the guidance of the assessment procedures, these directives also state the obligation for involvement of public and relevant administrative parties into the process. This means that the development of participatory strategies and consultation of relevant stakeholders is left to the lower administrations. It could be argued that this is in accordance with the principle of subsidiarity.

4.5 Scope of ex ante evaluation within TEN-T

The backgrounds of the EU development system for TEN-T influence the scope of ex ante evaluation studies for the TEN-T programme. The duality in the situation between the central EU administration and the administrations of the individual Member States leads to the following division. The strategic backgrounds of the TEN-T policy are derived from the overall policy aims of the EU, as has been described in section 4.2. The Transeuropean Transport Networks have been developed as an instrument to support the achievement of the Common Transport Policy. The final objective is to develop a comprehensive, multi modal transport network in the European Union. Further development goals for this network have been assessed and established by a collection of policy documents, such as the White Paper of 2001 and the report of the Van Miert-group in 2003. These guidelines for development of TEN-T have been laid down in community legislation as guidelines for the development of a Trans European Transport Network (EC, 1996). Taking into account the relationship between the EU administration and the Member States, the visions and strategic objectives are the result of top-down generation.

Due to the prevailing system of subsidiarity in the EU, the operational planning of infrastructure projects is left to the responsibility of the individual Member States, in interaction with the EU guidelines and objectives. As described the EU cannot decide for the Member States which project to realize, since the realisation of infrastructure projects remains a national task. The planning on tactical planning level and the tactical considerations around the development of the network therefore appear to be primarily left to the responsibility of the individual Member States, with the European Union setting the strategic guidelines.

The operational implementation of the desired infrastructure projects is up to the responsibility of the individual Member States. Operational planning and evaluation take place within the planning systems of the individual Member States. The initiation in this planning phase is bottom-up oriented. Ex ante evaluation studies are performed by the

individual Member States. The EU assesses these studies against the overall TEN-T objectives that serve as a frame of reference for the development of TEN-T.

The scope or level of abstractness of specific ex ante evaluation studies for individual projects is mainly an issue of the individual Member States. As described, the primary concern of the EU evaluation system is the assessment of the evaluation studies carried out and delivered by the responsible administrations. Nevertheless, the guiding framework for the definition of the appropriate scope for ex ante evaluations is defined in the EU regulations, especially on environmental issues. The EU makes a difference between the assessment of plans and programmes on the one hand and the assessment of projects on the other hand, which can be seen as tactical choices. Strategic evaluation has to be performed on environmental issues for the development of plans and programmes. A SEA has the largest influence on primary choices, and may therefore influence decisions on topics such as need, modal choices and location of transport infrastructure projects. On proposed projects an EIA, with a more operational character, is often required. “EIA is associated with project decisions, usually the final decisions before construction work is started. These are detailed decisions, notably concerned with the detailed location and design of a project and with the adoption of measures to mitigate, rather than prevent, environmental impacts.” (BEACON, 2005)

On the level of individual projects the European has provided clear guidance on strategic and operational project evaluation to Member States. From the perspective of theory a healthy distinction is made between strategic and operational assessment. It appears that the development of TEN-T is primarily hindered by a mismatch between the strategic development objectives set by the European Union and the operational planning of individual projects by the individual Member States. This leads to friction between the top-down vision of the European Union and the bottom-up interests of the individual Member States in the vertical planning chain: strategic-tactical-operational. Figure 4.2 illustrates the describes friction. The discussion in chapter six will further elaborate on the consequences of the described friction.

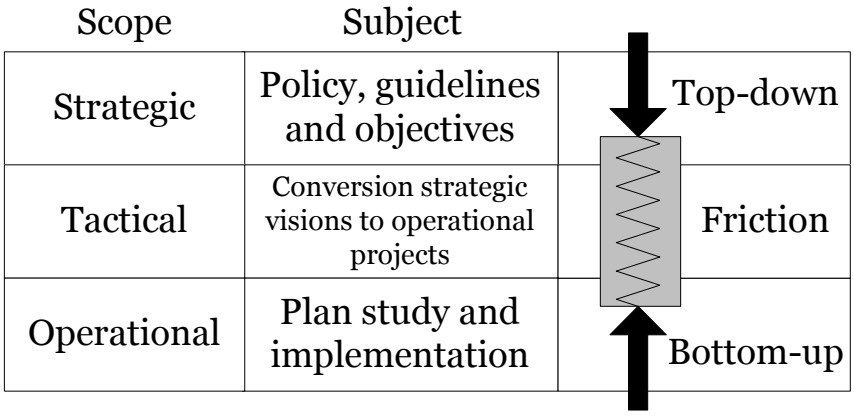

Figure 4.2 Scope of evaluation studies in different phases

4.6 Design of ex ante evaluation procedures within TEN-T

This paragraph will make a difference between the design of the assessment procedure on the proposals carried out by the EU and the ex ante evaluation studies done by the individual member states.

As described earlier in this chapter the funding decision of the applied projects is based on an assessment carried out under supervision of the TEN-T executive agency and DG TREN. In paragraph 4.3.3 on the ex ante evaluation methodology as employed by the EU consists of five procedural steps. The purpose of this procedure and the sequential steps is to guarantee equal treatment and transparency of the decision-making about the distribution of the available funds. These objectives are expressed through the thorough construction of the evaluation and assessment procedures. The external experts, who are responsible for the first step in the evaluation procedure, are expected to operate in an independent and impartial manner. This increases the objectivity of the process and ensures that the interests of individual projects and the objectives of the TEN-T programme and the EU are weighed carefully and solid (TEN-T EA, 2009). In essence the external evaluation is a critical assessment of the applications on the award criteria: relevance, maturity, impact and quality.

After the external experts have given their verdict on the individual applications, the EU commences with the internal evaluation of the proposed projects. First the TEN-T executive agency and secondly DG TREN assess the applications, taking into account the advices of the external evaluators. The assessments of the projects by the internal evaluation panel and the evaluation committee have an inward oriented nature. Other relevant Directorates General are consulted to prevent undesirabilties, such as disagreeing policy interests and double

financing. Finally, the funding decisions are presented to the Financial Assistance Committee and the European parliament, to ensure political support for the decisions.

The combination of external and internal expertise used in the assessment procedure makes it a solid unity that aiming for objectivity and transparency. Nevertheless, the assessments are based on the information provided by the individual project applications. These applications contain the results of relevant ex ante evaluations on projects level carried out under supervision of the applicators. On project level the environmental interests are being safeguarded by environmental assessments ordered by the TEN-T guidelines. The directions for the design of environmental assessments are provided by the SEA-directive (for plans and programmes) and the EIA directive (for projects).[16]

Neither the EIA-directive not the SEA-directive does provide explicit guidance in the form of procedural steps on the application of environmental impact assessment. This leaves margin for interpretation by individual Member States (COWI, 2009). The consequence is that individual countries have different EIA methods implemented in their legislation, which conform to different standards. Critique on this approach is that it often leads to EIAs of questionable quality and that independence and transparency are not guaranteed (T&E, 2009). Furthermore, as described in box 4.1, the HEATCO study already concluded that there are great differences among European evaluation practices. This may make the comparison of project proposals more difficult. On the other hand, the directives give explicit directions on the content of the environmental assessments. This should lead to some coherence in the final results of environmental evaluations. If the European requirements with regards to the content of environmental evaluation studies are compared with the theoretical design as stated in chapter two, it appears that the methodology prescribed by the European Union is fairly complete. Table 4.7 gives an overview of the content of ex ante evaluation studies, explicitly described in the environmental directives, compared with the theoretical considerations from chapter two.

[16] The EIA and SEA-directives are accessible on the website of the European Union

	Theoretical stages in ex ante evaluation procedures	EIA-directive	SEA-directive
1.	Screening	Yes	Yes (see below)
2.	Scoping	Yes	Yes
3.	Generation of alternatives	Yes	Yes
4.	Identification and analysis of effects	Yes	Yes
5.	Mitigating and compensating measures	Yes	Yes
6.	Evaluation of alternatives	Yes	Yes
7.	Presentation	Yes	Yes

Table 4.7 Stages in ex ante evaluation, theory and within the European directives on environmental assessment (EIA-Directive: 85/337/EEC; SEA-Directive: 2001/42/EC)

From the examinations of the SEA-directive and EIA-directive it appears that European Union provides fairly comprehensive requirements for the content of evaluation studies and the final environmental reports. The directives oblige the Member States to implement and perform theoretically complete environmental assessment procedures. The prescriptions in the EIA-directive for the stage of screening provide list for when EIA has to be performed, comparable to the Dutch approach to screening (see section 2.6.1). For Strategic Environmental Assessment these criteria have a more global character, leaving the establishment of need for SEA to the Member States.

On the aspect of socio-economic impacts of the projects, the guide for applicants and the application forms indicate the need for a solid ex ante evaluation of socio-economic aspects of the project. However, specific requirements for quality or form, such as a cost-benefit analysis, are not set. The consequence is that no CBA-framework is prescribed for the ex ante evaluation of socio-economic interests.

The procedural design for ex ante evaluation instruments has not been set explicitly by any regulation or guidance. Only the preconditions on content and objectives have been described in regulations and guidelines. In the case of environmental assessment this has been done very strict, obligating the Member States to include most of the required steps. To guarantee the quality of the results and uniformity of socio-economic evaluations for the purpose of decision-making it may be desirable to introduce the application of preset procedural steps or a harmonized ex ante evaluation framework as proposed by the HEATCO studies (box 4.1)

4.7 Concluding remarks

The objective of this chapter has been to examine the ex ante evaluation methodology and instruments used by the EU for the assessment of possible TEN-T projects. The grounds for the system as it has been developed can be found in the administrative nature of the European Union. The common transport policy and the principle of subsidiarity form the political context for the policy system and instruments used for the development of the TEN-T network. Due to this context and operational procedures of TEN-T, a very specific approach towards the ex ante evaluation of projects is required. It appeared that the distinction between the central (EU) level and decentral level (Member States) is a key distinction in the evaluation and assessment procedure. In essence, the ex ante evaluation of individual projects has always remained a matter for the individual Member States, represented by the specific project organisations. The distribution of funds for the development of TEN-T is the responsibility of the EU. This distribution takes place by means of an extensive assessment procedure, based on the information provided by the administration responsible for specific projects. The EU provides guidance for the application of individual ex ante evaluation instruments, but has always been reserved with strict legal provisions.

The section above is a brief summary of what has been described in this chapter. It is a brief overview of how proposed TEN-T projects are evaluated before decision-making about integration into TEN-T programme takes place and funds are allocated. The second main question of this chapter specifically concerns the elements of the described evaluation methodology requiring improvement. This will be elaborated in the table below by means of the three theoretical dimensions to ex ante evaluation of infrastructure projects.

Dimension	Elements
1 **Policy-making perspective**	The EU has a strong technical oriented tradition in the evaluation of projects. Communicative aspects are mainly of internal nature. External communicative is unilateral, only the publication of results. Communicative and institutional aspects are left to the individual Member States. Member States are urged to include communicative and institutional aspects into their methods, but the precise interpretation of the directions is an individual issue. This leads to diffuse approaches.

2	**Scope**	There appears to be a friction between the different scope of ex ante evaluation of projects. Strategic evaluations at the level of TEN-T as a comprehensive and coherent plan are the responsibility of the European Union. The operational evaluation of individual infrastructure projects in TEN-T is the responsibility of the Member States. On the tactical conversion of strategic objective into operational projects the top-down and bottom-up interests of respectively the EU and the Member States collide. From a theoretical point of view, the EU guidelines make an obvious distinction between strategic and operational evaluation of individual projects. The regulating directives provide a useful framework, but again the implementation remains an issue of the individual Member States and much is therefore dependent on their cultural and political backgrounds.
3	**Design of procedures**	The five step procedure of the EU for the assessment of project applications is a sound system. From theoretical perspective it is hard to discuss this, since it is more an assessment than an evaluation. The real ex ante evaluations are carried out on national level. The EU regulations obligate the applicators to carry out certain evaluation studies, but there are not many obligations on the procedural design. Considering the obligatory environmental assessments, the content of the assessment studies and reports has been described extensively, forcing the Member States to perform fairly complete procedures. For the socio-economic evaluations this procedural guidance is missing. Here harmonization of the guidelines may be recommendable.

Table 4.8 TEN-T ex ante evaluation methodology from a three dimensional perspective

The findings of this chapter, combined with the findings of chapter three will be discussed in chapter six. This discussion will also involve the findings from the case studies in the following chapter.

Chapter 5

TEN-T Projects

5.1 Introduction

The previous chapters have sought to expose the ex ante evaluation procedures in the development of infrastructure within the MIRT and TEN-T programmes. This has been done by describing the ex ante evaluation procedures and their position within the planning process. In support of the findings in the previous chapters this chapter has the objective to examine the implementation of the described ex ante evaluation methodology of the TEN-T programme from the perspective of the individual projects. Furthermore, the function of this chapter is also to serve as an illustration of the ex ante evaluation and selection procedures that are currently in operation. The corresponding balance between ex ante evaluation on the level of the individual Member States and the assessment performed by the European Union will also be involved in the examination. To achieve this the case studies will assess the level of detail in the applications in relation to the strategic vision and guiding objectives of the European Union on the development of TEN-T. The award criteria handled by the EU will be used as a frame of reference for this assessment. These criteria are relevance, maturity, impact and quality and have been described in detail in section 4.3.3. It has appeared that especially the quality criterion was a difficult issue for judgement without inspection of the application. Unfortunately the project organization have not provided insight into the funding applications.

However, before the examination of two individual cases takes place, section 5.2 provides an insight into the distribution of TEN-T projects. Since TEN-T is in essence an instrument for the distribution of funds for the development of Transeuropean transport infrastructure, this paragraph gives details on the distribution of funds over projects, different modalities and Member States.

This chapter takes into account two TEN-T projects, selected to make a valuable comparison. Selected from divergent cultural and institutional backgrounds, these cases will provide an overview of the different contextual settings of TEN-T projects within the European Union. In doing so, this chapter adopts a number of presumptions about the differences between individual planning and ex ante evaluation systems within the EU as true. These presumptions are partly supported by the findings of the HEATCO study (2005). The case studies will commence with a case in the Netherlands , from the assumption of a stable

planning system in a developed country. This will be followed by the examination of a case in Sweden. The Swedish society and planning system are comparable to the Dutch situation in the sense that both countries are highly developed. However, the infrastructure provisions in the Netherlands have a much higher density than Swedish infrastructure. Table 5.1 provides an overview of the various indicators on the society and infrastructure in the Netherlands and Sweden. According to the HEATCO studies, the Netherlands and Sweden both have developed an extensive system of ex ante policy evaluation (HEATCO, 2005). More information on the Swedish planning system, including project evaluation is provided in section 5.3.

Country	Motorway density[17]	Railway density	GDP per capita in euro	Population density[18]
Netherlands	56	68	34600	485.3
Sweden	4	25	36300	22.3

Table 5.1 National indicators on transport and society (Eurostat, 2008)

To preserve the possibilities for valuable comparison the projects involved have a comparable character. They involve the development of infrastructure solutions for similar transport problems. Both projects aim at the removal of bottlenecks near cities in important transport routes through the development of tunnel infrastructure. A difference is that the first project involves road infrastructure and the second rail infrastructure. The following projects will be treated in this chapter:

1. A2 Maastricht, the Netherlands (a MIRT and TEN-T project)
2. City Tunnel in Malmö, Sweden (a TEN-T project)

5.2 TEN-T Projects and funds

Before this chapter advances with the study of the individual cases, this section will first provide an insight into the composition of the whole of TEN-T projects. In the previous parts of this thesis this has only been done to a very small extent. This paragraph wishes to examine where the available funds for the development of TEN-T have been allocated. The function of this examination is to elaborate the position of the considered projects in this chapter in the wider frame of the TEN-T programme as a whole.

[17] Length(km)/Surface (1000 km²)
[18] Inhabitants per km²

First it is important to notice that the amount of granted EU funds to individual projects varies greatly. To illustrate this fact, this section will direct its attention towards the TEN-T priority projects. As described in the previous chapter, the European Union has designated 30 projects as a high priority. The average EU contribution to the TEN-T priority projects is almost 220 million euro. The amounts of EU contribution vary from 3.5 million euro in priority project 7 (the Motorway axis Igoumenitsa/Patra-Athina-Sofia-Budapest) to 960.1 million euro in priority project 1, the railway axis Berlin-Verona/Milano-Bologna-Napoli-Messina-Palermo (TEN-T EA, 2009b). It must be noticed that not all TEN-T project have started at the same moment and are therefore in different stages of the planning process. The project of the Betuwe Line, a priority project in the Netherlands has received 19.9 million euro, according to the same figures.

A further noticeable detail from the figures about funding is that the vast majority of the available funds are invested in rail projects. It appears that more 65% of the TEN-T funds are invested in rail project, while the road sector receives only 3.6% of the contributions. The figure below provides an overview of the distribution of the European funds by different transport mode. The reason for the high share of rail projects in the total investments is that the European Union has made rail transport one of the spearheads of the transport policy (see also section 4.2).

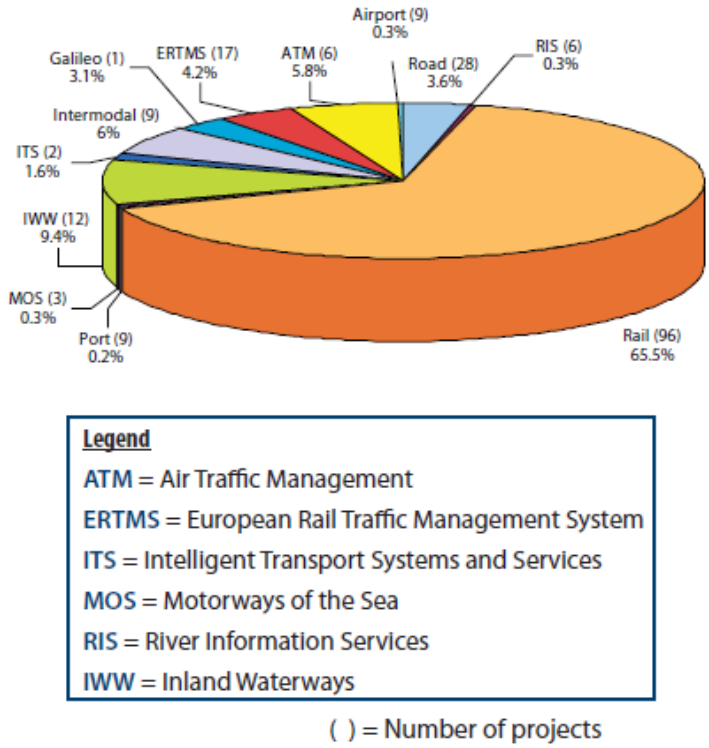

Figure 5.1 Share of current EC contribution by transport mode (TEN-T EA, 2009b)

When the distribution of TEN-T funds is considered from the perspective of the individual Member States a striking distribution can be observed. It appears that the traditional EU Member States (referred to as the EU15) have a lower ratio between the received TEN-T funds and their individual contribution to the realisation of the TEN-T projects than the younger Member States in the east and south (referred to as Cohesion Countries by the EU[19]). This means that the traditional EU Members relatively receive less community contribution for TEN-T projects than the new Member States in the east and south. Among the new Member States the contributions of the European Union can cumulate to around 75% of the total funds of a country's TEN-T projects, while the traditional Members do not receive a higher share than 10%. A further notable fact is that in these countries the ratio between TEN-T investments and a country's GDP is substantially higher among the new Member States than among the traditional Members (EC, 2009b: p. 80-81). This indicates relatively much investment in TEN-T projects in these countries. It must be noticed that these countries are characterised by less developed ex ante evaluation and assessment systems for infrastructure projects (see also section 4.3.1). Apparently there seems to be no relationship between the allocation of community funds and the degree of sophistication of ex ante project evaluation in the Member States. The younger Member States receive the most TEN-T funds, while they have the less developed planning and evaluation system.

5.3 Case 1: A2 Maastricht

The A2 Maastricht project in the south of the Netherlands has been on the Dutch infrastructure planning agenda for many years. The first studies on renewing the Maastricht passage of the A2 date back to the 1980s. In 2009 a definitive administrative agreement on the redevelopment of this major bottleneck has been closed between involved parties. The main problem in the A2 Maastricht case is the present problems, through the presence of multiple traffic light junctions on a main connection between the Netherlands and the south (E25: Hoek van Holland – Genoa - Palermo). The A2 passage at Maastricht is the only European Highway interrupted by traffic lights and zebra crossings. The traffic problems bring along a number of further problems with the liveability of the area, accessibility and safety. Altogether this leads to a complicated situations of plural problems caused by the A2 highway in Maastricht. Figures 5.2 and 5.3 provide an insight into the problems caused by the A2 passage in Maastricht (crossing Koningsplein and Scharnerweg, Maastricht).

[19] The statistics on this subject make a distinction between the EU15 and the Cohesion Countries. The so-called Cohesion Countries are countries that receive extra support from the European Union in the interest of the European Cohesion fund. The Cohesion Countries are the new Member States in the east and south and Greece, Spain and Portugal.

Figure 5.2 *The A2-passage at Maastricht is a major bottleneck due to the presence of traffic lights and zebra crossings (Author's material, 2009)*

Figure 5.3 *Liveability, accessibility and safety are seriously affected by the present traffic problems (Author's material, 2009)*

The solution to the problems is found in the realisation of two tunnels for the traffic flows in combination with an integral, area oriented approach for the upgrading of the area involved (V&W et al., 2009; Dagblad de Limburger, 2009). In this solution the functions transport and living are separated in the considered area (see also figure 5.4). The project is part of the MIRT programme, corresponding to the integral and area oriented character of the project.

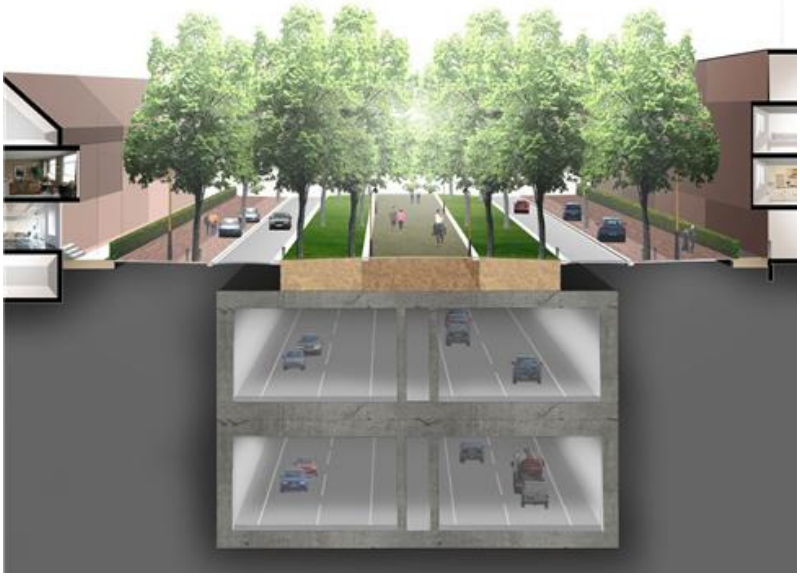

Figure 5.4 *The planned solution for the A2 Maastricht problems separates the transport and living functions of the area(A2 Maastricht, 2009)*

5.3.1 Project finances

In 2009 the European Union has decided to support the removal of the Maastricht bottleneck by the realisation of a tunnel with a subsidy of 15 million Euro. The project organization indicates that it is rather unique that a Dutch project is selected for TEN-T funding. According to the project organization the majority of the available funds are awarded to project in the eastern European countries of the European Union. The figures in paragraph 5.2 appear to support this claim. The funds, granted under the TEN-T programme, are made available from the European fund for economic recovery (EC, 2009b). This grant of funds is in addition to an earlier European subsidy of 2.5 million Euro. The project organisation in Maastricht indicates that the European commitment is the final piece in completing the financial puzzle for the project. The total budget for the A2 Maastricht project is estimated at 683 million Euro (2008 estimations).

Besides the financial importance of the granted TEN-T funds there is also an administrative interest in the granting of the funds. The integration of the A2 Maastricht project into the Transeuropean Transport Networks gives the project a European stature. The project organization indicates that this in an obligation to complete the project, within the set timeframe. The project organization indicates that the granting of funds from a higher administration functions as an incentive for realization of the set ambitions (Jeroen Maas, A2 Maastricht[20]).

[20] Appendix 10 gives a complete list of all the persons and organizations interviewed

The majority of the funds required for the development and realization of the A2 Maastricht projects are provided by national and regional administrations in the Netherlands. The administrative and cooperative agreements provide a detailed breakdown of the budgetary arrangements that have been made. This is the total budget for the intended project. It must be noticed that the agreements state that acquired TEN-T funds are considered as a windfall. In first instance these funds are for the benefit of the contribution of the Maastricht municipality. The table below provides a detailed financial breakdown for the project.

Total contributions (2006)		**%**	**TEN-T subsidies (2009)**		**%**
State	€ 499.0	*79%*	Study	€ 2.5	*0.4%*
Maastricht Municipality	€ 87.7	*13.9%*	Realisation	€ 15.0	*2.4%*
Meerssen Municipality	€ 1.0	*0.2%*		€ 17.5	*2.8%*
Province of Limburg	€ 43.6	*6.9%*			
	€ 631.3	*100%*			

Table 5.1 Financial arrangements for the A2 Maastricht Project (x 1 million)

5.3.2 Planning and ex ante evaluation

The official planning process for the solving of the transport and environmental problems in Maastricht started in 2004, with the publication of starting notice. A schematic overview of the planning process since 2004 can be found in appendix 7. Following the advice of the Dutch EIA committee to the project organization the evaluation takes place by means of a two-step process (Commissie MER, 2004). The planning process has been adapted to this advice and has been combined with a third public phase in between. The table below gives an overview of the two steps and the implementation the planning process based on the advice of EIA committee.

	Step 1	**Step 2**
Subject of studies	Transport studies on alternatives as a solution to traffic problems	Description of relevant alternatives, comparison on effects
	Further filtering of alternatives on external effects	Further specification of alternatives by market parties
Objective	Decision on the preferable alternative	Project decision; tracé design and EIA (OTB/MER), final tracé decision
Scope	Strategic/tactical character	Operational character

Table 5.2 Planning and ex ante evaluation in two steps

The assessment instruments used in the Netherlands covers almost all main effects identified by the HEATCO study on evaluation and assessment practices among the Member States of the European Union (2005). Table 5.3 gives an overview of the categories the included in evaluation in the Netherlands. The only element that is left out of the considerations are the vehicle operating costs. On the methodological side the use of cost benefit analysis prevails. However, the assessment of noise, air pollution and climate change also involve the use of Multi Criteria Methods. As described in section 2.6.1, these methods are capable of including non-monetary, qualitative dimensions in ex ante policy evaluation. Therefore supra-national issues and sustainability criteria are very well considered by MCA methods (Gamper and Turcanu, 2007). The involvement of MCA on air pollution and climate change issues in the Netherlands is theoretically well considered.

Effects	Road	Rail
Construction costs	Yes	Yes
Disruption from construction	Yes	Yes
System operating cost and maintenance	Yes	Yes
Passenger transport time savings	Yes	Yes
User charges and revenues	Yes	Yes
Vehicle operating costs	**No**	**No**
Benefits to goods traffic	Yes	Yes
Safety	Yes	Yes
Noise	Yes	Yes
Air pollution - local/regional	Yes	Yes
Climate change	Yes	Yes

Table 5.3 Categories of main effects included in the ex ante evaluation of road and rail projects in the Netherlands (HEATCO, 2005)

The first planning phase mainly has a tactical character and results in an official decision on the preferable alternative. The primary base for this decision is in an integral report on the assessment of 12 possible alternatives and variants of the A2-passage at Maastricht (Rijkswaterstaat Limburg, 2005). This report can be considered as a primarily tactical assessment on the sustainability of different possible solutions towards the policy and project objectives. This assessment has been prepared with a broad focus, taking into account traffic and transport considerations as well as external effects. This broad evaluation of alternatives appears to be of comparable nature with reconnaissance as it is currently prescribed by the framework of rules for the MIRT-programme. The TEN-T funds received for study objectives

have been granted specifically for the assessments and evaluation of alternatives and variants in this phase.

After the first, strategic and tactical planning and evaluation phase, the official planning procedures have been interrupted for the development of variants on the preferable alternative by market parties. Market parties were invited to join in a design competition. This mode of operation implies interweaving of the legal procedures with market involvement. An innovative approach in the Dutch spatial planning practice (Cox, 2009). The winning design has been announced in 2009. From there the second phase of planning procedures advanced. The planning efforts in this phase have an operational character. Ex ante evaluation in this phase is orientated at environmental and external effects of the chosen alternative, following the 2004 advice of the Dutch EIA committee. The contemporary planning efforts of the project organization for the A2 Maastricht project are aimed at taking a project decision (phase 3 of the MIRT-programme, see chapter 3). For the purpose of this decision the project organization is currently developing a combined Design Tracé Decision and Environmental Impact Assessment (OTB/MER).

The development process for the complete A2 Maastricht project lasts until 2025. However, the realization of the infrastructure parts of the project has been planned for completion in 2016. The scheme in appendix 7 provides an overview of the complete planning process from the start in 2004. For the purpose of the application for TEN-T funding the standard planning process has been modified on certain elements. Certain planning procedures have been accelerated to meet the required deadlines for application. The project organization indicates that it appeared possible to fasten certain procedures, modify the phasing of the process and change some financial and economic arrangements to achieve the desired acceleration (Maas, in interview).

5.3.3 TEN-T application and assessment

The objective of this section is to examine on what exact grounds the TEN-T funds have been awarded to the A2 Maastricht project. To establish these grounds and the importance of the project for the Transeuropean Transport Network, this section will link the project description and further backgrounds to the TEN-T award criteria. The contents of the award criteria have been described in chapter four. The A2 Maastricht project has long intended to attract grants from the TEN-T funds. The preparation of the application has started in 2006. The preparation of the application has been performed with the support of an external consultancy agency with specific expertise on the attraction of subsidies.

As stated above the subsidies have been granted under the European Economic Recovery Plan (EERP). EERP is not a regular funding plan for TEN-T, but has been introduced in reaction to the financial crisis as an opportunity for funding in addition to the regular funding schemes. The objective of the plan is the stimulation of the economy by 'supporting investment activity in infrastructure, energy, research and innovation'. The European Commission has made available an extra 500 million euro for investments in TEN-T to provide a quick boost to the economy. The first priority for these funds is to support new projects of common interest, in accordance with the TEN-T guidelines, that have not yet been supported by other EU funding. Secondly, the EERP grants also intend the acceleration of ongoing projects, that may already have received funding under previous grants (European Commission, 2009c).

The assessment has been performed in accordance with the described procedure in chapter four. The first selection of projects has been made by external experts, with specific attention to technical details of the applications. According to DG TREN, this has enhanced objectivity and technical quality of the evaluation procedure. The final selection has been made by DG TREN, resulting in a list of 39 projects selected for funding. In the selection DG TREN has specifically focussed on policy priorities. The application and evaluation procedures have both been accelerated, as a consequence to the short term nature of the EERP financing programme. As a response to the financial crisis, haste was needed. This had consequences for both the individual project organizations and the EU evaluation mechanisms. The consequences for the A2 Maastricht have been described in the previous section (European Commission, 2009c).

The table below provides an overview of the relationships between the award criteria handled by the European Union and the content of the A2 Maastricht project, in the light of the EERP-funds (see also table 4.3)

Award criterion	Short definition	A2 Maastricht
Relevance	Contribution to TEN-T priorities/objectives	The A2 passage at Maastricht is a major bottleneck on the route from the port of Rotterdam to the south (France, Italy). The removal of barriers on the main transport routes is one of the prime objectives of TEN-T. Furthermore the project has an innovative character and promotes the development of sustainable mobility, through an area oriented

		approach and separation of living functions from through traffic (freight).
Maturity	Project ready to go?	The planning process for the A2 Maastricht project has been underway for many years. The project is ready to go in the sense that all administrative agreements have been settled over the past years. Preparatory works are planned to commence before the end of 2009. The real realization of the project is planned to start in the second half of 2010.
Impact	Socio-economic/environ-mental impact	The A2 Maastricht project is part of the Dutch MIRT-programme. According to the Dutch planning system the project has to go through intensive ex ante evaluation procedures. Socio-economic aspects are assessed through the application of an obligatory social cost-benefit-analysis. Environmental aspects are assessed by means of an environmental assessment on primarily tactical issues and an operational project-EIA, which is currently being prepared. This means the inclusion of both strategic and operational environmental considerations in the decision making process. However, the European SEA directive was not implemented in Dutch legislation at the time the planning process started. Nevertheless the first environmental assessment took place on the interface of strategic and operational assessment and has included policy objectives as well as transport and traffic considerations. The overall ex ante evaluation takes place in two phases guaranteeing the balance between strategic, tactical and operational ex ante evaluation.

Quality	Completeness, clarity, soundness, coherence	Clear arrangements between the parties involved form the basis for the successful realisation of this project. The project obviously suits the EU objectives of the integration of the Transeuropean Transport Network and the removal of major bottlenecks. Furthermore, the sustainable area oriented approach that involves local developments in the improvement of the transport corridor give the project has an innovative character. The project finances have been secured in agreements. The financial contribution form the TEN-T budget has relieved the financial pressure.

Table 5.4 The award criteria in reference to the A2 Maastricht project

5.4 Case 2: City Tunnel, Malmö, Sweden

The City Tunnel project in the Swedish city of Malmö is the second project that will be examined by means of a case study. The City Tunnel project covers the construction of new underground railway infrastructure in Malmö. The main objective is to construct an improved rail transport system to decrease travel times in the Malmö region. This project is part of TEN-T Priority project 12, known as the Nordic Triangle. The Nordic Triangle is a multimodal transport axis in Sweden and Finland and roughly connects the cities Gothenburg, Malmö, Stockholm and Helsinki. The Malmö region is a crucial point on this axis since it is the connection to Denmark and consequently to the European mainland. In 2000 Malmö has been connected with a fixed link to Denmark through the realization of the Öresund Bridge between Malmö and Copenhagen. Subsequently, the Öresund Bridge is connected to Priority Project 20, which provides a connection with Germany and the rest of the European mainland. In other directions the Nordic Triangle provides road and rail connections in the direction of Norway in the north and Russia in the east. It is therefore an important multimodal axis for the further development of Sweden and Finland (European Commission (2005); TEN-T EA, 2009).

The City Tunnel project in Malmö is considered to be especially important for rail traffic from Sweden to Denmark, Germany and Poland, as well as local and regional rail traffic. The realisation of this project includes the construction of two new tracks in Malmö, doubling the rail traffic capacity. Furthermore, through a separation of freight and passenger traffic, the

safety of the rail line is increased. The project map below gives an insight into the planned activities. The total planned activities comprise the construction of 17 kilometres of electrified railway track providing an improved connection with the Öresund Bridge, of which six kilometres in two parallel tunnels, three new stations, and three kilometres of single track in the east of the Malmö area (Citytunnelprojektet, 2003).

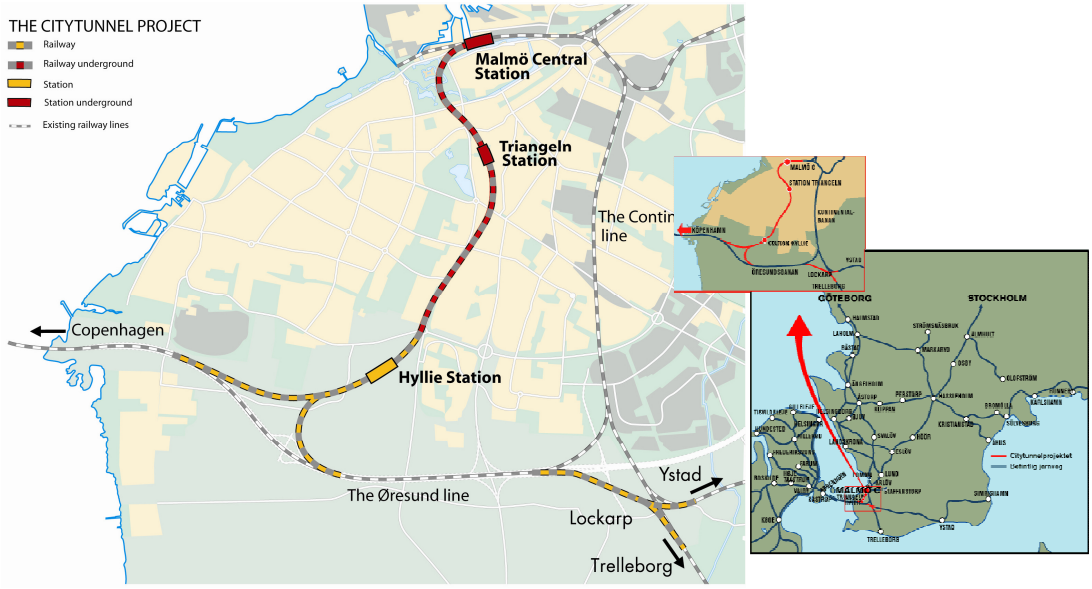

Figure 5.5 An overview of the City Tunnel project in Malmö (Citytunnelprojektet, 2003)

The project organization has indicated that the City Tunnel project has seven purposes (Citytunnelprojektet, 2003). It is remarkable to notice that these objectives mostly have a regional or national character. Despite the integration of the project in the Transeuropean Transport Network, the realisation of the project seems to be primarily for the purpose of regional and national interests.

1. Increasing the competitiveness of the rail-based public transport in the Skåne region;
2. Contribute to a better integration in the Öresund Region;
3. Strengthen the competitiveness of the national rail system;
4. Environmental mitigation along the Continental Line;
5. Strengthen the development of towns in the Skåne region with rail links;
6. Strengthen the Malmö city centre as a regional centre;
7. Serve as a step towards an eco-friendly transport system and a sustainable society.

5.4.1 Project finances

The financial breakdown of the project provides an insight into the financial stakes of the different parties involved in the realisation. The European Union has contributed circa 7% of the total financial sum of the project. The vast majority of the funds is contributed by the

Swedish Rail administration. The table below provides an overview of the parties involved with a financial stake in the realisation of the City Tunnel project.

Financial Breakdown	SEK (2001)	Euro's (2001)	%
National Rail administration	SEK 6811	€ 737,0	*72%*
Malmö City	SEK 1088	€ 117,7	*12%*
Skåne Region	SEK 859	€ 92,9	*9%*
EU subsidies[21]	SEK 692	€ 74,9	*7%*
	SEK 9450	€ 1.022,5	*100%*

Table 5.5 Financial arrangements for the City Tunnel project (x 1 million) (Citytunnelprojektet, 2003)

5.4.2 Infrastructure planning and ex ante evaluation in Sweden

This section is an introduction into the Swedish planning culture. Section 5.4.3 provides an examination of the planning process and ex ante evaluation of the City Tunnel project. The planning of transport infrastructure in Sweden has its legal basis in national legislation. National law provides the legal framework for long term, strategic planning and short term, operational planning. The national authorities only provide very broad guidance though the preparation of a national physical plan. There is no national formal planning institute in Sweden. The most important instrument for development of spatial policy is in the hands of the regional authorities, with the regional economic plan and the regional spatial plan. These instruments define the strategic regional policy for the development of individual policy sectors. This includes the strategic development of road networks and traffic plans. Economic interests are leading in the physical planning in Sweden (European Commission, 2000).

Sweden has developed a comprehensive system of ex ante policy analysis. The attention for strategic planning and impact assessment has been developed since the mid 1980s. Sweden has introduced Environmental Impact Assessment as a legal obligation in 1987. Strategic environmental assessment has recently become obligatory for national and regional transport plans after the implementation of the SEA-directive of the European Union. In Sweden SEA is carried out "within the context of the national and regional transport infrastructure plans, which are revised every four years on the basis of a government ordinance" at the strategic planning level. However, during the preparation of plans for the City Tunnel project there was no obligation for a Strategic Environmental Assessment. Strategic Environmental Assessment was being carried out, but were often initiated too late and not fully integrated in the planning process. Consequently to this voluntary basis for the preparation of SEA was

[21] It is good to notice that the European Union provides a different financial breakdown of the project. According to this calculation the EU contribution to the project is 10%.

that the effect on the planning process and decision-making was limited (Brokking et al., 2004).

In addition to strategic ex ante evaluation, operational evaluation is obligatory for individual projects. In whole Scandinavia Strategic Environmental Assessment has been integrated with policy, planning and decision-making as a part of the procedures. In 1999 Jansson described a development trend towards broad assessments on networks and corridors (Jansson, 1999). Consequently to the already developed system of strategic and operational policy evaluation, the entrance of Sweden into the European Union in 1995 did not require much modification of environmental and assessment legislation (European Commission, 2000). The Swedish assessment instruments covers almost all main effects identified by the HEATCO study on evaluation and assessment practices among the Member States of the European Union (2005). Table 5.6 shows the categories that are included in evaluation in Sweden. Only the disruption from construction on the environment is not taken into account in the Swedish assessment procedures. It also turned out that Swedish planning authorities only use Cost Benefit Analyses in the planning of road and rail projects.[22] This is different from the Dutch approach where the application of multicriteria methods is common on some environmental and sustainability issues (see table 5.3).

Effects	Road	Rail
Construction costs	Yes	Yes
Disruption from construction	**No**	**No**
System operating cost and maintenance	Yes	Yes
Passenger transport time savings	Yes	Yes
User charges and revenues	Yes	Yes
Vehicle operating costs	Yes	Yes
Benefits to goods traffic	Yes	Yes
Safety	Yes	Yes
Noise	Yes	Yes
Air pollution - local/regional	Yes	Yes
Climate change	Yes	Yes

Table 5.6 Categories of main effects included in the ex ante evaluation of road and rail projects in Sweden (HEATCO, 2005)

5.4.3 TEN-T application and assessment

The TEN-T funds have been awarded to the City Tunnel project in 2007. The application has been based on extensive ex ante project evaluation, including social-economic and environmental analysis. An individual institute has performed this ex ante evaluation (Centre

[22] For further information on the HEATCO studies see text box 4.1 and appendix 4

for Transport Economics, Borlänge). The social-economic analysis has learned that the exploitation City Tunnel will generate enough income to cover the costs. The social-economic analyses foresee a certain increase in integration in the Öresund region with the operation of the City Tunnel. If this integration leads to more traffic the tunnel will be profitable immediately. According to the most probable scenario, it has been estimated that traffic will increase by 40%, consequently to the opening of the tunnel (Citytunnelprojektet, 2003).

Regarding the environmental evaluation this section will consider strategic and operational ex ante evaluation. Despite the fact that during the preparation of the project plans for the City Tunnel Sweden did not yet have an obligation for Strategic Environmental Assessment, Brokking et al. (2004) consider the strategic methodology applied in this case as "an example of good practice". In 1990 the City Tunnel project first appeared in a master plan for the Malmö region. In 2002 an SEA was prepared for the regional transport infrastructure plan of the Skåne region. Despite the fact that the SEA system was not working optimal at the time, the voluntary preparation of an SEA, was successful. Intensive cooperation has lead to an optimal integration of the SEA into the regional transport plan. This Strategic Environmental Assessment has been carried out in accordance with the standards of the EU SEA directive (Brokking et al., 2004).

The operational ex ante evaluation of the environmental aspects of the City Tunnel project has taken place very seriously. Seven different alternative solutions, including a zero alternative, have been subject of Environmental Impact Assessment (Citytunnelprojektet, 2003). These options included the assessment of different routes and variable design options. Since route and modality decisions are theoretically considered as tactical choices, the inclusion of different route alternatives gives these evaluations a tactical character, next to the operational considerations taken into account. The extensiveness the project organization has observed in the environmental assessments had the intention of creating public support for the project. The EIA has resulted in an environmental impact statement that has been examined and approved by the Swedish environmental court. This trial in court has been partly voluntary, since it included all relevant environmental aspects while only the juridical examination of water issues was required. The project has been considered as whole to be able to set very fine and project specific environmental restrictions, sometimes exceeding the Swedish environmental law. During the extensive preparation of the Environmental Impact Assessment all predicted environmental impacts were considered, taking into account possibly different outcomes with the application of different production methods. In combination with the preparation of the EIA, the project organization has shown its environmental awareness through the preparation of an Environmental Management System

(EMS), combined with EIA. The construction of the City Tunnel takes place in accordance the requirements of ISO 9001 (quality management systems) and ISO 14001 (environment management systems) (Citytunnelprojektet, 2003). The applied EMS system is a good example of an efficient, comprehensive environmental strategy, including follow up instruments (see section 2.6.2). The objective of this EMS has been to be able to control the environmental terms during the construction process, when many tasks are being handed over to contract companies. With the preparation of an Environmental Management Systems the project organization has retained the control over environmental issues and secured the follow up of the serious environmental preparations and agreements during the implementation phase (Varnäs et al., 2009). That the project organization retains the environmental control, and controls the behaviour of construction companies in implementation phase, is one of the positive effects of follow up that have been described by Morrison-Saunders et al. (2003).

The examination of the project backgrounds and description in combination with the analysis of the socio-economic and environmental ex ante evaluation has provided a valuable insight into the character of the project. The table below will associate the found information with the application and granting of TEN-T funds. It is important that bear in mind that this project is a link within a TEN-T priority project, designated by the European Union. The A2 Maastricht project from the previous case did not have this status.

Award criterion	Short definition	City Tunnel Malmö
Relevance	Contribution to TEN-T priorities/objectives	The project is an important link in the integration of separated individual transport networks within the European Union. It contributes to smoother traffic flows from Scandinavia to the European main land and vice versa. Nevertheless the project organization primarily stresses the regional and local benefits of the realization of the project. Local and regional development in Malmö and the Skåne region appears to be the prime objective for the initiation and realization of the City Tunnel project.
Maturity	Project ready to go?	The City Tunnel project has gone through an intensive preparation process since the early 1990s. In this process strategic and operational considerations have been taken into account.

		Especially the tactical and operational considerations have received extensive attention during the planning process. One of the objectives of the extensive evaluation process has been to create public support for the project. The strategic assessment of the project and corresponding policy has had a voluntary character.
Impact	Socio-economic/environ-mental impact	The impacts of the realization of the City Tunnel project have been examined seriously. The social economic considerations show a positive balance for the realization of the project. CBA has been performed and shown positive impacts on traffic growth, multimodal split, inter-operability, regional or national competition, service quality, safety and security. The environmental impact has also been assessed extensively. The Environmental Impact Statement has been approved in court. In combination with the EIA and Environmental Management System has been prepared to guide the sustainable realization and operation of the project.
Quality	Completeness, clarity, soundness, coherence	The proposed actions suit the project objectives as well as the TEN-T objectives of the European Union. However, it appears that the balance is primarily in favour of local and regional objectives. The project management strategy has been developed carefully. There are clear agreements between the parties involved. The Environmental Management System that has been developed secures the attention environmental interests during the implementation and operational phase (Värnas et al., 2009). The financial arrangements make a secure impression.

Table 5.7 The award criteria in reference to the City Tunnel Project in Malmö

5.5 Concluding remarks

From the case studies above it appears that it is possible for infrastructure projects to become part of the TEN-T network for projects that are (partly) top-down initiated as part of a priority project (City Tunnel) as well as for projects that are bottom-up initiated by the individual Member States (A2 Maastricht). The incentives for projects to become part of the TEN-T network are primarily of financial nature. Furthermore, the integration of a project into the Transeuropean Transport Networks also provides the project with a certain European stature, which functions as an obligation to complete the project. The financial contribution of the European Union to the project is depending on the specific status of the individual project. The A2 Maastricht project is primarily based on self-financing and receives only 2,8% TEN-T funding. The City Tunnel project in Malmö receives substantially higher absolute and relative contribution. The relative contribution of European Union to the project is 7%. This could be explained by the fact that the City Tunnel project is part of an EU Priority Project. However, the project organization primarily stresses the local and regional purposes of the project as the main objectives. This is in contradiction with the objective of the EU for priority projects to support the integration of the Transeuropean Transport Network. Furthermore it most be noticed that, compared to projects in the new Member States of the EU and in the old support needing countries (Spain, Portugal and Greece), this contribution is still low.

The cases that have been studied have a slightly different approach towards scope of the ex ante evaluation of socio-economic and especially environmental impacts. In the case of the A2 Maastricht the focus has been very strongly on the strategic and tactical ex ante evaluation in the preparation of the project plans. This can be explained from the projects position as part of the Dutch MIRT-programme. As has been described in chapter three, within the MIRT-programme and its framework of rules there is a clear aim for strategic and tactical planning of projects. In the Swedish case the accent of environmental evaluation appears to be more on the tactical and operational side of ex ante evaluation. This has been taken very seriously in the planning process. The strategic ex ante evaluation and plan making has had less influence, probably consequently to the voluntary nature of SEA in Sweden. From this, one could conclude that the depth of strategic ex ante project evaluation does not have much influence on the granting of TEN-T funds by the EU. This could be explained through the fact that strategic plan making often has a nationally oriented character and that the European Union primarily looks at the development of a European Network and appears to pay less attention to the individual, national considerations. This is an example of the friction between the European strategic vision forming on the development of the network and the

operational and tactical consideration that take place on the level of the individual Member States. This friction has been previously referred to in section 4.5.

Both projects studied have been mature and of high quality in the application. Therefore it is hard to conclude anything about these award criteria. The conclusion from this chapter is that the European Union is eager to provide funds for the development of a Transeuropean Transport Network. Top-down or bottom-up initiation of the project is not really a factor in the granting of TEN-T funds. Furthermore, also the methodology and depth of strategic evaluation is not really a factor of importance. Nevertheless, environmental assessment has to live up to European SEA directive to a certain extent. However, it must be noticed that the projects involved in the case studies have applied for funds with a certain temporary interval. Finally, the principle of subsidiarity applied by the European Union in planning and realization of the projects leads to increased influence of national interests on the realization of Transeuropean infrastructure projects. It appears that giving projects a specific EU priority does not have much influence on this. The influence of the European Union on the project remains lower than desirable.

The following chapter will combine the experiences from the case studies in this chapter with the experience from chapters three and four. There will be a discussion and a preliminary start towards a final conclusion.

Chapter 6

Comparison and discussion

6.1 Introduction

The objective of this chapter is to discuss the findings from the previous chapters on the possibilities for improvements to the TEN-T evaluation and selection methods. Before the discussion of the findings commences the ex ante evaluation methodologies in the MIRT and TEN-T programmes will be compared. The theoretical framework described in the second chapter of this thesis guides this comparison. The ex ante evaluation methodologies from the Dutch MIRT-programme and from the TEN-T programme in the European Union will be compared on the three theoretical dimensions: theoretical approaches towards policy-making, the scope of the ex ante evaluations and the design of the ex ante evaluation procedures. This comparison will involve the descriptions from chapters three and four and the empirical findings from chapter five.

Besides the comparison and discussions on the considered ex ante evaluation methodologies in this chapter, this chapter also intends to take practical considerations into account. It is of no use to advice about implementation of Dutch ex ante evaluation practices in the context of the European Union on mere theoretical grounds. Therefore, after the comparison and discussion of the content of the previous chapters, this chapter pays attention to issues of policy transfer. The described points of attention on the transfer of policy from the second chapter of this thesis will be taken into consideration and applied to the transferable elements and the specific context.

When the comparison and the discussion about the possible use of Dutch ex ante evaluation methodology and instruments are combined with the assessment of how the described useful methodology has to be implemented this chapter concludes with answering the following research question: *What elements of the Dutch ex ante evaluation methodology could be helpful to improve the ex ante evaluation methodology for the purpose of TEN-T?*
This is a first start to finding an answer to the main question of this thesis in the following, concluding chapter.

6.2 Comparison and discussion of MIRT and TEN-T

The main objective of this thesis is the improvement of the ex ante evaluation and selection methods for the purpose of TEN-T. The previous chapters have assessed the Dutch ex ante evaluation system for the purpose of the development of the MIRT-programme (chapter 3) and the ex ante evaluation system of the EU, concerning the TEN-T programme (chapter 4). Within this framework the purpose of chapter three has been to provide an example of a well developed and considered ex ante evaluation system in an individual Member State. The underlying objective of the third chapter combined with the theoretical considerations in chapter 2 has been to develop a framework for improvement of the TEN-T practices, especially regarding the ex ante evaluation and selection methods. The main purpose of chapter four has been the description of the ex ante evaluation and selection system for the TEN-T network and to reveal possible improvement points. Both chapters have been concluded with a brief summary of the findings on the three theoretical dimensions to ex ante evaluation of infrastructure. These findings have been combined in a table that can be found in appendix 8.

The comparison of the MIRT and TEN-T frameworks for ex ante evaluation will take place on the basis of the three dimensional framework from the second chapter of this thesis. This framework has been applied to assess the situation in the Netherlands and the methods used by the European Union. It has appeared that the Dutch system and the European system have a different approach towards ex ante evaluation of infrastructure projects. This is due to the different administrative context of both planning systems. In the Dutch context, ex ante evaluation of possible projects takes place through the practical performance of the evaluation studies during plan preparation process. The European Union leaves this task to the responsibility of the individual Member States, in accordance with the principle of subsidiarity. The particular task of the EU is to provide and maintain the guidelines for the development of TEN-T. The ex ante evaluations carried out by the EU primarily concern the testing of proposed plans, programmes and projects against the programme objectives of TEN-T and other EU guidelines.

The further intention is to discuss the differences between the Dutch approach to ex ante evaluation in the MIRT-programme and the EU approach to ex ante evaluation for the development of the Transeuropean Transport Networks. The comparison will serve as the basis for the discussion. The objective is to identify elements from the Dutch situation that could provide a positive contribution to the whole of EU ex ante evaluation methodologies for the purpose of the development of TEN-T. In the following section these innovations will be considered from the point of view of the possibilities for policy transfer.

6.2.1 Policy-making perspective

The Dutch MIRT approach to plan making and ex ante evaluation and the approach handled by the European Union show similarities and differences. The similarities are the clearest on the technical-rational side of ex ante evaluation of infrastructure proposals. Both administrative systems involve technical expertise in the preparation of ex ante evaluation studies. Long lasting experience with the implementation of evaluation studies forms the technical or scientific base for these studies. In the situation of the European Union the technical expertise is secured through the involvement of external experts for the evaluation of the applied projects. More on the implementation of the specific ex ante evaluation instruments in different individual Member States can be found below in this section.

There is less similarity in the approaches towards ex ante evaluation on the communicative aspects. The policy-making framework for the MIRT-programme is characterized by openness and participative approaches. Based on the findings in chapter three, the Dutch situation is characterized by a balanced division between technical-rational, communicative and institutional aspects. The application of individual ex ante evaluation studies takes place on a balance of technical expertise combined with communicative aspects. The involvement of communicative aspects results from integrated and open nature of the MIRT-process. Open and participative plan making is one of the primary aims within the MIRT-programme. The result is that process design pays particular attention to the institutional context of the specific planning process. The intention is clearly to develop a two-way system with attention to top-down and bottom-up communication, leaving room for participative and cooperative methods of working. The experiences with this mode of operation have only been very recent, but appear to be positive, according to the Dutch Centre for Public Participation. The planning process itself as well as the final deliverable of the planning process is improving through the early involvement of a broad set of relevant stakeholders. With this mode of operation the Dutch plan makers show awareness of the institutional context of the infrastructure planning process.

From the perspective of the European Union, the involvement of communicative and institutional aspects into the ex ante evaluations is different. Chapter four shows that communicative and institutional parts of planning and ex ante evaluation are delegated to the individual Member States. This is due to the administrative nature of the European Union and the application of the principle of subsidiarity, as has been described in section 4.3. Therefore, this discussion requires a distinction between central and decentral ex ante evaluation practices. The central evaluation studies carried out by the EU are merely an assessment or control against guidelines and objectives of the information provided in the

individual projects applications. During this process the EU only engages in internal communication, with other departments within the organization of the EU, about the considered projects. Furthermore, there is also no aim for engaging in interaction with the institutional context of the projects. Due to the nature and purpose of the assessment procedure performed by the European Union, it is doubtful to what extent engaging in intensive communication with stakeholders would have added value. This is a primary task of the individual Member State.

The framework for the individual ex ante evaluation studies that are the responsibility of the individual Member States is different. These studies are carried out under the guidelines and regulations set by the European Union and the individual Member States. The EU has provided guidance for the evaluation studies of the Member States and the involvement of stakeholders through directives, which have been described in chapter four. These directives leave the individual Member States room for an own interpretation of the regulations in the incorporation into their own legislation framework. The consequence is that the policy-making settings and evaluation systems of the Member States can be highly divergent. Also on the issue of communicative requirements and institutional factors the Member States can implement their own, different approaches. This is a threshold for the mutual comparability of evaluation studies produced by different countries. Since the performed ex ante evaluation studies have not been performed within a tight policy making framework, there is no quality guarantee for the evaluations.

A solution to this problem would be the harmonization of the policy framework within which the evaluations have to be performed. In 2006 this has already been recommended by the HEATCO study (section 4.3.1). To enhance the quality of the planning process this new framework would have to pay specific attention to the implementation of communicative issues in top-down and bottom-up directions. The friction between top-down and bottom initiation is one of the major bottlenecks in the development of TEN-T, as has been concluded in chapter four. Furthermore, the framework should take specific account of the positioning of the planning process within the institutional context it takes place in. Communicative and institutional aspects should be taken into account as early as possible in the process. The technical-rational aspects of the planning process are often better secured in the plan making processes of individual Member States. On the other hand, political and administrative actors within the EU doubt whether this problem really decreases the quality of the planning process of TEN-T projects. They indicate that, despite the room that is left for individual Member States in the implementation of EU regulation, individual project applications must comply with TEN-T and general EU guidelines to be eligible for funding.

The EU assessment procedure functions as a control mechanism and Member States will have to comply.[23]

6.2.2 Scope of ex ante evaluations

The plan making and ex ante evaluation practice in the Dutch MIRT-programme have recently been recharacterized by means of a strengthening of the emphasis on the strategic and tactical phases of the process. These developments, highly influenced by the findings of the Elverding Committee, have been described in chapter three. Many essential choices have been reframed in earlier stages of the planning process. The result is that these issues can be assessed from a broader perspective. Consequently the scope of evaluations has also changed. In addition to traditional ex ante evaluation on operational issues, ex ante evaluation of tactical aspects has been added to the procedure. The planning of infrastructure within the MIRT-programme now takes place in a balanced situation of plan development and evaluation of plans and projects. One of the strengths of this system is the increased role of strategic and tactical plan making and ex ante evaluation as has been concluded in chapter three. The recent shifts appear to lead to a smoothening of the planning process, resulting in more prosperous infrastructure planning. This statement is supported by the ministry of Transport (Van Dantzig), however an official evaluation of the MIRT-framework is not yet available. Furthermore, within the MIRT planning process the attention to integral plan making and coherence within individual projects has been increased. The strategic backgrounds of the MIRT-programme are formed by the Dutch national mobility and transport policy. The conversion of this policy into the MIRT-programme and projects takes place by means of administrative deliberations and so called area agendas, as has been described in section 3.4. These forms of public-public cooperation, involved in the MIRT planning framework, ensure a balance between top-down and bottom-up interests in the initiation of projects in the MIRT-programme. The A2 Maastricht project, examined in chapter five, is an example of this approach. The project has been developed upon a solid strategic and, especially, tactical base, involving not merely an infrastructure project but aiming at integral development for the surrounding area.

As has been described in chapter four, the European Union is guiding the balance between strategic and operational planning and ex ante evaluation in the Member States by means of several directives and regulations. The implementation of this guidance is left to the individual Member States, but it is in their own interest to make sure that the developed

[23] Based on interview with Benjamin Beldman, policy officer Peter van Dalen (European Parliament, vice-president commission for Tourism and Transport) and Julie Sors, evaluation manager TEN-T EA. In appendix 10 a complete list of the persons interviewed can be found.

policy complies with EU standards. The EU assessment procedure and the distribution of funds operate as a control mechanism, as has been concluded in chapter four. Therefore the implementation by individual Member States should not be considered as the main problem within the ex ante evaluation and selection structure for the purpose of TEN-T.

Beldman[24] indicates that the main problems at the moment are related to securing the coherent overall development of the TEN-T infrastructure. This is where the friction between top-down and bottom-up development that has been described in section 4.5 occurs. Figure 4.2 has illustrated the friction in the vertical planning chain between strategic and operational interests. Consequently to the administrative nature of the EU and the current TEN-T methods of operation, the Member States are inclined towards maximizing their own individual benefits from the TEN-T resources. Due to the bottom-up initiated development method of TEN-T, the national benefit of a project is the main incentive for initiating the development of a project. This has also been shown by the case studies in chapter five. The main incentives for the development of the projects were to be found in the national and regional interests.

The consequence is that the integration of TEN-T components in accordance with the objectives of the Transeuropean Network policy stays behind and the network remains a patchwork of individual projects. Currently, the common European interest is lagging behind in the development of the network. The core of the mismatch between top-down visions and bottom-up interests is situated in the conversions of strategic aims into the tactical planning phase. This is the point where the European Union (top-down, strategic vision) and the individual Member States (bottom-up planning and realization) meet each other. Therefore this is the arena where solutions are to be found.

Ideally, the common European interest should be the primary driver of the development of TEN-T, instead of the individual national and financially driven interests. This development and the realization of individual projects has to take place in a coherent and integral manner from a common European development perspective. A top-down, strategically and visionary oriented approach of TEN-T is required for the achievement of the communal objectives. However, due to the administrative context of the European Union it is not possible to ignore the role of the individual Member States. The operational development of new infrastructure will remain a task of the Member States. To solve this issue a balance between top-down and bottom-up planning must be re-established in the vertical planning chain. Currently the distribution of TEN-T funds is the only instrument the European Union has for directing the

[24] Policy officer to Peter van Dalen (European Parliament, vice-president commission for Tourism and Transport)

development of TEN-T on this point. The addition of an extra instrument for steering would strengthen the position of the EU in steering the creation of the Transeuropean Transport Networks.

6.2.3 Design of ex ante evaluation procedures

In the Netherlands the procedural design of the ex ante evaluation instruments has undergone a process of standardization over the past years. The standardized approaches that are currently in operation do fit within the theoretical considerations on the design of evaluations procedures described in chapter two. The objective of the standardization has been to improve the decision-making process. The results of this standardization appear to be a mainly positive, but of only minor influence in the perspective of this thesis. Standardization and harmonization of instruments and methods are probably not the optimal solution to the existing problems, as will be elaborated below.

In this discussion it is once more important to have a clear view on the European practice. The European evaluation practice is composed of a dual ex ante evaluation structure. The initial ex ante project evaluation is performed by the individual Member States; the assessment or evaluation of project applications is performed by the EU. The assessment of the project applications by the EU takes place in a straightforward five-step procedure on the basis of the information provided by the applying Member State. This procedure guarantees the main principles of objectivity and transparency as the basis of the evaluation and selection process. The EU performs this assessment of the applications against TEN-T guidelines and criteria. It takes place in a considerable administrative procedure. Beldman (2009) indicates that the five-step assessment procedure makes a solid impression and should not be considered as a weak link in the planning process. This statement is supported by the findings in chapter four.

The performance of ex ante evaluation studies on individual project initiatives is a responsibility of the individual Member States. These countries are responsible for the development of their own ex ante evaluation instruments. The EU has provided some guidance for the development of these instruments by the means of directives, such as the EIA and SEA-directive. However, the precise design of the procedures is up to the individual Member States. Due to institutional differences a wide variety exists. This has been confirmed by the HEATCO examinations in 2005 and also appears from the differences between the two cases studied in chapter five. The consequence of this variation in the use of ex ante evaluation instruments is that it decreases the possibilities for mutual comparability of ex ante evaluation studies, which makes the decision-making about the distribution of funds more difficult. For the purpose of this thesis, the variation in ex ante evaluation

systems makes a valid comparison between the individual Dutch ex ante evaluation instrumentarium and the instruments applied by other Member States unfeasible.

Nevertheless, the question remains whether standardization and harmonization of evaluation instruments would lead to an improved situation. The differences between evaluation systems do not necessarily lead to a worse final deliverable. The assessment procedure performed by the European Union functions as a control mechanism in the application procedure, as has been described in section 6.2.1. The EU interpretation of guidelines and preconditions is leading in distribution of funds. Consequently, if project proposals are not sufficiently underpinned, they will not be recommended for funding. A further advantage of leaving the interpretation and application of the ex ante evaluation instrumentarium to the individual countries is that the designed systems are adjusted to the institutional and administrative frameworks of the individual countries. On project level the local administration is more capable of making solid assessments than the EU evaluation staff, since a valid assessment requires much context specific knowledge.

As stated above, the EU assessment system functions as a control mechanism on the ex ante evaluation systems of proposing countries. Funds will not be granted if this application is not sufficiently underpinned or lacks the desired quality. This is a responsive and passive way of controlling and stimulating the planning and ex ante evaluation instruments of the Member States that guarantees only a minimum desired quality. To improve the ex ante evaluation procedures and consequently the quality of the final deliverable, a more proactive approach could be a solution; a proactive approach with the aim of controlling quality standards and stimulating the implementation of high level ex ante evaluation practices. In the Netherlands a system alike exists for reviewing the quality of environmental assessments (Netherlands Commission for Environmental Assessment: box 3.1). A committee provides independent advice to decision-makers about the guidelines for performing individual impacts assessments and especially about the quality of performed impact assessments. The introduction of an institution alike or broader, including other aspects such as socio-economic evaluation and ex post studies, could proactively improve the quality level of ex ante evaluation studies performed by the individual Member States for the evaluation and selection procedure of TEN-T projects. The addition of proactive instruments could result in learning processes for the Member States for the improvement of their individual evaluation mechanisms.

The conclusion of this section should therefore be that the division of responsibilities between the individual Member States, responsible for implementation and application of ex

ante evaluation procedures, and the EU, as a control mechanism, is in essence a balanced mode of operation. The distribution fits to the nature and general mode of operation in the European Union of sharing responsibilities and delegating tasks to the lowest possible level (the subsidiarity principle). For the improvement of the general ex ante evaluation methodology of TEN-T the harmonization and standardization of evaluation methods and other modifications to the procedural design are not the solution. However, the addition of an institution handling proactively towards the ex ante evaluations performed by the individual Member States would bring some benefits. The Netherlands Commission for Environmental Assessment could be an example. However, the focus of the European institution should be broader than merely environmental assessments. The conclusions that the assessment procedure of the EU makes a solid impressions and that the design of individual evaluation instruments is not the main problem in the general evaluation procedure, are shared by sources around the European parliamentary commission on transport policy and DG TREN[25].

6.3 Recommendations

It appears that the major problem in the development of TEN-T and the ex ante evaluation structure involved is to be found in the scope of the planning process. Based on the findings in chapter four as well as the case studies in chapter five, there appears to be a friction between the top-down strategic vision of the European Union on the development of the network and the bottom-up operational efforts performed by the individual Member States. To achieve the desired TEN-T objectives the EU should increase its grip on the direction of policy development through the application of more top-down oriented infrastructure planning. From the perspective of the scope of the planning process the conversion of strategic and visionary plan making into operational projects deserves more attention, especially including the friction within strategic-tactical considerations around proposed plans and projects. More balance between bottom-up driven planning and top-down strategic vision forming would strengthen the common interest, at expense of the national interest. Currently the national interest of individual Member States often prevails over the common European interest in the development of TEN-T, wrongfully.

Currently, the only instrument the EU has for the direction of the development of TEN-T is the distribution of the TEN-T funds. The development of a stronger strategic vision for the development direction should be an additional method of steering. The introduction of

[25] Benjamin Beldman (Policy officer to Peter van Dalen) and Julie Sors (Evaluation manager, TEN-T Executive Agency)

improved methods for public-public cooperation between the central EU administration and the individual administrations of the Member States would certainly increase the coherent development of the Transeuropean Networks, conform the objectives of the TEN-T policy. Administrative deliberations between the EU and Member States could be an instrument to achieve this.

From the discussion above it has become clear that the ex ante evaluation practice of the European Union is currently a reactive instrument. The introduction of a broad (including socio-economic and environmental evaluations) and proactive instrument, with the objective to control the quality of ex ante evaluation studies and to stimulate the development of improvements to the methodology, would be an improvement. This recommendation has been derived from the Dutch planning system. In the Netherlands an institution alike (NCEA, box 3.1) provides useful guidance for environmental ex ante evaluation procedures. An example is the A2 Maastricht project, described in chapter five. In this project guidance has been provided on the development of the tactical and operational guidelines for ex ante environmental evaluations, as well as feedback on the results of the performed environmental evaluations.

6.4 Possibilities for policy transfer

The objective of this paragraph is to discuss whether and how the outcomes of the comparison and the discussion earlier in this chapter can be subject to policy transfer. To do so this paragraph will involve the theory on the transfer of policy elements into the considerations. Specific attention will be paid to the barriers to the transfer of policy from one administrative system to another. The following barriers are identified by Banister (in Rietveld and Stough, 2005) and are described in section 2.8:

1. Resource barriers
2. Institutional barriers
3. Social and cultural barriers
4. Legal barriers
5. Side effects
6. Other (physical) barriers

These theoretical barriers will be reflected upon the policy recommendations stated above. The objective is to come to preconditions for successful introduction of the described policy adaptations.

6.4.1 Rebalancing top-down strategic plan-making and developed bottom-up tradition

The implementation of this recommendation would primarily involve a shift of influences and interests. The individual Member States will have to diminish their individual influence on the development of TEN-T, currently expressed by efforts to maximize individual benefit. This happens at the expense of the common European interest. The common European interest needs to be balanced with the individual national interest. The introduction of administrative deliberations between central and decentral administrations in the European Union could be an instrument to achieve this.

The desired changes in influences and interests and an optimal introduction of a public-public cooperation instrument primarily require institutional and social-cultural barriers to be overcome. From the perspective of the European Union, it is important to recover a leading role in the development of TEN-T. Strategic and coherent visions on the network and the tactical assessment of proposed projects must form the grounds for the future development of the network. These visions are to be reflected in the distribution of funds, which is the main steering and stimulating instrument for the EU to influence the development of TEN-T into the desired direction. For the achievement of this objective, the EU needs to step up to a more leading role. Otherwise, TEN-T may never be able to comply with its initial ambitions.

At the same time, from the perspective of the individual Member States a renewed attitude is required. Individual Member States have to make a switch in their behaviour, from maximizing individual benefit towards serving the common European interest. These changes may involve considerable time-consuming procedures, as they are dependent on deep-rooted cultural and political systems to accept the recommendations and adapt to the required changes. Therefore, the described innovations must be introduced with a sense of care and room for building the required institutional capital in the individual Member States. Too sudden changes may result in unintended side effects, such as heavy opposition from the Member States to the new methods of operation. Time is a crucial factor in the building of local institutional capital (Healey et al., 1999). The article of Healey et al. shows that it takes time for local administrations to respond successfully to external pressures.

As described, the desired changes in influence directions and interests would primarily require overcoming institutional and social-cultural barriers. In the implementation process, the first and fourth barrier to successful policy implementation, resources and legal provisions, can be employed as providers of policy support. The implementation of the proposed policy conversion will not only require institutional capital, but also a certain, not

to be underestimated amount of financial and physical capital. Firstly, the (re) introduction of top-down strategic infrastructure planning and project evaluation will be encouraged by the availability of sufficient financial resources. The provision of funds is also a signal to the individual Member States that they are not the only ones that have to make concessions. Secondly, the process of change and the renewed TEN-T procedures must be equipped with sufficient and capable personnel to ensure a smooth transition phase, as well as a successful application of the new policy.

Besides the financial and physical resources, legal provisions may also be supportive to the proposed innovations. As described in chapter four, one of the principles of the EU is the principle of subsidiarity. It states that decision-making should take place on the lowest possible administrative level. It also states that the EU should take action if the objectives of the EU cannot be achieved by individual action of the Member States (Commission of European Communities, 1992). In the case of TEN-T there is an obvious added value of policy action by the EU over individual policy-making by the individual Member States. The EU can hold on to the principle of subsidiarity in the composition of a more top-down policy-making structure. Secondly, firm legal arrangements provide the EU with an instrument to persuade Member States to follow the new mode of operation promoted by the EU, when the innovations are implemented in EU regulations and guidelines. However, the design of the regulations should bear in mind that each Member State should be able to integrate the new mode of operation into its specific institutional situation.

To conclude this paragraph about the transfer and implementation of the policy recommendations, this section briefly takes note of some political considerations. Obviously, from the perspective of the individual Member States there is a sensitive side to the proposed innovations. A shift in power relations is inherent to the recommendation to aim for rebalancing the top-down approach with the current bottom-up way of proposing additions to the network. Member States have to hand over decentral powers to the central administration of the European Union. This is generally a tough issue for the Member States, in the electorates in many countries there are very often negative feelings about the growing influence of the European Union. The recent developments around the new European Treaty could take away some of the painful spots. The Treaty of Lisbon aims to make the European Union more democratic and more effective and decisive in its operations (Buitenlandse Zaken, 2008).

6.4.2 Introduction of a proactive and supportive institution

The introduction of this institution has the objective to proactively provide support to the evaluation system of individual countries. The desired instrument would have a broader task than the previously described Netherlands Commission for Environmental Assessment. It should not only aim at environmental assessment, but also include other aspects such as socio-economic evaluation. Furthermore, further broadening would have to include a focus on ex post evaluation, in addition to ex ante evaluation. In this way, the institution can be supportive in development of broad, integral evaluation chains in the Member States. This can enhance the cross border development of projects within the Transeuropean Transport Networks.

The introduction of such an institution for the improvement of ex ante evaluation systems has a dual objective. Firstly, the institution aims to control proactively the ex ante evaluation studies performed by the individual Member States on quality and can advice decision-makers how to deal with the presented evaluation studies. Secondly, the institution can also employ expertise for the improvement of poor evaluation practices. This proactive position, is in contrast with the reactive position towards control of evaluation the EU currently takes. Further, the introduction of this institution has a strong relation with the previous recommendation, which also included the establishment of supportive instruments for the purpose of strengthening the evaluation framework where necessary.

When considering the theoretical barriers towards the implementation of this institution, fewer difficulties may be expected in comparison with the preceding recommendation. Unlike the previous recommendations, this innovation does not involve many changes in power relations and interests. This innovation is mainly an addition to the system of ex ante evaluation of possible TEN-T projects. The biggest barrier is probably the practical implementation in relation to the availability resources. Sufficient and capable human resources must be available. Furthermore, the establishment of this institution also requires a certain amount of funds.

A final problem that might be encountered when the institution is in operation is the administrative embeddedness in social and cultural systems. As mentioned in the first recommendation, administrations must be allowed sufficient time to adapt to policy changes. Accepting help and opening up for learning opportunities is a difficult process, which simply takes time.

6.5 Concluding remarks

The objective of this chapter has been threefold. First, the comparison and discussion of the ex ante evaluation systems for the purpose of MIRT and TEN-T was made up on the basis of what has been described in the preceding chapters. A schematic summary of the comparison can be found in appendix 8. The objective of the discussion has been to come to recommendations about elements from the Dutch ex ante evaluation practice that could have an improving value within the context of the European Union and TEN-T. This discussion has resulted in two recommendations. At first, the ex ante evaluation and selection methodology applied by the European Union for the purpose of TEN-T, can be improved by means of increased attention to top-down strategic plan-making, as counterweight to bottom-up tradition that has developed to rebalance the existing situation. The introduction of an instrument for public-public cooperation after Dutch example could support this aim. Secondly, the introduction of a proactive and supportive institution, for the control of quality and content of ex ante evaluation would be a helpful addition to the system.

The final section of this chapter concerned an examination of the possibilities for the transfer of the selected policy elements. The conclusion from this section must be that successful implementation of the recommendations is largely dependent on the possibilities for institutional and social-cultural adaptation from both sides, the EU and the individual Member States. Probably, this will consume considerable time. Sufficient resources are required as supportive factors. The recommendations should be seen as an integral policy innovation. This means that optimal results will be achieved though coherent implementation. Finally, it is good to notice that the contemporary administrative reform process aiming for a more effective European Union may prove to be supportive to the implementation of the recommendations. The reform treaty aims to make the EU more efficient and faster in decision-making.

Chapter 7

Conclusion

7.1 Introduction

As described in the first chapter of this thesis the objective of this thesis has been to contribute to the future development of TEN-T in the European Union. Within the theme of TEN-T, this thesis has specifically pointed its attention towards methods and procedures of ex ante evaluation and selection of infrastructure projects. The desired development of the common European infrastructure network appears to be lagging behind schedule. One of the reasons for this is that the ex ante evaluation and selection procedures that are currently handled do not result in the developments necessary for reaching the TEN-t objectives. This thesis has aimed to come to recommendations on possibilities for improving the European methods of operation around the evaluation and selection of projects for TEN-T, through making a comparison with another infrastructure development programme. At the hands of a theoretical framework, with specific focus on three different dimensions of the ex ante evaluation of infrastructure projects, the TEN-T practices have been compared with the Dutch methods of operation within the MIRT-programme. The MIRT-programme is a comparable infrastructure programme to the TEN-T programme in the sense that both aim at the coherent development of a comprehensive and multi-modal infrastructure network. It must be noticed that the overall objectives of MIRT are broader than TEN-T. TEN-T aims merely at the development of infrastructure, while the MIRT-programme places infrastructure development within the broader frame of coherent spatial development, though area-oriented visions. Besides the analysis of the MIRT and TEN-T programmes this thesis has intended to increase the empirical evidence by means of two case studies. For finding a satisfying answer to this question different forms of research have been conducted, including literature and document analysis, in-depth interviews and case studies.

Corresponding to the objectives of this thesis, the examinations have taken place at the hands of the following research question: *In which way can ex ante evaluation methods for the purpose of the selection procedures of proposed projects for the Transeuropean networks (TEN-T) be improved by learning from positive experiences with ex ante evaluation and selection of projects in the Dutch MIRT-programme?*

7.2 Three dimensions

From the theoretical framework at the beginning of this thesis three theoretical dimensions have been extracted. The purpose of the three dimensions has been to serve as a framework of reference for the examinations and comparison of the MIRT and TEN-T programmes. Specifically the ex ante evaluation and selection methodologies of both infrastructure programmes have been reflected on the three dimensional framework. The three dimensions involved are (a) the theoretical perspectives on policy-making, (b) the scope of ex ante evaluations and (c) the procedural design of the ex ante evaluation procedures.

Before the concluding remarks on the three dimensions are described it is important to be aware of the dual nature of the ex ante evaluation and selection procedure employed by the European Union. Due to the administrative nature of the EU and overall modes of operation in the EU the procedure is divided between the individual Member States and the central EU administration. The planning of Transeuropean Networks is a shared responsibility between the Member States and the central administration (Buitenlandse Zaken, 2008). The consequence is that the ex ante evaluation studies and application of the projects for funds are tasks of the Member States. The task of the EU is to consider the applications to the TEN-T guidelines and to decide on the distribution of support and funds.

7.2.1 Policy making

When MIRT and TEN-T are compared on the dimension of policy-making it is clear that both systems have sufficient attention to the technical sides of ex ante evaluation. On the aspect of communicative issues and the institutional context the differences are more present. The EU leaves this generally to the implementation by the Member States. In the Netherlands and within MIRT, a balanced approach has been developed with sufficient attention to communicative aspects of the planning process and awareness of the importance of the institutional context. This has led to positive experiences, as is indicated by the ministry of Transport. However, not in every Member State such a methodology is guaranteed, often due to social-cultural and institutional differences. It appears that there is room for improvement, especially in cases of a less developed planning system. On the other hand, it must be noticed that the EU guidelines for TEN-T operate as a sort of control mechanism. When applications from Member States cannot meet the expected guidelines or are unsatisfactorily underpinned according to the guidelines of the EU, applications are turned down. The application system has been described in chapter four and further analyzed in chapters five and six.

7.2.2 Scope

Concerning the scope of ex ante evaluations of proposed plans the conclusion is that the Dutch system has recently increased the attention to strategic plan making. The planning

process has been rearranged with specific attention to strategic and tactical issues in the plan-making procedure. These rearrangements have been described in the third chapter of this thesis. The objective of this rearrangement is to come to more prosperous and smooth infrastructure planning in the strategic reconnaissance phase and also in the following phases, which have a more operational character. The planning and assessment of the strategic and visionary backgrounds of the MIRT policy and conversion into the tactical phase of planning takes place in administrative deliberations and through area agendas. In essence the overall strategic policy is a political decision by means of the administrative deliberation agendas. The Dutch system involves clear vertical tiering of strategic, tactical and operational planning. This has been described in section 3.6 and table 3.2. The planning of TEN-T project involves the interests and the European Union and the individual Member States. This leads to a friction between top-down and bottom-up interests (see figure 4.2). The current systems inclines the Member States to rank their individual interest above the common European interest. A finding that has been confirmed by the case studies in chapter five. The development of TEN-T in accordance with the programme objectives would benefit from the vertical streamlining and rebalancing of strategic, tactical and operational planning, ex ante evaluation and selection practices. To maintain the strategic and visionary objectives of TEN-T, planning and selection of projects for support and funding should be handled with more presence of top-down initiatives in contrast to the currently prevailing bottom-up initiated planning.

7.2.3 Procedural design

In accordance with the findings in thesis, supported by sources within the administrative and political side of the European Union, methods for ex ante evaluation of individual projects are not the primary aspect where room for improvements must be sought in light of this thesis. The EU has a solid framework for the assessment of project proposals against the TEN-T objectives. This framework involves external and internal expertise of the EU and appears to be meeting the objectives of transparency and independent decision-making. The procedural design of ex ante evaluation procedures applied by the individual Member States shows a wide variety, consequently to institutional and social-cultural differences. In such cases the assessment framework of the European Union functions as a controlling mechanism for implementation of guidelines by the individual Member States, as has been described in section 6.4.3.

7.3 Recommendations

Based on the examinations in this thesis two recommendations can be made for improvement of the TEN-T methodology for ex ante evaluation and selection of project

proposals. These recommendations are based on the experiences with Dutch system for the purpose of the MIRT-programme, as examined in this thesis. Innovations for TEN-T are not primarily to be found in the methods for ex ante evaluation and selection of individual projects. On the administrative level of the European Union there is a solid framework for the assessment of projects. On the level of the Member States the EU guidelines and regulations have to interpreted into fitting regulations. However, the largest benefit can be found on the conversion of the strategic vision into projects and steering of the projects that are being planned. Currently, the planning and rolling out of the network, is primarily bottom-up initiated, from the Member States towards the European Union. In the pursuit of the strategic, common objectives of TEN-T, top-down and bottom-up planning should take place within a better balanced framework. When the EU has a more strategically initiated and top-down oriented role, as a counterweight to the currently prevailing bottom-up initiation, the European Union has more possibilities to reach the common objectives. The distribution of the available TEN-T funds has to be based on the common objectives of the European Union. However, successful introduction of this recommendation requires more than merely a policy intention to replace bottom-up initiation by steering from a top-down vision. A balance must be found in the vertical dynamics of the planning chain (strategic – tactical – operational). In the Dutch context this has been achieved through the introduction of administrative deliberations based on area development agendas. These instruments of public-public cooperation have been described in section 3.4 of this thesis. Following the discussion in chapter six, the introduction of these instruments in the context of the European Union could lead to a structural improvement of the vertical dynamics and take away the existing friction between top-down, strategic visions and bottom-up, operational initiation of infrastructure plans for TEN-T.

Secondly, the introduction of a broad, proactive and supportive institution, for the control of quality and content of ex ante evaluation can play a stimulating role in the planning process for all Member States and enhance cross-border project development. As stated before, the implementation of the European guidelines on evaluation requires a somewhat sophisticated planning system that is not present in all Member States. Instead of the current reactive control mechanisms present in the assessment procedures of the European Union, this institution can play a proactive role in developing sustainable ex ante evaluation and selection instrumentaria in the individual Member States. Another role of this institution, after the example of the Netherlands Commission for Environmental Assessment, is providing independent advice about project evaluations to decision-makers. However, the role of the proposed European institution would be broader in the sense that it will involve all issues requiring evaluation in the planning of a comprehensive European infrastructure

network; including environmental ánd socio-economic assessments. Next to that, an efficient institution considers the whole evaluation chain; ex ante and ex post and their iterations as described in the theoretical policy cycle in section 2.2 of this thesis.

The employment of these recommendations from the Dutch context into the European practice requires specific attention to a number of barriers to the transfer of policy from one administrative context to another. This has been described in chapter six (section 6.3). The main conclusion is that implementation of the recommendations into the new administrative context primarily requires time and the presence of sufficient resources. The largest barriers are the required changes in power relations between and within administrative systems. This requires institutional and social-cultural adaptation.

Especially successful implementation of the recommendations by individual Member States may require time. Furthermore, the implementation of the new policy arrangements could be supported by the presence of sufficient financial and capable human resources.

7.4 Reflection

It has not been an easy task to compare the MIRT and TEN-T methods of operation for the purpose of ex ante evaluation and selection of infrastructure projects. The most striking difficulty is the different administrative nature of MIRT and TEN-T. Consequently to the administrative nature of the European Union, the EU does not really have an evaluating task but rather the controlling task that consists of assessing the project applications against the EU regulations and specific TEN-T objectives. Nevertheless, the development of a Transeuropean Transport Network has appeared to be an interesting theme for research. Especially the involvement of different administrative levels (EU, national administrations) with different and sometimes colliding interests may be worth further research, for example on the balance between the vision of the European Union on TEN-T and the interests of the Member States.

The research in this thesis is build on a theoretical framework based on theoretical literature on the subject of ex ante policy evaluation. The literature involved has a broad character, involving the subjects of general policy evaluation, environmental and socio-economic assessment and planning theory as well as theoretical considerations on the transfer of policy and policy elements. The theoretical framework used for the assessment of the Dutch and EU approaches consisted of three dimensions. The dimensions on the policy-making perspective and on the scope of the evaluations have proved their relevance for a valuable conclusion in

this thesis. The third dimension, the procedural design of the evaluation studies, appeared to be less relevant, since it is not possible to compare the Dutch and European practices on this point. As described, the European evaluation method has a different function than the evaluation studies performed by the individual Member States.

The examinations of the ex ante evaluation systems of the MIRT and TEN-T programmes were based on a combination of document analysis and a small number of in depth interviews. The documents analysed provide a rather comprehensive overview of the policy and regulations involved in the evaluation and selection of projects for the considered programmes. In addition to the analysis of policy documents and regulations several persons were interviewed, which provided valuable information. However, due to the complex nature of the planning and evaluation systems, the quality of the information used in this thesis could be increased by interviewing more persons. In addition to the examinations of the MIRT and TEN-T methods, the case studies have provided a useful empirical perspective. The projects studied have largely confirmed and enlightened the preceding findings. In further research on this theme, the examination of more cases may prove to be valuable, since there are often vast difference between the situations existing in different Member States of the European Union. Unfortunately, insight into the applications for EU funding for the projects has not been possible. Insight would have improved the value of the case studies for this thesis, since it could have provided an interesting view on the grounds on which EU funds have been awarded in relation to the level and extensiveness of the performed ex ante evaluations.

The conclusions of examinations in this thesis have resulted in recommendations for the improvement of the TEN-T development methods. These recommendations have been extracted from the Dutch situation and adapted for implementation in the EU context. The comparative analysis between the Dutch and European situation has provided an interesting perspective on the European situation as currently present. The problems related to the evaluation and selection of projects for TEN-T have been enlightened clearly. However, the question is whether extracting recommendations from the Dutch situation leads to optimal recommendations on the existing problems in the European Union. The focus on the Dutch practice might be too narrow for finding the most suitable solutions.

To conclude this reflection, in further research on this theme, it is first important be more aware about the backgrounds and problems from the side of the European Union that form the basis of this thesis. Secondly, future research objectives could have a more concrete character with a more precisely limited scope. Furthermore, an interesting research objective

would be to find out more on the relationship between the planning and ex ante evaluation system of individual countries and the awardance of funds from the available TEN-T finances. This would require more in depth empirical research on infrastructure projects in different Member States. This future research should involve infrastructure projects in TEN-T and outside of TEN-T, as well as projects that have seen their application for funding being turned down by the European Union. Due to the existing contextual differences among the Member States of the EU, case studies are a valuable research method within this theme. Insight into the project applications for funding and the grounds on which the EU has provided or refused funding would interestingly enhance the value of the case studies. Unfortunately such inspection of applications has not been possible during the examinations for this thesis.

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Appendices

Appendix 1

Overview of TEN-T Priority projects

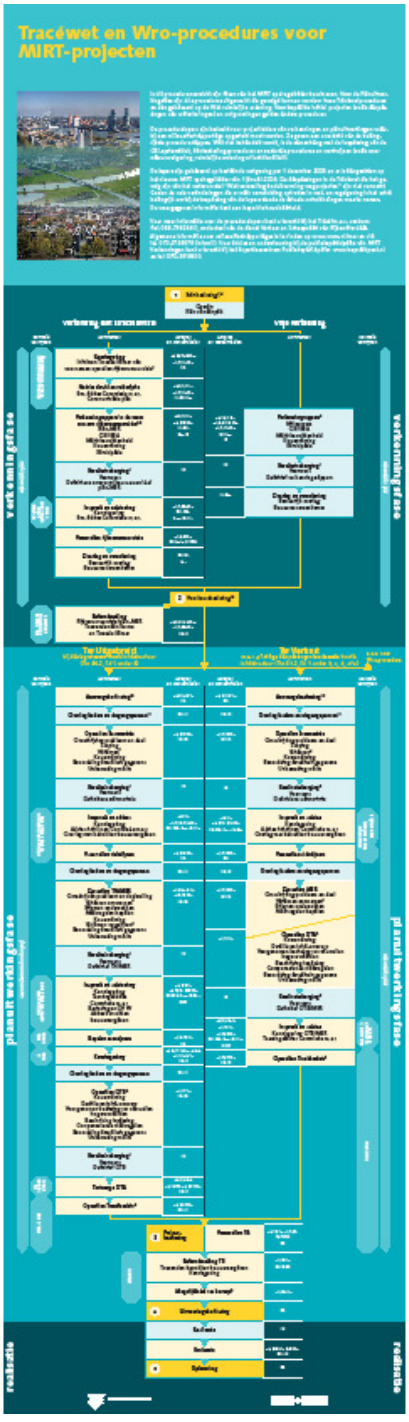
From: TEN-T Executive Agency

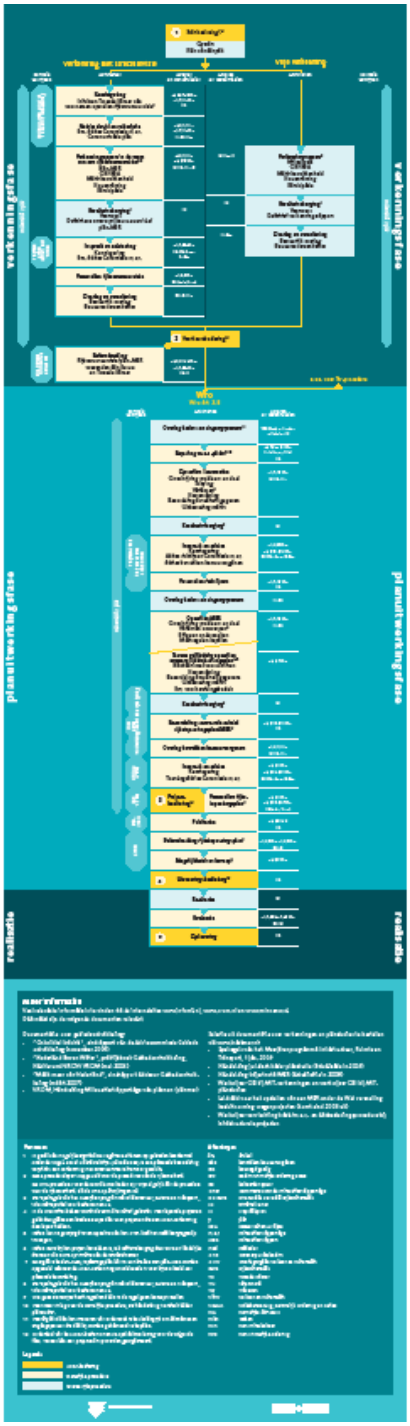
Front: Citytunnelprojektet, 2003; TEN-T EA, 2008; A2 Maastricht, 2009

Appendix 2

Procedural framework MIRT-programme

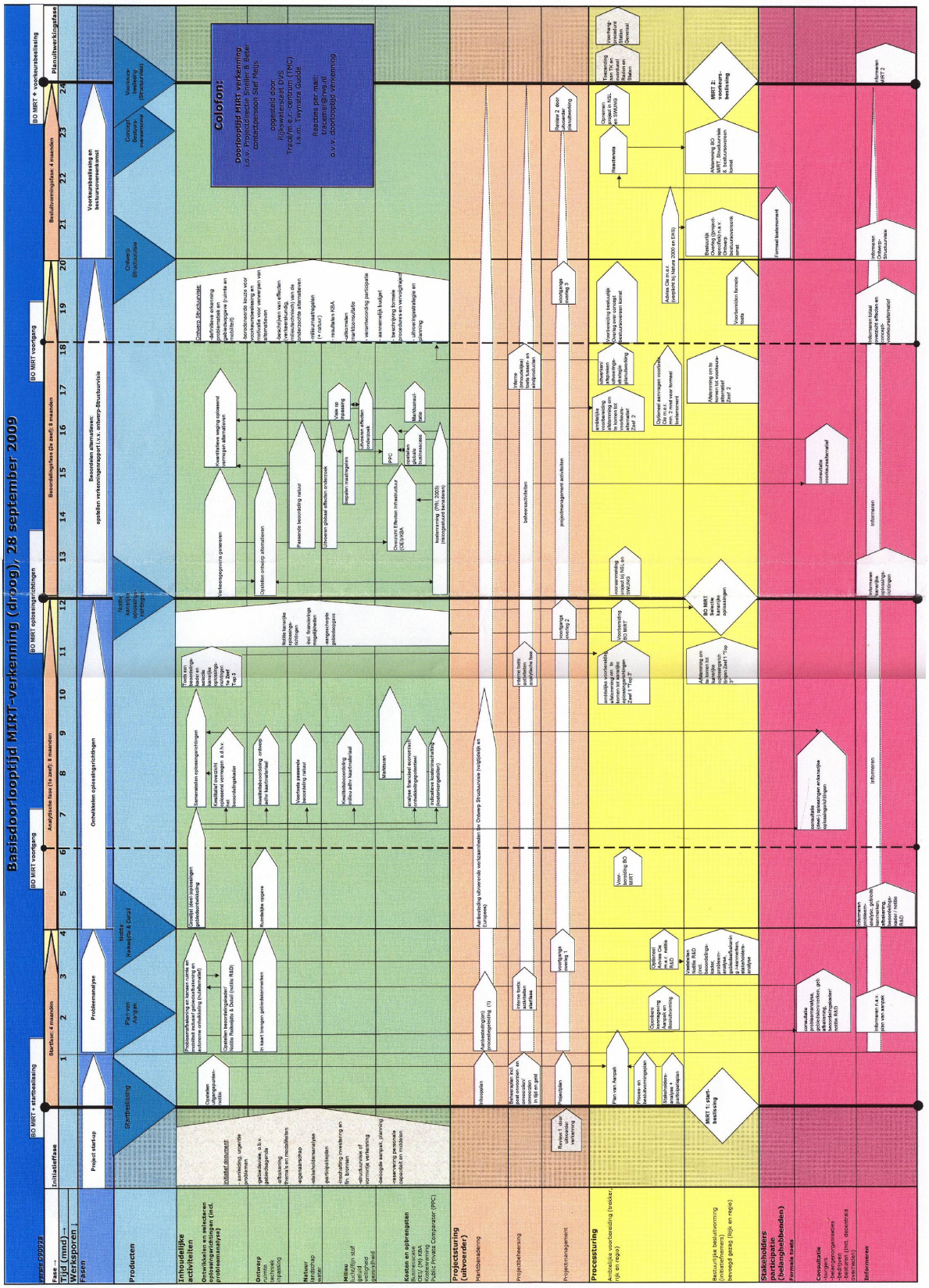
This is a procedural visualisation of the MIRT planning framework. The physical shape of the document does not allow for a better view in this thesis. The original document is best viewed online:
http://www.utrechtsnelweg.nl/userfiles/file/procedureloper_voor_mirt_projecten.pdf





Appendix 3

Overview of elements in MIRT-procedure



From: Centrum for Public Participation, Ministry of Transport

Appendix 4
HEATCO Studies

In the period 2004 to 2006 a study was performed on the harmonisation of guidelines for European approaches for transport costing and project assessment. This study took place in order of the EU and was coordinated by the University of Stuttgart. The main objective of the study was "to develop a set of harmonised guidelines for project assessment and transport costing on the EU level in the areas". For this purpose the first step was a drawing up an inventory of the different situations in the countries considered. This ex ante evaluation systems were examined on 11 main categories of effects.

• Construction costs	• Benefits to goods traffic
• Disruption from construction	• Safety
• System operating cost and maintenance	• Noise
• Passenger transport time savings	• Air pollution - local/regional
• User charges and revenues	• Climate change
• Vehicle operating costs	

Figure 1 *Elements taken into consideration in the examination of evaluation systems (HEATCO, 2005)*

The figures below indicate the numbers of effect taken into account in the assessment of road and rail projects. Also the distribution over different evaluation instruments, such as CBA, MCA and others, is indicated.

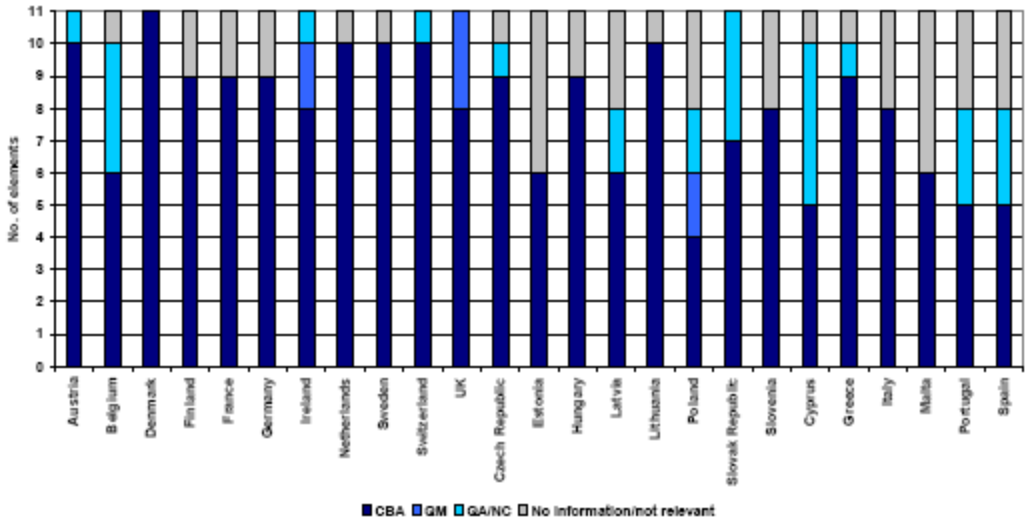


Figure 2 *Number of different elements used in appraisal of road infrastructure projects by country (HEATCO, 2005)*

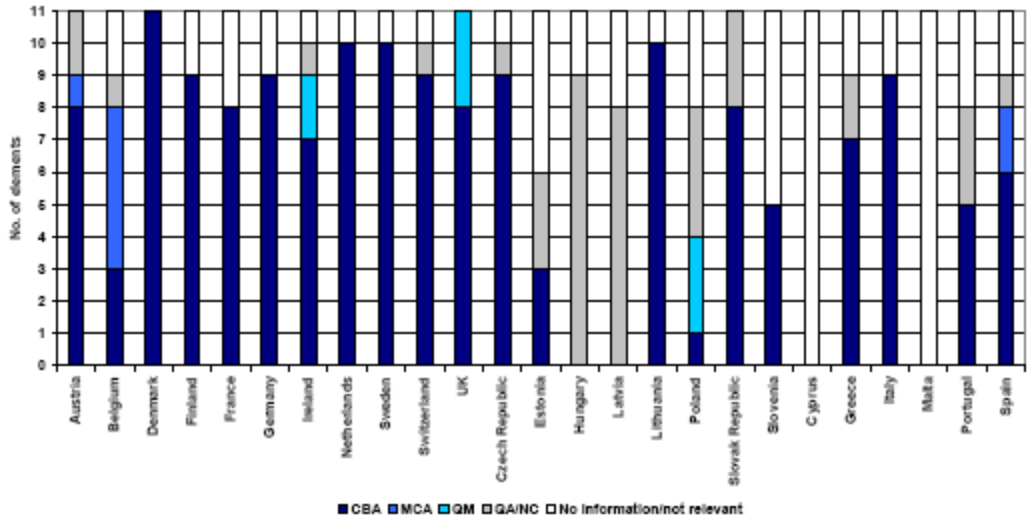


Figure 3 *Number of different elements used in appraisal of rail infrastructure projects by country (HEATCO, 2005)*

It appears that ex ante evaluation systems differ widely across the states involved in the study. There is a wide range of causes for these differences, such as different cultural and political backgrounds. A striking difference that becomes clear is the difference between north-west European and south-east European countries. Generally the north-west European appear to have a much more developed evaluation and assessment system than countries in the south-east of Europe. To conclude this appendix there is also a distribution available of the coverage of main effects by the number of countries that have included the effects in their considerations.

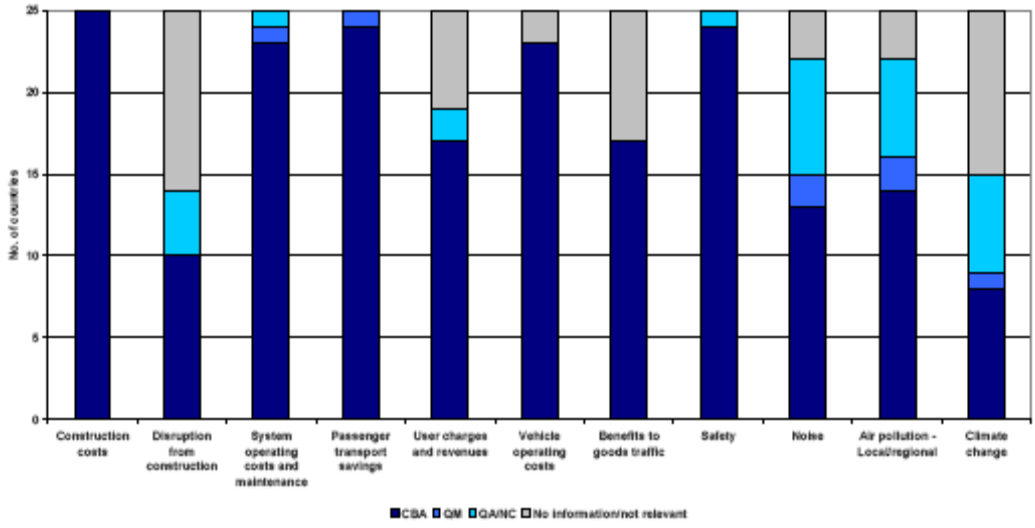


Figure 4 *Main effects distributed by the number of countries that involved the effects in evaluations; road (HEATCO, 2005)*

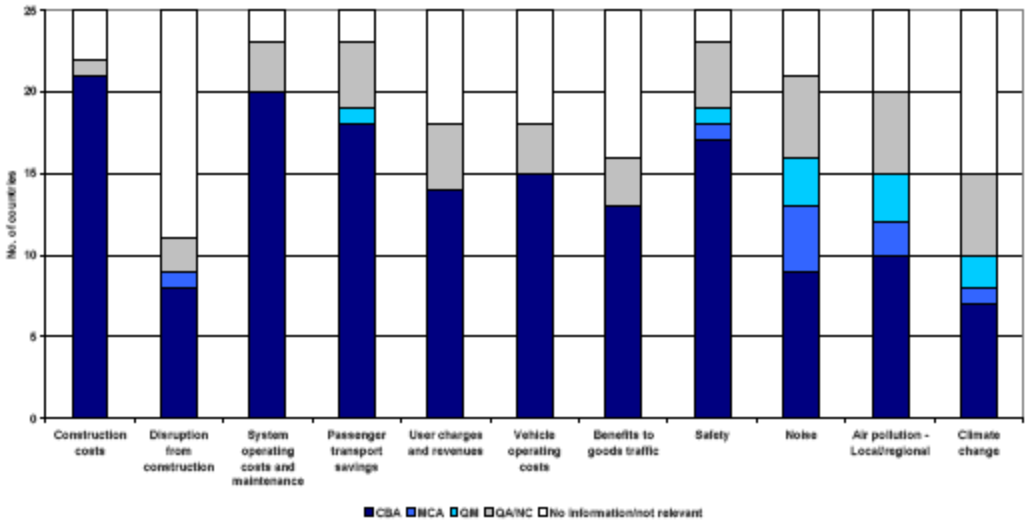


Figure 5 *Main effects distributed by the number of countries that involved the effects in evaluations; rail (HEATCO, 2005)*

Appendix 5

Financial breakdown TEN-T

Comprehensive Network EU 27, 2020 horizon

Transeuropean Transport Network	**1996 – 1999 EU 27**	**2000 – 2006 EU 27**	**2007 – 2013 EU 27**
Cost (€ billion)			
TEN-T Basic Network	106	302	390
- New Member States (EU 12)	5	27	72
- Old Member States (EU 15)	101	275	318
Community contribution (€ billion)			
Programme TEN-T	2.23	4.43	8.013
Cohesion Fund	8.23	16.50	34.8
ERDF (regions convergence)	7.51	8.6	9.4
EIB Loans and guarantees	26.50	41.4	53.00
Total Community contribution (€ billion)			
Grants	18.06 (17%)	29.53 (9.8%)	52.2 (13.4%)
Grants and Loans	44.56 (41 %)	70.93 (22.5%)	105 (27%)
Other resources (national)	63.4 (59%)	231.1 (76.5%)	285 (73%)

Priority projects (excluding Galileo)
30 priority projects (2020 horizon)

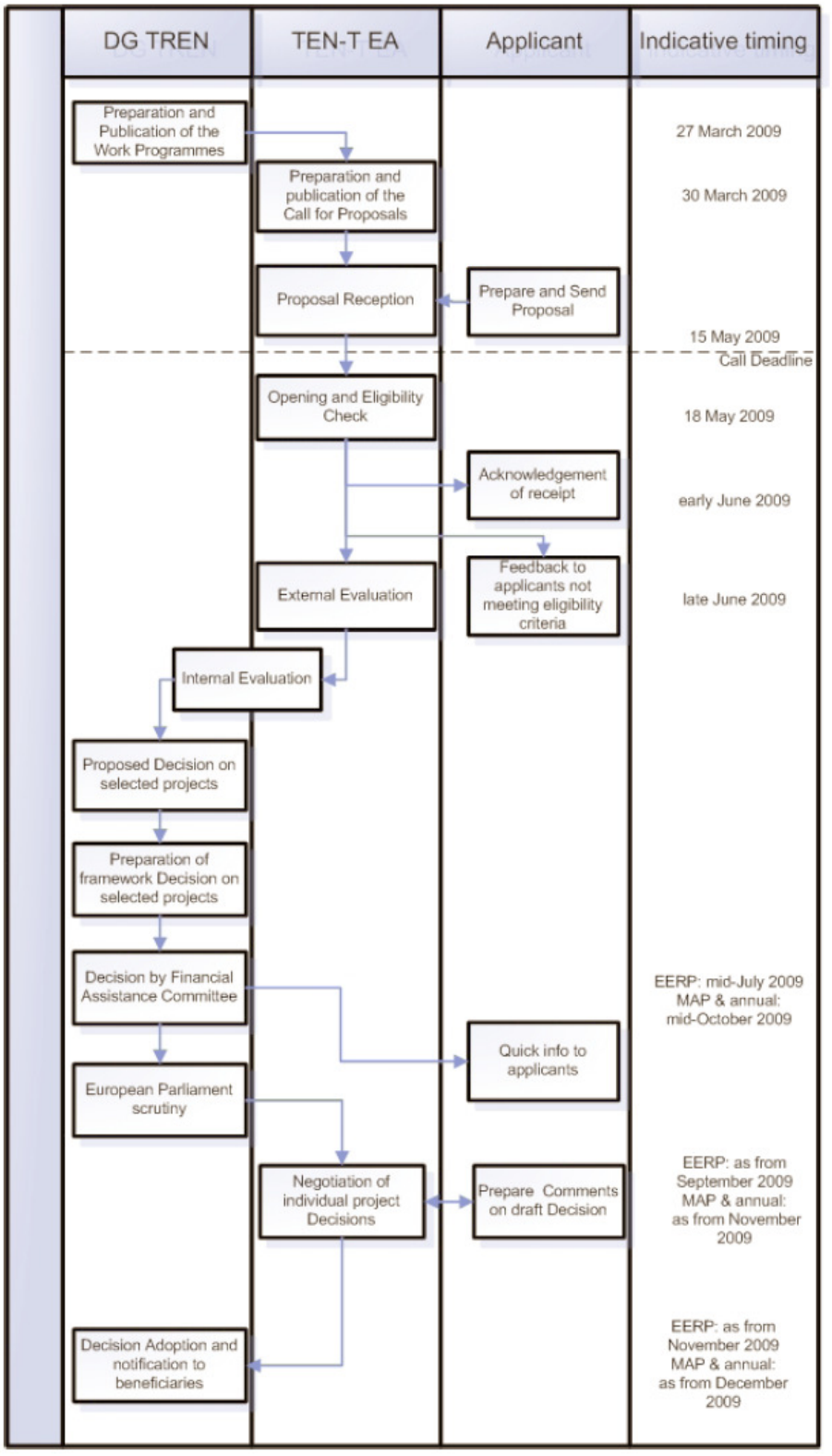
TEN-T Priority projects	1993/96 – 1999 EU 15	2000 – 2006 EU 27	2007 – 2013 EU 27
Cost (€ billion)			
TEN-T 30	32.65	93.7	154
- New Member States (EU 12)			16
- Old Member States (EU 15)			138
Community contribution (€ billion)			
Programme TEN-T	1.35	2.80	5.4
Cohesion Fund	3.83	7.0	12.3
ERDF	1.46	4.81	4.7
EIB Loans and guarantees	9.78	16.1	25
Total Community contribution (€ billion)			
Grants	6.64 (20.3%)	14.61 (15.6%)	22.4 (14.5%)
Grants and loans	16.42 (50.3%)	30.71 (32.8%)	47.4 (30.8%)
Other resources (national)	16.23 (49.7 %)	63 (67.2 %)	106.6 (69.2 %)

Available from DG TREN:

http://ec.europa.eu/transport/infrastructure/funding/funding_en.htm

Appendix 6

Schematic overview TEN-T procedures

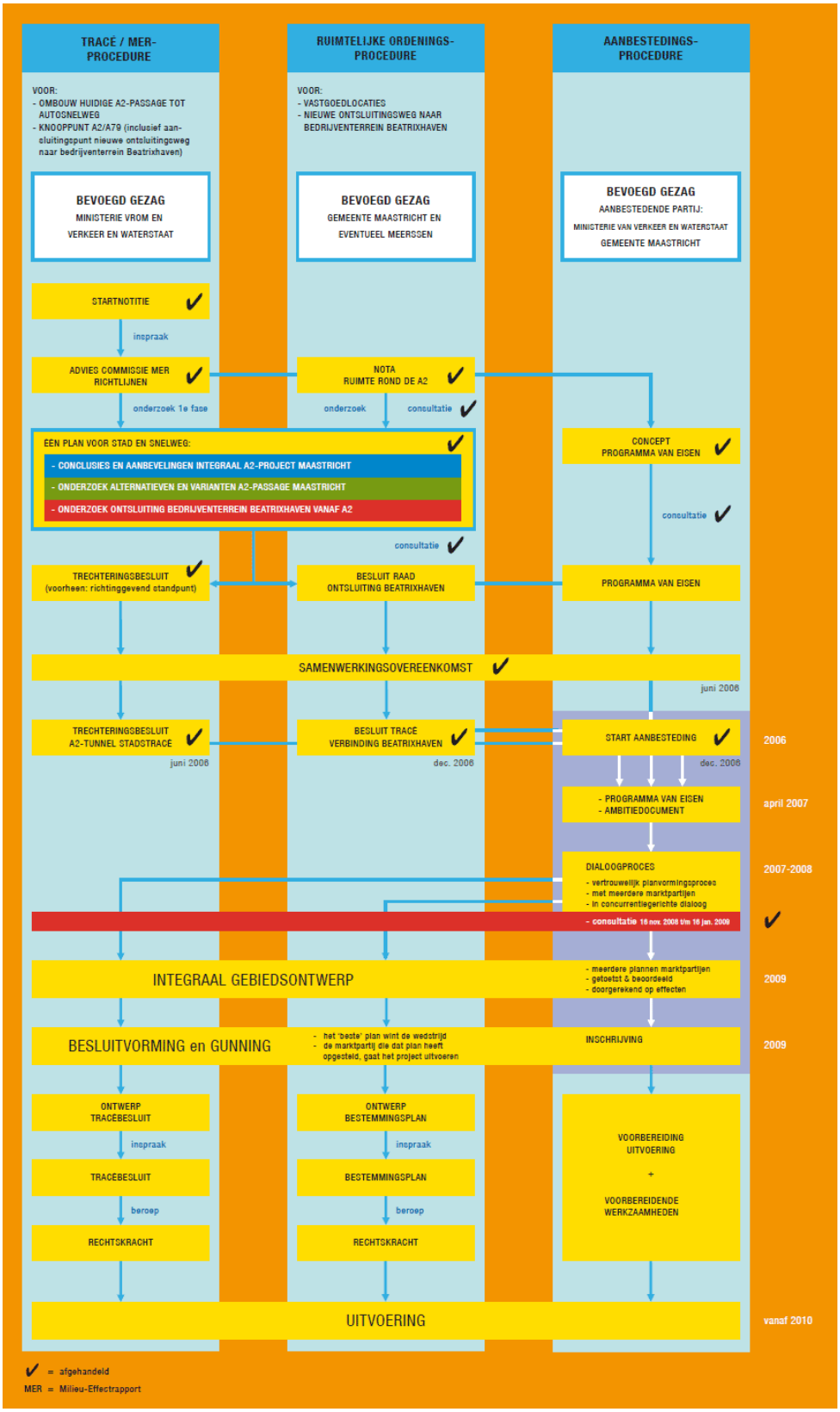


TEN-T application and evaluation procedures.

From: Call 2009, Guide for Applicants (TEN-T EA, 2009)

Appendix 7

Schematic overview of procedures since 2004



From: A2 Maastricht, project organization

Appendix 8

Three-dimensional comparison of MIRT and TEN-T methodologies for ex ante evaluation

Dimension	MIRT	TEN-T
1 **Policy-making perspective**	The MIRT-programme promotes an open plan-making process. Nevertheless, all considered perspectives have role: - Technical-rational: Despite the open approach, the technical dimension of ex ante evaluation still has a role. Ex ante evaluation requires a certain degree of specific expertise. - Communicative: Relevant stakeholders are involved in the process as early as possible. In MIRT communication is more than informing the public, it is consultation and participation. - Institutional: An interactive process requires 'custom-made', situation-specific process designs. Societal and cultural structures must be considered in the development of interaction procedures.	The EU has a strong technical oriented tradition in the evaluation of projects. Communicative aspects are mainly of internal nature. External communicative is unilateral, only the publication of results. Communicative and institutional aspects are left to the individual Member States. Member States are urged to include communicative and institutional aspects into their methods, but the precise interpretation of the directions is an individual issue. This leads to diffuse approaches.
2 **Scope**	The aim behind the planning procedures as they have been designed for the MIRT-programme is to provide a solid strategic and tactical fundament for the operational development of projects. This has to be achieved through strategic preparation of the MIRT-procedures and extensive tactical reconnaissance. Elementary choices are made in the first MIRT-phase, which has a broad orientation. The final decision of the reconnaissance has a tactical character and provides a basis for the rest of the process and is not disputed anymore. The attention for the reconnaissance phase set an extensive frame of reference, which improves the process in later phases. Strategic and tactical choices have been anchored, later stages can concentrate on operational issues. It appears that strategic, tactical and operational planning and ex ante evaluation has been positioned in such a manner that a balanced situation has been generated. Top-down and bottom-up interests are aligned through specific attention for public-public cooperation.	There appears to be a friction between the different scope of ex ante evaluation of projects. Strategic evaluations at the level of TEN-T as a comprehensive and coherent plan are the responsibility of the European Union. The operational evaluation of individual infrastructure projects in TEN-T is the responsibility of the Member States. On the tactical conversion of strategic objective into operational projects the top-down and bottom-up interests of respectively the EU and the Member States collide. From a theoretical point of view, the EU guidelines make an obvious distinction between strategic and operational evaluation of individual projects. The regulating directives provide a useful framework, but again the implementation remains an issue of the individual Member States and much is therefore dependent on their cultural and political backgrounds.
3 **Design of procedures**	The use of standardized ex ante evaluation methods mainly provides benefits. It improves the opportunities for comparison of alternatives and decision-making. The leads to a better final deliverable in the end. When the procedural design of ex ante evaluation studies within the MIRT planning framework is considered from theoretical perspective it may be concluded that both social-economic and environmental assessments are based on fairly complete procedures. The design of ex ante evaluation procedures therefore makes a solid impression.	The five step procedure of the EU for the assessment of project applications is a sound system. From theoretical perspective it is hard to discuss this, since it is more an assessment than an evaluation. The real ex ante evaluations are carried out on national level. The EU regulations obligate the applicators to carry out certain evaluation studies, but there are not many obligations on the procedural design. Considering the obligatory environmental assessments the content of the assessment studies and reports has been described extensively, forcing the Member States to perform fairly complete procedures. For the socio-economic evaluations this procedural guidance is missing. Here harmonization of the guidelines may be recommendable

Appendix 9

Overview of a policy transfer framework

A Policy Transfer Framework

Why Transfer? Continuum: Want To	Why Transfer? Continuum: Have To		Who Is Involved in Transfer?	What Is Transferred?	Past	From Where		Degrees of Transfer	Constraints on Transfer	How To Demonstrate Policy Transfer	How Transfer leads to Policy Failure
Voluntary	Mixtures	Coercive				Within-a Nation	Cross-National				
Lesson Drawing (Perfect Rationality)	Lesson Drawing (Bounded Rationality)	Direct Imposition	Elected Officials	Policies (Goals) (content) (instruments)	Internal	State Governments	International Organizations	Copying	Policy Complexity (Newspaper) (Magazine) (TV) (Radio)	Media	Uniformed Transfer
	International Pressures		Bureaucrats Civil Servants	Programs	Global	City Governments	Regional State Local Governments	Emulation	Past Policies	Reports	Incomplete Transfer
	(Image) (Consensus) (Perceptions)									(Commissioned) (uncommissioned)	
	Externalities	Pressure Groups	Institutions			Local Authorities		Mixtures	Structural Institutional	Conferences	Inappropriate Transfer
	Conditionality	Political Parties	Ideologies					Inspiration	Feasibility	Meetings / Visits	
	(Loans) (Conditions Attached to Business Activity)								(Ideology) (cultural proximity) (technology) (economic) (bureaucratic)		
	Obligations	Policy Entrepreneurs/ Experts	Attitudes/ Cultural Values				Past Relations		Language	Statements (written) (verbal)	
			Consultants Think Tanks Transnational Corporations Supranational Institutions	Negative Lessons							

From: Dolowitz and Marsh, 2002

Appendix 10

Interviews and conversations

Johan Visser
Intelligence Centre for Mobility Policy (KiM)

Jos Arts
Rijkswaterstaat; Faculty of Spatial Sciences, University of Groningen

Karen van Dantzig
DGMO, Ministry of Transport

Steven Wouda en Quirien Engelhard
Centre for Public Participation, Ministry of Transport

Benjamin Beldman
Policy officer to Peter van Dalen, Member of European Parliament and vice-president of the parliamentary commission on transport

Julie Sors
Evaluation Manager, TEN-T Executive Agency

Jeroen Maas
Manager Planning, A2 Maastricht Project